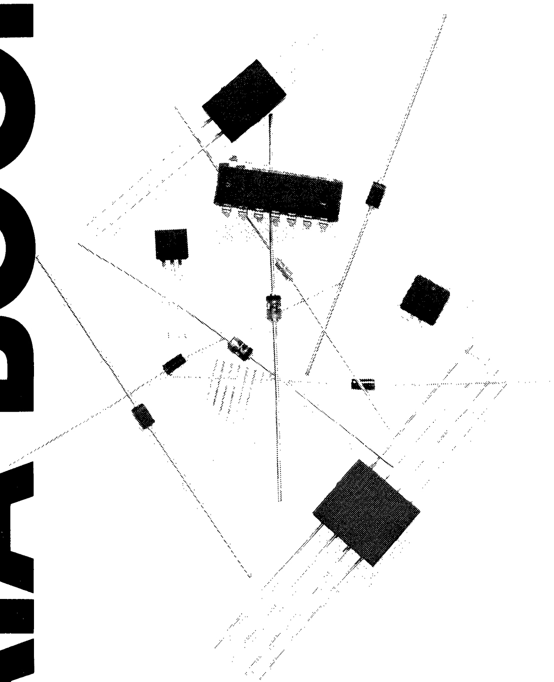
DIODE DATA BOOK

$3.00

FAIRCHILD

DIODE DATA BOOK



FAIRCHILD

464 Ellis Street, Mountain View, California 94042

©1978 Fairchild Camera and Instrument Corporation/464 Ellis Street, Mountain View, California 94042/(415) 962-5011/TWX 910-379-6435

INTRODUCTION

Fairchild Camera and Instrument Corporation is one of the largest suppliers of standard and high-reliability diodes. Our broad line consists of small signal and switching diodes, zener diodes, diode arrays, diode assemblies and rectifiers. Through design and process improvements Fairchild has consistantly been able to deliver excellent quality, low cost diodes in high volume.

This data book is designed to make the selection of diodes very simple. Information is complete and arranged for your convenience.

It contains:
Numeric Index of Devices for quick location of data.
Device Selection Guides by application and product.
Industry Cross Reference, industry versus Fairchild recommended part.
Reliability Information, basis of Fairchild quality.
Product Information, complete data sheets on all standard devices, arranged numerically.
Family Curves, data sheets reference applicable curves.
Glossary
Sales Contacts: addresses of Fairchild Sales Offices, Sales Representatives, and Fairchild Franchised Distributors.

As well as supplying a complete line of standard devices, Fairchild is capable of supplying custom devices tailored to your application. The factory will evaluate your print and recommend the best, most cost effective device.

TABLE OF CONTENTS

NUMERIC PRODUCT LISTING

NUMERIC PRODUCT LISTING (Cont'd)

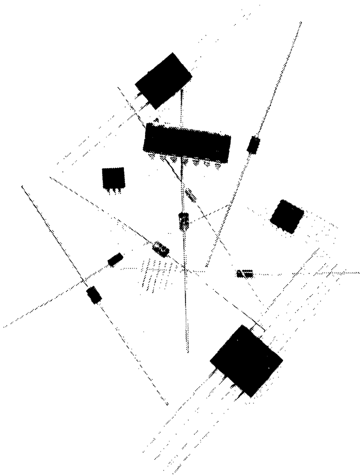
NUMERIC PRODUCT LISTING (Cont'd)

Device	Type	Page No.
FSA2703M	Diode Arrays	3-49
FSA2704M	″	3-49
FSA2705M	″	3-49
FSA2719M	″	3-46
FSA2719P	″	3-46
FSA2720M	″	3-46
FSA2720P	″	3-46
FSA2721M	″	3-46
MV104	Dual Varactor Diode	3-18
RF400	Voltage Variable Capacitor Diode	3-51
RF401	Voltage Variable Capacitor Diode	3-51
RF500	Dual Varactor Diode	3-52
ZPD3,3	Zener Diode	3-53
ZPD3,6	″	3-53
ZPD3,9	″	3-53
ZPD4,3	″	3-53
ZPD4,7	″	3-53
ZPD5,1	″	3-53
ZPD5,6	″	3-53
ZPD6,2	″	3-53
ZPD6,8	″	3-53
ZPD7,5	″	3-53
ZPD8,2	″	3-53
ZPD9,1	″	3-53
ZPD10	″	3-53
ZPD11	″	3-53
ZPD12	″	3-53
ZPD13	″	3-53
ZPD15	″	3-53
ZPD16	″	3-53
ZPD18	″	3-53
ZPD20	″	3-53
ZPD22	″	3-53
ZPD24	″	3-53
ZPD27	″	3-53
ZPD30	″	3-53
ZPD33	″	3-53
1N456	Small Signal Diode	3-55
1N456A	″	3-55
1N457	″	3-55
1N457A	″	3-55
1N458	″	3-55
1N458A	″	3-55
1N459	″	3-55
1N459A	″	3-55
1N461A	″	3-56
1N462A	″	3-56
1N463A	″	3-56
1N464A	″	3-56
1N482B	″	3-57
1N483B	″	3-57
1N484B	″	3-57
1N485B	″	3-57
1N486B	″	3-57
1N625	″	3-58
1N626	″	3-58
1N627	″	3-58
1N628	″	3-58
1N629	″	3-58
1N658	″	3-59
1N659	Small Signal Diode	3-60
1N660	″	3-60
1N661	″	3-60
1N746	Zener Diode	3-61
1N747	″	3-61
1N748	″	3-61
1N749	″	3-61
1N750	″	3-61
1N751	″	3-61
1N752	″	3-61
1N753	″	3-61
1N754	″	3-61
1N756	″	3-61
1N757	″	3-61
1N758	″	3-61
1N759	″	3-61
1N914	Small Signal Diode	3-62
1N914A	″	3-62
1N914B	″	3-62
1N916	″	3-62
1N916A	″	3-62
1N916B	″	3-62
1N957	Zener Diode	3-63
1N958	″	3-63
1N959	″	3-63
1N960	″	3-63
1N961	″	3-63
1N962	″	3-63
1N963	″	3-63
1N964	″	3-63
1N965	″	3-63
1N966	″	3-63
1N967	″	3-63
1N968	″	3-63
1N969	″	3-63
1N970	″	3-63
1N971	″	3-63
1N972	″	3-63
1N973	″	3-63
1N3064	Small Signal Diode	3-64
1N3070	″	3-65
1N3595	″	3-66
1N3600	″	3-67
1N4001	Rectifier	3-68
1N4002	″	3-68
1N4003	″	3-68
1N4004	″	3-68
1N4005	″	3-68
1N4006	″	3-68
1N4007	″	3-68
1N4009	Small Signal Diode	3-69
1N4099	Zener Diode	3-70
1N4100	″	3-70
1N4101	″	3-70
1N4102	″	3-70
1N4103	″	3-70
1N4104	″	3-70
1N4105	″	3-70
1N4106	″	3-70
1N4107	″	3-70

NUMERIC PRODUCT LISTING (Cont'd)

Device	Type	Page No.
1N4108	"	3-70
1N4109	"	3-70
1N4110	"	3-70
1N4111	"	3-70
1N4112	"	3-70
1N4113	"	3-70
1N4114	"	3-70
1N4115	"	3-70
1N4116	"	3-70
1N4117	"	3-70
1N4118	"	3-70
1N4119	"	3-70
1N4120	"	3-70
1N4121	"	3-70
1N4148	Small Signal Diode	3-62
1N4149	"	3-62
1N4150	"	3-67
1N4151	"	3-72
1N4152	"	3-72
1N4153	"	3-72
1N4154	"	3-72
1N4244	"	3-11
1N4305	"	3-64
1N4306	Diode Assembly	3-73
1N4307	"	3-73
1N4376	Small Signal Diode	3-11
1N4446	"	3-62
1N4447	"	3-62
1N4448	"	3-62
1N4449	"	3-62
1N4450	"	3-67
1N4454	"	3-64
1N4620	Zener Diode	3-70
1N4621	"	3-70
1N4622	"	3-70
1N4623	"	3-70
1N4624	"	3-70
1N4625	"	3-70
1N4626	"	3-70
1N4627	"	3-70
1N4728	"	3-75
1N4729	"	3-75
1N4730	"	3-75
1N4731	"	3-75
1N4732	"	3-75
1N4733	"	3-75
1N4734	"	3-75
1N4735	"	3-75
1N4736	"	3-75
1N4737	"	3-75
1N4738	"	3-75
1N4739	"	3-75
1N4740	"	3-75
1N4741	"	3-75
1N4742	"	3-75
1N4743	"	3-75
1N4744	"	3-75
1N4745	"	3-75
1N4746	"	3-75
1N4747	"	3-75

Device	Type	Page No.
1N4748	Zener Diode	3-75
1N4749	"	3-75
1N4750	"	3-75
1N4751	"	3-75
1N4752	"	3-75
1N4933	Rectifier	3-77
1N4934	"	3-77
1N4935	"	3-77
1N4936	"	3-77
1N4937	"	3-77
1N4938	"	3-65
1N5226	Zener Diode	3-78
1N5227	"	3-78
1N5228	"	3-78
1N5229	"	3-78
1N5230	"	3-78
1N5231	"	3-78
1N5232	"	3-78
1N5233	"	3-78
1N5234	"	3-78
1N5235	"	3-78
1N5236	"	3-78
1N5237	"	3-78
1N5238	"	3-78
1N5239	"	3-78
1N5240	"	3-78
1N5241	"	3-78
1N5242	"	3-78
1N5243	"	3-78
1N5244	"	3-78
1N5245	"	3-78
1N5246	"	3-78
1N5247	"	3-78
1N5248	"	3-78
1N5249	"	3-78
1N5250	"	3-78
1N5251	"	3-78
1N5252	"	3-78
1N5253	"	3-78
1N5254	"	3-78
1N5255	"	3-78
1N5256	"	3-78
1N5257	"	3-78
1N5282	Small Signal Diode	3-80
1N5390	Hot Carrier Diode	3-32
1N5768	Diode Array	3-81
1N5770	"	3-81
1N5772	"	3-81
1N5774	"	3-81
1N6099	"	3-66
1N6100	"	3-83
1N6101	"	3-83
1S44	Small Signal Diode	3-85
1S920	"	3-86
1S921	"	3-86
1S923	"	3-86



DIODES

COMPUTER DIODES (BY ASCENDING t_{rr})

GLASS PACKAGE

DEVICE NO.	t_{rr} ns Max	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	Package No.	Page No.
FD700	0.70	30	50		20	1.1		50	1.0	DO-7	3-31
1N4376	0.75	20	100		10	1.1		50	1.0	DO-7	3-11
1N4244	0.75	20	100		10	1.0		20	0.8	DO-7	3-11
BAY82	0.75	15	100		12	1.0		20	1.3	DO-7	3-11
FD777	0.75	15	100		8.0	1.0		20	1.3	DO-7	3-31
1N5282	2.0	80	100		55	1.3		500	2.5	DO-35	3-80
1N4153	2.0	75	50		50	0.88		20	4.0	DO-35	3-72
1N4151	2.0	75	50		50	1.0		50	4.0	DO-35	3-72
1N4305	2.0	75	100		50	0.85		10	2.0	DO-35	3-64
BAY71	2.0	50	100		35	1.0		20	2.0	DO-35	3-7
1N4152	2.0	40	50		30	0.88		20	4.0	DO-35	3-72
1N4154	2.0	35	100		25	1.0		30	4.0	DO-35	3-72
1N914	4.0	100	25		20	1.0		10	4.0	DO-35	3-62
1N914A	4.0	100	25		20	1.0		20	4.0	DO-35	3-62
1N914B	4.0	100	25		20	1.0		100	4.0	DO-35	3-62
1N916	4.0	100	25		20	1.0		10	2.0	DO-35	3-62
1N916A	4.0	100	25		20	1.0		20	2.0	DO-35	3-62
1N916B	4.0	100	25		20	1.0		30	2.0	DO-35	3-62
1N4148	4.0	100	25		20	1.0		10	4.0	DO-35	3-62
1N4149	4.0	100	25		20	1.0		10	2.0	DO-35	3-62
1N4446	4.0	100	25		20	1.0		20	4.0	DO-35	3-62
1N4447	4.0	100	25		20	1.0		20	4.0	DO-35	3-62
1N4448	4.0	100	25		20	1.0		100	2.0	DO-35	3-62
1N4449	4.0	100	25		20	1.0		30	2.0	DO-35	3-62
1N3600	4.0	75	100		50	1.0		200	2.5	DO-35	3-67
FDH600	4.0	75	100		50	1.0		200	2.5	DO-35	3-28
1N3064	4.0	75	100		50	1.0		10	2.0	DO-35	3-64
1N4150	4.0	75	100		50	1.0		200	2.5	DO-35	3-67
1N4454	4.0	75	100		50	1.0		10	2.0	DO-35	3-64
BAX13	4.0	50	200		50	1.0		20	3.0	DO-35	3-5
BAY74	4.0	50	100		35	1.1		300	3.0	DO-35	3-10
FDH900	4.0	45	500		40	1.1		100	3.0	DO-35	3-29

NOTE—Page number referenced for JAN, JANTX & JANTXV Devices is for standard device, use for electrical characteristics.

DIODES

COMPUTER DIODES (BY ASCENDING t_{rr})
GLASS PACKAGE

DEVICE NO.	t_{rr} ns Max	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	Package No.	Page No.
FDH666	4.0	40	100		25	1.0		100	3.5	DO-35	3-28
1N4450	4.0	40	50		30	1.0		200	4.0	DO-35	3-67
1N4009	4.0	35	100		25	1.0		30	4.0	DO-35	3-69
1N625	4.0	30	1000		20	1.5		4.0	—	DO-35	3-58
FDH999	5.0	35	1000		25	1.0		10	5.0	DO-35	3-29
FDH1000	100	75	50		20	1.0		500	5.0	DO-35	3-30

LOW LEAKAGE DIODES (BY DESCENDING BV)
GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	Package No.	Page No.
1N486B	250	50		225	1.0		100	—	DO-35	3-57
1N485B	200	25		180	1.0		100	—	DO-35	3-57
1N459	200	25		175	1.0		3.0	—	DO-35	3-55
1N459A	200	25		175	1.0		100	—	DO-35	3-55
FDH300	150	1.0		125	1.0		200	6.0	DO-35	3-26
1N3595	150	1.0		125	1.0		200	8.0	DO-35	3-66
1N6099	150	1.0		125	1.0		200	8.0	DO-35	3-66
FDH333	150	3.0		125	1.05		200	6.0	DO-35	3-26
1N458A	150	5.0		125	1.0		100	—	DO-35	3-55
1N484B	150	25		130	1.0		100	—	DO-35	3-57
1N458	150	25		125	1.0		7.0	6.0	DO-35	3-55
BAY73	125	5.0		100	1.0		200	8.0	DO-35	3-9
1N483B	80	25		70	1.0		100	—	DO-35	3-57
1N457	70	25		60	1.0		20	8.0	DO-35	3-55
1N457A	70	25		60	1.0		100	—	DO-35	3-55
1N482B	40	25		36	1.0		100	—	DO-35	3-57
FJT1100	30	0.001		5.0	1.05		10	1.5	DO-7	3-33
1N456A	30	25		25	1.0		100	—	DO-35	3-55
1N456	30	25		25	1.0		40	10	DO-35	3-55

DIODES

HIGH VOLTAGE SWITCHING DIODES (BY DESCENDING BV)

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page No.
BAV21	250	100		200	1.0		100	—	50	DO-35	3-3
1N661	240	10000		200	1.0		6.0	—	300	DO-35	3-60
FDH400	200	100		150	1.0		200	2.0	50	DO-35	3-27
1N3070	200	100		175	1.0		100	5.0	50	DO-35	3-65
1N4938	200	100		175	1.0		100	5.0	50	DO-35	3-65
BAV20	200	100		150	1.0		100	—	50	DO-35	3-3
1N629	200	1000		175	1.5		4.0	—	1000	DO-35	3-58
FDH444	150	50		100	1.1		200	2.5	60	DO-35	3-27
1N628	150	1000		125	1.5		4.0	—	1000	DO-35	3-58
BAY72	125	100		100	1.0		100	5.0	50	DO-35	3-8
BAY80	120	100		120	1.0		150	6.0	—	DO-35	3-8
BAV19	120	100		100	1.0		100	—	50	DO-35	3-3
1N658	120	50		50	1.0		100	—	300	DO-35	3-59
1N660	120	5000		100	1.0		6.0	—	300	DO-35	3-60
1N627	100	1000		75	1.5		4.0	—	1000	DO-35	3-58
1N626	50	1000		35	1.5		4.0	—	1000	DO-35	3-58

GENERAL PURPOSE DIODES (BY DESCENDING BV)

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page No.
1N661	240	10000		200	1.0		6.0	—	300	DO-35	3-60
1S923	200	100		200	1.2		200	—	—	DO-35	3-86
1N463A	200	500		175	1.0		100	—	—	DO-35	3-56
BA129	200	10		180	1.0		50	6.0	—	DO-35	3-9
1S922	150	100		150	1.2		200	—	—	DO-35	3-86
BAX16	150	100		150	1.0		1.0	10	120	DO-35	3-6
1N660	120	5000		100	1.0		6.0	—	—	DO-35	3-60
1S921	100	100		100	1.2		200	—	—	DO-35	3-86
BA219	100	200		50	0.85		10	5.0	—	DO-35	3-14
BA128	75	100		50	1.0		50	5.0	—	DO-35	3-12
1N462A	70	500		60	1.0		100	—	—	DO-35	3-56
BAV18	60	100		50	1.0		100	—	50	DO-35	3-3
1N659	60	5000		50	1.0		6.0	—	—	DO-35	3-60
1S920	50	100		50	1.2		200	—	—	DO-35	3-86

DIODES

GENERAL PURPOSE DIODES (BY DESCENDING BV)
GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page No.
BA218	50	50		25	1.0		10	5.0	—	DO-35	3-14
1S44	50	50		10	1.15		10	6.0	—	DO-35	3-85
FDH900	45	500		40	1.1		100	3.0	4.0	DO-35	3-29
FDH999	35	1000		25	1.0		10	5.0	5.0	DO-35	3-29
1N461A	30	500		25	1.0		100	10	—	DO-35	3-56
BA217	30	50		10	1.0		10	5.0	—	DO-35	3-14
BA130	30	100		25	1.0		10	2.0	—	DO-35	3-12
BAV17	25	100		20	1.0		100	—	50	DO-35	3-3
BA216	10	1500		10	1.0		15	—	—	DO-35	3-14

MILITARY QUALIFIED SMALL SIGNAL DIODES (NUMERIC LISTING)
GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page No.
1N457JAN	70	25		60	1.0		20	6.0	—	DO-7	3-55
1N458JAN	150	25		125	1.0		7.0	6.0	—	DO-7	3-55
1N459JAN	200	25		175	1.0		3.0	6.0	—	DO-7	3-55
1N483BJAN	80	25		70	1.0		100	—	—	DO-7	3-57
1N483BJANTX	80	25		70	1.0		100	—	—	DO-7	3-57
1N485BJAN	200	25		180	1.0		100	—	—	DO-7	3-57
1N485BJANTX	200	25		180	1.0		100	—	—	DO-7	3-57
1N486BJAN	250	25		225	1.0		100	—	—	DO-7	3-57
1N486BJANTX	250	25		225	1.0		100	—	—	DO-7	3-57
1N914JAN	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N914JANTX	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N3064JAN	75	100		50	1.0		10	2.0	4.0	DO-7	3-62
1N3064JANTX	75	100		50	1.0		10	2.0	4.0	DO-7	3-64
1N3595JAN	150	1.0		125	1.0		200	8.0	3000	DO-7	3-66
1N3595JANTX	150	1.0		125	1.0		200	8.0	3000	DO-7	3-66
1N3595JANTXV	150	1.0		125	1.0		200	8.0	3000	DO-7	3-66
1N3600JAN	75	100		50	1.0		200	2.5	4.0	DO-7	3-67
1N3600JANTX	75	100		50	1.0		200	2.5	4.0	DO-7	3-67

DIODES

MILITARY QUALIFIED SMALL SIGNAL DIODES (NUMERIC LISTING)

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page No.
1N3600JANTXV	75	100		50	1.0		200	2.5	4.0	DO-7	3-67
1N4148JAN	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4148JANTX	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4148JANTXV	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4148-1JAN	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4148-1JANTX	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4148-1JANTXV	100	25		20	1.0		10	4.0	4.0	DO-35	3-62
1N4150JAN	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4150JANTX	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4150JANTXV	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4150-1JAN	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4150-1JANTX	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4150-1JANTXV	75	100		50	1.0		200	2.5	4.0	DO-35	3-67
1N4376JAN	20	100		10	1.1		50	1.0	0.75	DO-7	3-11
1N4376JANTX	20	100		10	1.1		50	1.0	0.75	DO-7	3-11
1N4454JAN	75	100		50	1.0		10	2.0	4.0	DO-35	3-64
1N4454JANTX	75	100		50	1.0		10	2.0	4.0	DO-35	3-64
1N4454JANTXV	75	100		50	1.0		10	2.0	4.0	DO-35	3-64
1N4454-1JAN	75	100		50	1.0		10	2.0	4.0	DO-35	3-64
1N4454-JANTX	75	100		50	1.0		10	2.0	4.0	DO-35	3-64
1N4454-1JANTXV	75	100		50	1.0		10	2.0	4.0	DO-35	3-64

HOT CARRIER DIODE

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max.	@	I_F mA	C pF Max	NF dB Max	Package No.	Page No.
FH1100	5.0	1000		1.0	0.55		10	1.0	10	DO-7	3-32
1N5390	5.0	50		1.0	0.55		10	1.0	10	DO-7	3-32

1

DIODES

VOLTAGE VARIABLE CAPACITOR DIODES

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	C pF Typ	Figure of Merit (Q) Min	C1/C4 V_{R1} = 0.1V V_{R4} = 4.0V Min	C3/C20 V_{R3} = 3V V_{R20} = 20V Min	Package No.	Page No.
RF400	35	30		30	10	350	2.0	2.0	DO-35	3-51
RF401	35	30		30	7.0	350	2.0	2.0	DO-35	3-51

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	C pF V_R=3V	C pF V_R=25V	C_3/C_{25} V_R=3V V_R=25V	Package No.	Page No.
BB121A	30	50		28	11	2.2	5.2	DO-35	3-16
BB121B	30	50		28	12	2.45	5.2	DO-35	3-16
BB122	30	50		28	13	2.45	5.2	DO-35	3-16
BB139	30	50		28	29	5.1	5.7	DO-35	3-17

PLASTIC PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	C pF Min-Max	Figure of Merit (Q) Min	C3/C30 V_{R3} = 3.0V V_{R30} = 30V	Package No.	Page No.
BB204B	—	50		30	37-42	—	2.4-2.8	TO-92	3-18
BB204G	—	50		30	34-39	—	2.4-2.8	TO-92	3-18
MV104	32	50		30	37-42	100	2.5-2.8	TO-92	3-18
RF500	35	50		30	38-42	125	2.5-2.8	TO-92	3-52

BANDSWITCH DIODES

GLASS PACKAGE

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	C pF Max	R_S Ω Max	V_F V Max	@	I_F mA	Package No.	Page No.
BA243	20	100		15	2.0	1.0	1.0		100	DO-35	3-15
BA244	20	100		15	2.0	0.5	1.0		100	DO-35	3-15

ZENER DIODES (BY ASCENDING V_Z)

GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N746A	3.3	5	28	20	10		1.0	−.070	500	DO-35	3-61
1N4620	3.3	5	1650	0.25	7.5		1.5	—	500	DO-35	3-70
1N5226B	3.3	5	28	20	25		1.0	(−.070)	500	DO-35	3-78
BZX55C3V3	3.3	5	85	5.0	40		1.0	−.060	500	DO-35	3-19
BZY88C3V3	3.3	5	22	20	3.0		1.0	(−.091)	500	DO-35	3-21
ZPD3,3	3.3	5	90	5.0	—		—	(−.080)	500	DO-35	3-53

Tolerance: All zener diodes are also available in ±1%, ±2%, ±10% and ±20% tolerances.

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R µA Max	@ V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N4728A	3.3	5	10	76	100	1.0	—	1000	DO-41	3-75
BZX85C3V3	3.3	5	20	80	40	1.0	−.065	1000	DO-41	3-20
1N747A	3.6	5	24	20	10	1.0	−.065	500	DO-35	3-61
1N4621	3.6	5	1700	0.25	7.5	2.0	—	500	DO-35	3-70
1N5227B	3.6	5	24	20	15	1.0	(−.065)	500	DO-35	3-78
BZX55C3V6	3.6	5	85	5.0	40	1.0	−.055	500	DO-35	3-19
BZY88C3V6	3.6	5	20	20	3.0	1.0	(−.069)	500	DO-35	3-21
ZPD3,6	3.6	5	90	5.0	—	—	(−.080)	500	DO-35	3-53
1N4729A	3.6	5	10	69	100	1.0	—	1000	DO-41	3-75
BZX85C3V6	3.6	5	15	60	20	1.0	−.065	1000	DO-41	3-20
1N748A	3.9	5	23	20	10	1.0	−.060	500	DO-35	3-61
1N4622	3.9	5	1650	0.25	5.0	2.0	—	500	DO-35	3-70
1N5228B	3.9	5	23	20	10	1.0	(−.060)	500	DO-35	3-78
BZX55C3V9	3.9	5	80	5.0	40	1.0	−.050	500	DO-35	3-19
BZY88C3V9	3.9	5	18	20	3.0	1.0	(−.062)	500	DO-35	3-21
ZPD3,9	3.9	5	90	5.0	—	—	(−.070)	500	DO-35	3-53
1N4730A	3.9	5	9.0	64	50	1.0	—	1000	DO-41	3-75
BZX85C3V9	3.9	5	15	60	10	1.0	−.045	1000	DO-41	3-20
1N749A	4.3	5	22	20	2.0	1.0	±.055	500	DO-35	3-61
1N4623	4.3	5	1600	0.25	4.0	2.0	—	500	DO-35	3-70
1N5229B	4.3	5	22	20	5.0	1.0	(±.055)	500	DO-35	3-78
BZX55C4V3	4.3	5	70	5.0	40	1.5	−.040	500	DO-35	3-19
BZY88C4V3	4.3	5	17	20	3.0	1.0	(−.047)	500	DO-35	3-21
ZPD4,3	4.3	5	90	5.0	—	—	(−.060)	500	DO-35	3-53
1N4731A	4.3	5	9.0	58	10	1.0	—	1000	DO-41	3-75
BZX85C4V3	4.3	5	13	50	3.0	1.0	−.020	1000	DO-41	3-20
1N750A	4.7	5	19	20	2.0	1.0	±.043	500	DO-35	3-61
1N4624	4.7	5	1550	0.25	10	3.0	—	500	DO-35	3-70
1N5230B	4.7	5	19	20	5.0	2.0	(±.030)	500	DO-35	3-78
BZX55C4V7	4.7	5	60	5.0	30	1.5	−.020	500	DO-35	3-19
BZY88C4V7	4.7	5	17	20	3.0	2.0	(−.032)	500	DO-35	3-21
ZPD4,7	4.7	5	78	5.0	—	—	(−.050)	500	DO-35	3-53
1N4732A	4.7	5	8.0	53	10	1.0	—	1000	DO-41	3-75
BZX85C4V7	4.7	5	13	45	3.0	1.5	+.005	1000	DO-41	3-20
1N751A	5.1	5	17	20	1.0	1.0	±.030	500	DO-35	3-61
1N4625	5.1	5	1500	0.25	10	3.0	—	500	DO-35	3-70

Tolerance: All zener diodes are also available in ±1%, 2±%, ±10% and ±20% tolerances.

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N5231B	5.1	5	17	20	5.0		2.0	(±.030)	500	DO-35	3-78
BZX55C5V1	5.1	5	35	5.0	2.0		1.0	+.010	500	DO-35	3-19
BZY88C5V1	5.1	5	11	20	1.0		2.0	(−.030)	500	DO-35	3-21
ZPD5,1	5.1	5	60	5.0	0.1		0.8	(+.040)	500	DO-35	3-53
1N4733A	5.1	5	7.0	49	10		1.0	—	1000	DO-41	3-75
BZX85C5V1	5.1	5	10	45	1.0		2.0	+.010	1000	DO-41	3-20
1N752A	5.6	5	11	20	1.0		1.0	+.028	500	DO-35	3-61
1N4626	5.6	5	1400	0.25	10		4.0	—	500	DO-35	3-70
1N5232B	5.6	5	11	20	5.0		3.0	(±.038)	500	DO-35	3-78
BZX55C5V6	5.6	5	25	5.0	2.0		1.0	+.025	500	DO-35	3-19
BZY88C5V6	5.6	5	8	20	1.0		2.0	(+.054)	500	DO-35	3-21
ZPD5,6	5.6	5	40	5.0	0.1		1.0	(+.060)	500	DO-35	3-53
1N4734A	5.6	5	5.0	45	10		2.0	—	1000	DO-41	3-75
BZX85C5V6	5.6	5	7.0	45	1.0		2.0	+.025	1000	DO-41	3-20
1N5233B	6.0	5	7.0	20	5.0		3.5	(+.038)	500	DO-35	3-78
1N753A	6.2	5	7.0	20	0.1		1.0	+.045	500	DO-35	3-61
1N4627	6.2	5	1200	0.25	10		5.0	—	500	DO-35	3-70
1N5234B	6.2	5	7.0	20	5.0		4.0	(+.045)	500	DO-35	3-78
BZX55C6V2	6.2	5	10	5.0	2.0		2.0	+.032	500	DO-35	3-19
BZY88C6V2	6.2	5	3.1	20	1.0		2.0	(+.065)	500	DO-35	3-21
ZPD6,2	6.2	5	10	5.0	0.1		2.0	(+.070)	500	DO-35	3-53
1N4735A	6.2	5	2.0	41	10		3.0	—	1000	DO-41	3-75
BZX85C6V2	6.2	5	4.0	35	1.0		3.0	+.032	1000	DO-41	3-20
1N754A	6.8	5	5.0	20	0.1		1.0	+.050	500	DO-35	3-61
1N957B	6.8	5	4.5	18.5	150		5.2	+.050	500	DO-35	3-63
1N4099	6.8	5	200	0.25	10		5.2	—	500	DO-35	3-70
1N5235B	6.8	5	5.0	20	3.0		5.0	(+.050)	500	DO-35	3-78
BZX55C6V8	6.8	5	8.0	5.0	2.0		3.0	+.040	500	DO-35	3-19
BZY88C6V8	6.8	5	3.0	20	1.0		3.0	(+.070)	500	DO-35	3-21
ZPD6,8	6.8	5	8.0	5.0	0.1		3.0	(+.070)	500	DO-35	3-53
1N4736A	6.8	5	3.5	37	10		4.0	—	1000	DO-41	3-75
BZX85C6V8	6.8	5	3.5	35	1.0		4.0	+.040	1000	DO-41	3-20
1N755A	7.5	5	6.0	20	0.1		1.0	+.058	500	DO-35	3-61

Tolerance: All zener diodes are also available in ±1%, ±2%, ±10%, and ±20% tolerances.

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N958B	7.5	5	5.5	16.5	75		5.7	+.058	500	DO-35	3-63
1N4100	7.5	5	200	0.25	10		5.7	—	500	DO-35	3-70
1N5236B	7.5	5	6.0	20	3.0		6.0	(+.058)	500	DO-35	3-78
BZX55C7V5	7.5	5	7.0	5.0	2.0		5.0	+.045	500	DO-35	3-19
BZY88C7V5	7.5	5	5.0	20	0.5		3.0	(+.079)	500	DO-35	3-21
ZPD7,5	7.5	5	7.0	5.0	0.1		5.0	(+.070)	500	DO-35	3-53
1N4737A	7.5	5	4.0	34	10		5.0	—	1000	DO-41	3-75
BZX85C7V5	7.5	5	3.0	35	1.0		4.5	+.045	1000	DO-41	3-20
1N756A	8.2	5	8.0	20	0.1		1.0	+.062	500	DO-35	3-61
1N4101	8.2	5	200	0.25	1.0		6.3	—	500	DO-35	3-70
1N959B	8.2	5	6.5	15	50		6.2	+.062	500	DO-35	3-63
1N5237B	8.2	5	8.0	20	3.0		6.5	(+.062)	500	DO-35	3-78
BZX55C8V2	8.2	5	7.0	5.0	2.0		6.0	+.048	500	DO-35	3-19
BZY88C8V2	8.2	5	6.0	20	0.4		3.0	(+.073)	500	DO-35	3-21
ZPD8,2	8.2	5	7.0	5.0	0.1		6.0	(+.070)	500	DO-35	3-53
1N4738A	8.2	5	4.5	31	10		6.0	—	1000	DO-41	3-75
BZX85C8V2	8.2	5	5.0	25	1.0		5.0	+.048	1000	DO-41	3-20
1N4102	8.7	5	200	0.25	1.0		6.7	—	500	DO-35	3-70
1N5238B	8.7	5	8.0	20	3.0		6.5	(+.065)	500	DO-35	3-78
1N757A	9.1	5	10	20	0.1		1.0	+.068	500	DO-35	3-61
1N960B	9.1	5	7.5	14	25		6.9	+.068	500	DO-35	3-63
1N4103	9.1	5	200	0.25	1.0		7.0	—	500	DO-35	3-70
1N5239B	9.1	5	10	20	3.0		7.0	(+.068)	500	DO-35	3-78
BZX55C9V1	9.1	5	10	5.0	2.0		7.0	+.050	500	DO-35	3-19
BZY88C9V1	9.1	5	7.0	20	0.4		5.0	(+.077)	500	DO-35	3-21
ZPD9,1	9.1	5	10	5.0	0.1		7.0	(+.080)	500	DO-35	3-53
1N4739A	9.1	5	5.0	28	10		7.0	—	1000	DO-41	3-75
BZX85C9V1	9.1	5	5.0	25	1.0		6.5	+.051	1000	DO-41	3-20
1N758A	10	5	17	20	0.1		1.0	+.075	500	DO-35	3-61
1N961B	10	5	8.5	12.5	10		7.6	+.072	500	DO-35	3-63
1N4104	10	5	200	0.25	1.0		7.6	—	500	DO-35	3-70
1N5240B	10	5	17	20	3.0		8.0	(+.075)	500	DO-35	3-78
BZX55C10	10	5	15	5.0	2.0		7.5	+.055	500	DO-35	3-19
BZY88C10	10	5	25	5.0	2.5		6.7	(+.072)	500	DO-35	3-21
ZPD10	10	5	15	5.0	0.1		7.5	(+.080)	500	DO-35	3-53

*Tolerance: All zener diodes are also available in ±1%, ±2%, ±10% and ±20% tolerances.

1

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R µA Max	@	V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N4740A	10	5	7.0	25	10		7.6	—	1000	DO-41	3-75
BZX85C10	10	5	7.0	25	0.5		7.0	+.055	1000	DO-41	3-20
1N962B	11	5	9.5	11.5	5.0		8.4	+.073	500	DO-35	3-63
1N4105	11	5	200	0.25	0.05		8.5	—	500	DO-35	3-70
1N5241B	11	5	22	20	2.0		8.4	(+.076)	500	DO-35	3-78
BZX55C11	11	5	20	5.0	2.0		8.5	+.060	500	DO-35	3-19
BZY88C11	11	5	35	5.0	2.5		7.37	(+.073)	500	DO-35	3-21
ZPD11	11	5	20	5.0	0.1		8.5	(+.090)	500	DO-35	3-53
1N4741A	11	5	8.0	23	5.0		8.4	—	1000	DO-41	3-75
BZX85C11	11	5	8.0	20	0.5		7.7	+.060	1000	DO-41	3-20
1N759A	12	5	30	20	0.1		1.0	+.077	500	DO-35	3-61
1N963B	12	5	11.5	10.5	5.0		9.1	+.076	500	DO-35	3-63
1N4106	12	5	200	0.25	0.05		9.2	—	500	DO-35	3-70
1N5242B	12	5	30	20	1.0		9.1	(+.077)	500	DO-35	3-78
BZX55C12	12	5	20	5.0	2.0		9.0	+.065	500	DO-35	3-19
BZY88C12	12	5	35	5.0	2.5		8.04	(+.076)	500	DO-35	3-21
ZPD12	12	5	20	5.0	0.1		9.0	(+.090)	500	DO-35	3-53
1N4742A	12	5	9.0	21	5.0		9.1	—	1000	DO-41	3-75
BZX85C12	12	5	9.0	20	0.5		8.4	+.065	1000	DO-41	3-20
1N964B	13	5	13	9.5	5.0		9.9	+.079	500	DO-35	3-63
1N4107	13	5	200	0.25	0.05		9.9	—	500	DO-35	3-70
1N5243B	13	5	13	9.5	0.5		9.9	(+.079)	500	DO-35	3-78
BZX55C13	13	5	26	5.0	2.0		10	+.070	500	DO-35	3-19
BZY88C13	13	5	35	5.0	2.5		8.71	(+.079)	500	DO-35	3-21
ZPD13	13	5	25	5.0	0.1		10	(+.090)	500	DO-35	3-53
1N4743A	13	5	10	19	5.0		9.9	—	1000	DO-41	3-75
BZX85C13	13	5	10	20	0.5		9.1	+.065	1000	DO-41	3-20
1N4108	14	5	200	0.25	0.05		10.7	—	500	DO-35	3-70
1N5244B	14	5	15	9.0	0.1		10	(+.082)	500	DO-35	3-78
1N965B	15	5	16	8.5	5.0		11.4	+.082	500	DO-35	3-63
1N4109	15	5	100	0.25	0.05		11.4	—	500	DO-35	3-70
1N5245B	15	5	16	8.5	0.1		11	(+.082)	500	DO-35	3-78
BZX55C15	15	5	30	5.0	2.0		11	+.070	500	DO-35	3-19
BZY88C15	15	5	40	5.0	2.5		10.05	(+.082)	500	DO-35	3-21
ZPD15	15	5	30	5.0	0.1		11	(+.090)	500	DO-35	3-53

* Tolerance: All zener diodes are also available in ±1%, ±2%, ±10% and ±20% tolerances.

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@ V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
1N4744A	15	5	14	17	5.0	11.4	—	1000	DO-41	3-75
BZX85C15	15	5	15	15	0.5	10.5	+.070	1000	DO-41	3-20
1N966B	16	5	17	7.8	5.0	12.2	+.083	500	DO-35	3-63
1N4110	16	5	100	0.25	0.05	12.2	—	500	DO-35	3-70
1N5246B	16	5	17	7.8	0.1	12	(+.083)	500	DO-35	3-78
BZX55C16	16	5	40	5.0	2.0	12	+.075	500	DO-35	3-19
BZY88C16	16	5	45	5.0	2.5	10.72	(+.083)	500	DO-35	3-21
ZPD16	16	5	40	5.0	0.1	12	(+.095)	500	DO-35	3-53
1N4745A	16	5	16	15.5	5.0	12.2	—	1000	DO-41	3-75
BZX85C16	16	5	15	15	0.5	11.0	+.070	1000	DO-41	3-20
1N4111	17	5	100	0.25	0.05	13.0	—	500	DO-35	3-70
1N5247B	17	5	19	7.4	0.1	13	(+.084)	500	DO-35	3-78
1N4112	18	5	100	0.25	0.05	13.7	—	500	DO-35	3-63
1N967B	18	5	21	7.0	5.0	13.7	+.085	500	DO-35	3-70
1N5248B	18	5	21	7.0	0.1	14	(+.085)	500	DO-35	3-78
BZX55C18	18	5	55	5.0	2.0	14	+.075	500	DO-35	3-19
BZY88C18	18	5	50	5.0	2.5	12.06	(+.085)	500	DO-35	3-21
ZPD18	18	5	50	5.0	0.1	14	(+.095)	500	DO-35	3-53
1N4746A	18	5	20	14	5.0	13.7	—	1000	DO-41	3-75
BZX85C18	18	5	20	15	0.5	12.5	+.075	1000	DO-41	3-20
1N4113	19	5	150	0.25	0.05	14.5	—	500	DO-35	3-17
1N5249B	19	5	23	6.6	0.1	14	(+.086)	500	DO-35	3-78
1N968B	20	5	25	6.2	5.0	15.2	+.086	500	DO-35	3-63
1N4114	20	5	150	0.25	0.01	15.2	—	500	DO-35	3-70
1N5250B	20	5	25	6.2	0.1	15	(+.086)	500	DO-35	3-78
BZX55C20	20	5	55	5.0	2.0	15	+.080	500	DO-35	3-19
BZY88C20	20	5	60	5.0	2.5	13.4	(+.086)	500	DO-35	3-21
ZPD20	20	5	50	5.0	0.1	15	(+.100)	500	DO-35	3-53
1N4747A	20	5	22	12.5	5.0	15.2	—	1000	DO-41	3-75
BZX85C20	20	5	24	10	0.5	14	+.075	1000	DO-41	3-20
1N969B	22	5	29	5.6	5.0	16.7	+.087	500	DO-35	3-63
1N4115	22	5	150	0.25	0.01	16.8	—	500	DO-35	3-70
1N5251B	22	5	29	5.6	0.1	17	(+.087)	500	DO-35	3-78
BZX55C22	22	5	55	5.0	2.0	17	+.080	500	DO-35	3-19
BZY88C22	22	5	65	5.0	2.5	14.74	(+.087)	500	DO-35	3-21
ZPD22	22	5	55	5.0	0.1	17	(+.100)	500	DO-35	3-53
1N4748A	22	5	23	11.5	5.0	16.7	—	1000	DO-41	3-75

* Tolerance: All zener diodes are also available in ±1%, ±2%, ±10% and ±20% tolerance.

DIODES

ZENER DIODES (BY ASCENDING V_Z)
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol.* $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R µA Max @	V_R V	T.C. %/°C Typ (Max)	P_D mW T_A=25°C	Package No.	Page No.
BZX85C22	22	5	25	10	0.5	15.5	+.080	1000	DO-41	3-20
1N970B	24	5	33	5.2	5.0	18.2	+.088	500	DO-35	3-63
1N4116	24	5	150	0.25	0.01	18.3	—	500	DO-35	3-70
1N5252B	24	5	33	5.2	0.1	18	(+.088)	500	DO-35	3-78
BZX55C24	24	5	80	5.0	2.0	18	+.085	500	DO-35	3-19
BZY88C24	24	5	75	5.0	2.5	16.08	(+.088)	500	DO-35	3-21
ZPD24	24	5	80	5.0	0.1	18	(+.100)	500	DO-35	3-53
1N4749A	24	5	25	10.5	5.0	18.2	—	1000	DO-41	3-75
BZX85C24	24	5	25	10	0.5	17	+.080	1000	DO-41	3-20
1N4117	25	5	150	0.25	0.01	19.0	—	500	DO-35	3-70
1N5253B	25	5	35	5.0	0.1	19	(+.089)	500	DO-35	3-78
1N971B	27	5	41	4.6	5.0	20.6	+.090	500	DO-35	3-63
1N4118	27	5	150	0.25	0.01	20.5	—	500	DO-35	3-70
1N5254B	27	5	41	4.6	0.1	21	(+.090)	500	DO-35	3-78
BZX55C27	27	5	80	5.0	2.0	20	+.085	500	DO-35	3-19
BZY88C27	27	5	85	5.0	2.5	18.09	(+.090)	500	DO-35	3-21
ZPD27	27	5	80	5.0	0.1	20	(+.100)	500	DO-35	3-53
1N4750A	27	5	35	9.5	5.0	20.6	—	1000	DO-41	3-75
BZX85C27	27	5	30	8.0	0.5	19	+.085	1000	DO-41	3-20
1N4119	28	5	200	0.25	0.01	21.3	—	500	DO-35	3-70
1N5255B	28	5	44	4.5	0.1	21	(+.091)	500	DO-35	3-78
1N972B	30	5	49	4.2	5.0	22.8	+.091	500	DO-35	3-63
1N4120	30	5	200	0.25	0.01	22.8	—	500	DO-35	3-70
1N5256B	30	5	49	4.2	0.1	23	(+.091)	500	DO-35	3-78
BZX55C30	30	5	80	5.0	2.0	22	+.085	500	DO-35	3-19
BZY88C30	30	5	95	5.0	2.5	20.1	(+.091)	500	DO-35	3-21
ZPD30	30	5	80	5.0	0.1	22.5	(+.100)	500	DO-35	3-53
1N4751A	30	5	40	8.5	5.0	22.8	—	1000	DO-41	3-75
BZX85C30	30	5	30	8.0	0.5	21	+.085	1000	DO-41	3-20
1N973B	33	5	58	3.8	5.0	25.1	+.092	500	DO-35	3-63
1N4121	33	5	200	0.25	0.01	25.1	—	500	DO-35	3-70
1N5257B	33	5	58	3.8	0.1	25	(+.092)	500	DO-35	3-78
BZX55C33	33	5	80	5.0	2.0	24	+.085	500	DO-35	3-19
BZY88C33	33	5	120	5.0	2.5	21	(+.100)	500	DO-35	3-21
ZPD33	33	5	80	5.0	0.1	25	(+.100)	500	DO-35	3-53
1N4752A	33	5	45	7.5	5.0	25.1	—	1000	DO-41	3-75
BZX85C33	33	5	35	8.0	0.5	23	+.085	1000	DO-41	3-20

* Tolerance: All zener diodes are also available in ±1%, ±2%, ±10% and ±20% tolerances.

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R µA Max @	V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N747AJAN	3.6	5	22	20	3.0	1.0	−.065	400	DO-7	3-61
1N747AJANTX	3.6	5	22	20	3.0	1.0	−.065	400	DO-7	3-61
1N747AJANTXV	3.6	5	22	20	3.0	1.0	−.065	400	DO-7	3-61
1N748AJAN	3.9	5	20	20	2.0	1.0	−.060	400	DO-7	3-61
1N748AJANTX	3.9	5	20	20	2.0	1.0	−.060	400	DO-7	3-61
1N748AJANTXV	3.9	5	20	20	2.0	1.0	−.060	400	DO-7	3-61
1N749AJANTXV	4.3	5	18	20	2.0	1.0	−.055	400	DO-7	3-61
1N749AJANTX	4.3	5	18	20	2.0	1.0	−.055	400	DO-7	3-61
1N749AJANTX	4.3	5	18	20	2.0	1.0	−.055	400	DO-7	3-61
1N750AJAN	4.7	5	16	20	5.0	1.5	−.043	400	DO-7	3-61
1N750AJANTX	4.7	5	16	20	5.0	1.5	−.043	400	DO-7	3-61
1N750AJANTXV	4.7	5	16	20	5.0	1.5	−.043	400	DO-7	3-61
1N751AJAN	5.1	5	14	20	5.0	2.0	±.030	400	DO-7	3-61
1N751AJANTX	5.1	5	14	20	5.0	2.0	±.030	400	DO-7	3-61
1N751AJANTXV	5.1	5	14	20	5.0	2.0	±.030	400	DO-7	3-61
1N752AJAN	5.6	5	8.0	20	5.0	2.5	+.032	400	DO-7	3-61
1N752AJANTX	5.6	5	8.0	20	5.0	2.5	+.032	400	DO-7	3-61
1N752AJANTXV	5.6	5	8.0	20	5.0	2.5	+.032	400	DO-7	3-61
1N753AJAN	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N753AJANTX	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N753AJANTXV	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N753A-1JAN	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N753A-1JANTX	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N753A-1JANTXV	6.2	5	3.0	20	5.0	3.5	+.045	400	DO-35	3-61
1N754AJAN	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N754AJANTX	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N754AJANTXV	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N754A-1JAN	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N754A-1JANTX	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N754A-1JANTXV	6.8	5	3.0	20	2.0	4.0	+.050	400	DO-35	3-61
1N755AJAN	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N755AJANTX	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N755AJANTXV	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N755A-1JAN	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N755A-1JANTX	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N755A-1JANTXV	7.5	5	4.0	20	2.0	5.0	+.058	400	DO-35	3-61
1N756AJAN	8.2	5	5.0	20	1.0	6.0	+.062	400	DO-35	3-61
1N756AJANTX	8.2	5	5.0	20	1.0	6.0	+.062	400	DO-35	3-61

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N756AJANTXV	8.2	5	5.0	20	1.0		6.0	+.062	400	DO-35	3-61
1N756A-1JAN	8.2	5	5.0	20	1.0		6.0	+.062	400	DO-35	3-61
1N756A-1JANTX	8.2	5	5.0	20	1.0		6.0	+.062	400	DO-35	3-61
1N756A-1JANTXV	8.2	5	5.0	20	1.0		6.0	+.062	400	DO-35	3-61
1N757AJAN	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N757AJANTX	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N757AJANTXV	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N757A-1JAN	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N757A-1JANTX	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N757A-1JANTXV	9.1	5	6.0	20	1.0		7.0	+.068	400	DO-35	3-61
1N758AJAN	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N758AJANTX	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N758AJANTXV	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N758A-1JAN	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N758A-1JANTX	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N758A-1JANTXV	10	5	7.0	20	1.0		8.0	+.075	400	DO-35	3-61
1N759AJAN	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N759AJANTX	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N759AJANTXV	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N759A-1JAN	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N759A-1JANTX	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N759A-1JANTXV	12	5	10	20	1.0		9.0	+.080	400	DO-35	3-61
1N962BJAN	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N962BJANTX	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N962BJANTXV	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N962B-1JAN	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N962B-1JANTX	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N962B-1JANTXV	11	5	9.5	11.5	5.0		8.4	+.073	400	DO-35	3-63
1N963BJAN	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N963BJANTX	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N963BJANTXV	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N963B-1JAN	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N963B-1JANTX	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N963B-1JANTXV	12	5	11.5	10.5	5.0		9.1	+.076	400	DO-35	3-63
1N964BJAN	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63
1N964BJANTX	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N964BJANTXV	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63
1N964B-1JAN	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63
1N964B-1JANTX	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63
1N964B-1JANTXV	13	5	13	9.5	5.0		9.9	+.079	400	DO-35	3-63
1N965BJAN	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N965BJANTX	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N965BJANTXV	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N965B-1JAN	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N965B-1JANTX	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N965B-1JANTXV	15	5	16	8.5	5.0		11	+.082	400	DO-35	3-63
1N966BJAN	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N966BJANTX	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N966BJANTXV	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N966B-1JAN	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N966B-1JANTX	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N966B-1JANTXV	16	5	17	7.8	5.0		12	+.083	400	DO-35	3-63
1N967BJAN	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N967BJANTX	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N967BJANTXV	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N967B-1JAN	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N967B-1JANTX	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N967B-1JANTXV	18	5	21	7.0	5.0		14	+.085	400	DO-35	3-63
1N968BJAN	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N968BJANTX	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N968BJANTXV	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N968B-1JAN	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N968B-1JANTX	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N968B-1JANTXV	20	5	25	6.2	5.0		15	+.086	400	DO-35	3-63
1N969BJAN	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N969BJANTX	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N969BJANTXV	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N969B-1JAN	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N969B-1JANTX	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N969B-1JANTXV	22	5	29	5.6	5.0		17	+.087	400	DO-35	3-63
1N970BJAN	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63
1N970BJANTX	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63
1N970BJANTXV	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@	V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N970B-1JAN	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63
1N970B-1JANTX	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63
1N970B-1JANTXV	24	5	33	5.2	5.0		18	+.088	400	DO-35	3-63
1N971BJAN	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N971BJANTX	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N971BJANTXV	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N971B-1JAN	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N971B-1JANTX	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N971B-1JANTXV	27	5	41	4.6	5.0		21	+.090	400	DO-35	3-63
1N972BJAN	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N972BJANTX	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N972BJANTXV	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N972B-1JAN	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N972B-1JANTX	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N972B-1JANTXV	30	5	49	4.2	5.0		23	+.091	400	DO-35	3-63
1N973BJAN	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N973BJANTX	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N973BJANTXV	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N973B-1JAN	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N973B-1JANTX	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N973B-1JANTXV	33	5	58	3.8	5.0		25	+.092	400	DO-35	3-63
1N4099JAN	6.8	5	200	0.25	10		5.2	—	250	DO-7	3-70
1N4099JANTX	6.8	5	200	0.25	10		5.2	—	250	DO-7	3-70
1N4099JANTXV	6.8	5	200	0.25	10		5.2	—	250	DO-7	3-70
1N4100JAN	7.5	5	200	0.25	10		5.7	—	250	DO-7	3-70
1N4100JANTX	7.5	5	200	0.25	10		5.7	—	250	DO-7	3-70
1N4100JANTXV	7.5	5	200	0.25	10		5.7	—	250	DO-7	3-70
1N4101JAN	8.2	5	200	0.25	1.0		6.3	—	250	DO-7	3-70
1N4101JANTX	8.2	5	200	0.25	1.0		6.3	—	250	DO-7	3-70
1N4101JANTXV	8.2	5	200	0.25	1.0		6.3	—	250	DO-7	3-70
1N4102JAN	8.7	5	200	0.25	1.0		6.7	—	250	DO-7	3-70
1N4102JANTX	8.7	5	200	0.25	1.0		6.7	—	250	DO-7	3-70
1N4102JANTXV	8.7	5	200	0.25	1.0		6.7	—	250	DO-7	3-70
1N4103JAN	9.1	5	200	0.25	1.0		7.0	—	250	DO-7	3-70
1N4103JANTX	9.1	5	200	0.25	1.0		7.0	—	250	DO-7	3-70
1N4130JANTXV	9.1	5	200	0.25	1.0		7.0	—	250	DO-7	3-70
1N4104JAN	10	5	200	0.25	1.0		7.6	—	250	DO-7	3-70
1N4104JANTX	10	5	200	0.25	1.0		7.6	—	250	DO-7	3-70

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R µA Max	@	V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N4104JANTXV	10	5	200	0.25	1.0		7.6	—	250	DO-7	3-70
1N4105JAN	11	5	200	0.25	0.05		8.5	—	250	DO-7	3-70
1N4105JANTX	11	5	200	0.25	0.05		8.5	—	250	DO-7	3-70
1N4105JANTXV	11	5	200	0.25	0.05		8.5	—	250	DO-7	3-70
1N4106JAN	12	5	200	0.25	0.05		9.2	—	250	DO-7	3-70
1N4106JANTX	12	5	200	0.25	0.05		9.2	—	250	DO-7	3-70
1N4106JANTXV	12	5	200	0.25	0.05		9.2	—	250	DO-7	3-70
1N4107JAN	13	5	200	0.25	0.05		9.9	—	250	DO-7	3-70
1N4107JANTX	13	5	200	0.25	0.05		9.9	—	250	DO-7	3-70
1N4107JANTXV	13	5	200	0.25	0.05		9.9	—	250	DO-7	3-70
1N4108JAN	14	5	200	0.25	0.05		10.7	—	250	DO-7	3-70
1N4108JANTX	14	5	200	0.25	0.05		10.7	—	250	DO-7	3-70
1N4108JANTXV	14	5	200	0.25	0.05		10.7	—	250	DO-7	3-70
1N4109JAN	15	5	100	0.25	0.05		11.4	—	250	DO-7	3-70
1N4109JANTX	15	5	100	0.25	0.05		11.4	—	250	DO-7	3-70
1N4109JANTXV	15	5	100	0.25	0.05		11.4	—	250	DO-7	3-70
1N4110JAN	16	5	100	0.25	0.05		12.2	—	250	DO-7	3-70
1N4110JANTX	16	5	100	0.25	0.05		12.2	—	250	DO-7	3-70
1N4110JANTXV	16	5	100	0.25	0.05		12.2	—	250	DO-7	3-70
1N4111JAN	17	5	100	0.25	0.05		13.0	—	250	DO-7	3-70
1N4111JANTX	17	5	100	0.25	0.05		13.0	—	250	DO-7	3-70
1N4111JANTXV	17	5	100	0.25	0.05		13.0	—	250	DO-7	3-70
1N4112JAN	18	5	100	0.25	0.05		13.7	—	250	DO-7	3-70
1N4112JANTX	18	5	100	0.25	0.05		13.7	—	250	DO-7	3-70
1N4112JANTXV	18	5	100	0.25	0.05		13.7	—	250	DO-7	3-70
1N4113JAN	19	5	150	0.25	0.05		14.5	—	250	DO-7	3-70
1N4113JANTX	19	5	150	0.25	0.05		14.5	—	250	DO-7	3-70
1N4113JANTXV	19	5	150	0.25	0.05		14.5	—	250	DO-7	3-70
1N4114JAN	20	5	150	0.25	0.01		15.2	—	250	DO-7	3-70
1N4114JANTX	20	5	150	0.25	0.01		15.2	—	250	DO-7	3-70
1N4114JANTXV	20	5	150	0.25	0.01		15.2	—	250	DO-7	3-70
1N4115JAN	22	5	150	0.25	0.01		16.8	—	250	DO-7	3-70
1N4115JANTX	22	5	150	0.25	0.01		16.8	—	250	DO-7	3-70
1N4115JANTXV	22	5	150	0.25	0.01		16.8	—	250	DO-7	3-70
1N4116JAN	24	5	150	0.25	0.01		18.3	—	250	DO-7	3-70
1N4116JANTX	24	5	150	0.25	0.01		18.3	—	250	DO-7	3-70
1N4116JANTXV	24	5	150	0.25	0.01		18.3	—	250	DO-7	3-70
1N4117JAN	25	5	150	0.25	0.01		19.0	—	250	DO-7	3-70

DIODES

MILITARY QUALIFIED ZENER DIODES
GLASS PACKAGE

DEVICE NO.	V_Z V Nom	Tol. $\pm V_Z$ %	Z_Z Ω Max	@I_Z mA	I_R μA Max	@ V_R V	T.C. %/°C Max	P_D mW T_A=25°C	Package No.	Page No.
1N4117JANTX	25	5	150	0.25	0.01	19.0	—	250	DO-7	3-70
1N4117JANTXV	25	5	150	0.25	0.01	19.0	—	250	DO-7	3-70
1N4118JAN	27	5	150	0.25	0.01	20.5	—	250	DO-7	3-70
1N4118JANTX	27	5	150	0.25	0.01	20.5	—	250	DO-7	3-70
1N4118JANTXV	27	5	150	0.25	0.01	20.5	—	250	DO-7	3-70
1N4119JAN	28	5	200	0.25	0.01	21.3	—	250	DO-7	3-70
1N4119JANTX	28	5	200	0.25	0.01	21.3	—	250	DO-7	3-70
1N4119JANTXV	28	5	200	0.25	0.01	21.3	—	250	DO-7	3-70
1N4120JAN	30	5	200	0.25	0.01	22.8	—	250	DO-7	3-70
1N4120JANTX	30	5	200	0.25	0.01	22.8	—	250	DO-7	3-70
1N4120JANTXV	30	5	200	0.25	0.01	22.8	—	250	DO-7	3-70
1N4121JAN	33	5	200	0.25	0.01	25.1	—	250	DO-7	3-70
1N4121JANTX	33	5	200	0.25	0.01	25.1	—	250	DO-7	3-70
1N4121JANTXV	33	5	200	0.25	0.01	25.1	—	250	DO-7	3-70
1N4620JAN	3.3	5	1650	0.25	7.5	1.5	—	250	DO-7	3-70
1N4620JANTX	3.3	5	1650	0.25	7.5	1.5	—	250	DO-7	3-70
1N4620JANTXV	3.3	5	1650	0.25	7.5	1.5	—	250	DO-7	3-70
1N4621JAN	3.6	5	1700	0.25	7.5	2.0	—	250	DO-7	3-70
1N4621JANTX	3.6	5	1700	0.25	7.5	2.0	—	250	DO-7	3-70
1N4621JANTXV	3.6	5	1700	0.25	7.5	2.0	—	250	DO-7	3-70
1N4622JAN	3.9	5	1650	0.25	5.0	2.0	—	250	DO-7	3-70
1N4622JANX	3.9	5	1650	0.25	5.0	2.0	—	250	DO-7	3-70
1N4622JANTXV	3.9	5	1650	0.25	5.0	2.0	—	250	DO-7	3-70
1N4623JAN	4.3	5	1600	0.25	4.0	2.0	—	250	DO-7	3-70
1N4623JANTX	4.3	5	1600	0.25	4.0	2.0	—	250	DO-7	3-70
1N4623JANTXV	4.3	5	1600	0.25	4.0	2.0	—	250	DO-7	3-70
1N4624JAN	4.7	5	1550	0.25	10	3.0	—	250	DO-7	3-70
1N4624JANTX	4.7	5	1550	0.25	10	3.0	—	250	DO-7	3-70
1N4624JANTXV	4.7	5	1550	0.25	10	3.0	—	250	DO-7	3-70
1N4625JAN	5.1	5	1500	0.25	10	3.0	—	250	DO-7	3-70
1N4625JANTX	5.1	5	1500	0.25	10	3.0	—	250	DO-7	3-70
1N4625JANTXV	5.1	5	1500	0.25	10	3.0	—	250	DO-7	3-70
1N4626JAN	5.6	5	1400	0.25	10	4.0	—	250	DO-7	3-70
1N4626JANTX	5.6	5	1400	0.25	10	4.0	—	250	DO-7	3-70
1N4626JANTXV	5.6	5	1400	0.25	10	4.0	—	250	DO-7	3-70
1N4627JAN	6.2	5	1200	0.25	10	5.0	—	250	DO-7	3-70
1N4627JANTX	6.2	5	1200	0.25	10	5.0	—	250	DO-7	3-70
1N4627JANTXV	6.2	5	1200	0.25	10	5.0	—	250	DO-7	3-70

1

DIODES

MATCHED DIODE ASSEMBLIES
PLASTIC AND GLASS PACKAGES

Number of Diodes / Package			2 Moulded Pair (308)	2 Discrete Pair DO-7 or DO-35	4 Moulded Quad (310)	4 Discrete Quad DO-7 or DO-35	4 Moulded Bridge (309)	
V_F Matching (−55°C to +100°C)								
Basic Diode Specification	I_F Range mA	ΔV_F mV	DEVICE NO.	DEVICE NO.	DEVICE NO.	DEVICE NO.	DEVICE NO.	PAGE NO.
1N914	0.01-1.0	3.0	FA2310E	FA2310U	FA4310E	FA4310U	FA3310	3-62
1N3070	0.01-1.0	3.0	FA2320E	FA2320U	FA4320E	FA4320U	FA3320	3-65
1N3595	0.01-1.0	10	FA2330E	FA2330U	FA4330E	FA4330U	FA3330	3-66
—	0.1-10	10	1N4306	—	—	—	—	3-73
—	0.1-10	10	—	—	1N4307	—	—	3-73

MILITARY QUALIFIED DIODE ASSEMBLIES
PLASTIC AND GLASS PACKAGES

DEVICE NO.	BV V Min	I_R nA Max	@	V_R V	V_F V Max	@	I_F mA	C pF Max	t_{rr} ns Max	Package No.	Page* No.
1N4306JAN	75	50		50	1.0		50	2.0	4.0	308	3-73
1N4306JANTX	75	50		50	1.0		50	2.0	4.0	308	3-73
1N4306JANTXV	75	50		50	1.0		50	2.0	4.0	308	3-73
1N4307JAN	75	50		50	1.0		50	2.0	4.0	310	3-73
1N4307JANTX	75	50		50	1.0		50	2.0	4.0	310	3-73
1N4307JANTXV	75	50		50	1.0		50	2.0	4.0	310	3-73

*Data sheet is for standard device

MONOLITHIC DIODE ARRAYS (NUMERIC LISTING)
PLASTIC - CERAMIC - METAL PACKAGES

DEVICE NO.	BV V Min	V_F V Max	@	I_F mA	ΔV_F mV Max	t_{rr} ns Max	Configuration	Package No.	Page No.
FSA1410M	60	1.0		100	15	10	CA8	TO-96	3-34
FSA1411M	60	1.0		100	15	10	CC8	TO-96	3-34
FSA2002M	60	1.0		100	15	10	CC8	TO-85	3-34
FSA2003M	60	1.0		100	15	10	CA8	TO-85	3-34
FSA2500M	60	1.0		100	15	10	M16	TO-85	3-36
FSA2501M	60	1.0		100	15	10	M16	TO-116-2	3-36
FSA2501P	60	1.0		100	15	10	M16	TO-116	3-36
FSA2502M	60	1.0		100	15	10	M16	TO-96	3-36

DIODES

MONOLITHIC DIODE ARRAYS (NUMERIC LISTING)
PLASTIC - CERAMIC - METAL PACKAGES

DEVICE NO.	BV V Min	V_F V Max	@	I_F mA	ΔV_F mV Max	t_{rr} ns Max	Configuration	Package No.	Page No.
FSA2503M	60	1.0		100	15	10	2M8	TO-116-2	3-39
FSA2503P	60	1.0		100	15	10	2M8	TO-116	3-39
FSA2504M	60	1.0		100	15	10	2M8	TO-86	3-39
FSA2509M	60	1.3		500	15	10	2M8	TO-116-2	3-41
FSA2509P	60	1.3		500	15	10	2M8	TO-116	3-41
FSA2510M	60	1.3		500	15	10	M16	TO-116-2	3-41
FSA2510P	60	1.3		500	15	10	M16	TO-116	3-41
FSA2563M	60	1.3		500	15	10	CC8	TO-116-2	3-43
FSA2563P	60	1.3		500	15	10	CC8	TO-116	3-43
FSA2564M	60	1.3		500	15	10	CA8	TO-116-2	3-43
FSA2564P	60	1.3		500	15	10	CA8	TO-116	3-43
FSA2565M	60	1.3		500	15	10	CC13	TO-116-2	3-43
FSA2565P	60	1.3		500	15	10	CC13	TO-116	3-43
FSA2566M	60	1.3		500	15	10	CA13	TO-116-2	3-43
FSA2566P	60	1.3		500	15	10	CA13	TO-116	3-43
FSA2619M	100	1.0		10	15	5	S8	6B	3-46
FSA2619P	100	1.0		10	15	5	S8	9B	3-46
FSA2620M	100	1.0		10	15	5	S7	TO-116-2	3-46
FSA2620P	100	1.0		10	15	5	S7	TO-116	3-46
FSA2621M	100	1.0		10	15	5	S7	TO-86	3-46
FSA2702M	60	1.0		200	3	6	R4	TO-33	3-49
FSA2703M	60	1.0		200	3	6	R4	TO-72	3-49
FSA2704M	60	1.0		200	—	6	R4	TO-33	3-49
FSA2705M	60	1.0		200	—	6	R4	TO-72	3-49
FSA2719M	75	1.0		10	15	6	S8	6B	3-46
FSA2719P	75	1.0		10	15	6	S8	9B	3-46
FSA2720M	75	1.0		10	15	6	S7	TO-116-2	3-46
FSA2720P	75	1.0		10	15	6	S7	TO-116	3-46
FSA2721M	75	1.0		10	15	6	S7	TO-86	3-46
1N5768	60	1.0		100	—	20	CC8	TO-85	3-81
1N5770	60	1.0		100	—	20	CA8	TO-85	3-81
1N5772	60	1.0		100	—	20	M16	TO-85	3-81
1N5774	60	1.0		100	—	20	2M8	TO-86	3-81
1N6100	75	1.0		100	—	5	S7	TO-86	3-83
1N6101	75	1.0		100	—	5	S7	TO-116-2	3-83

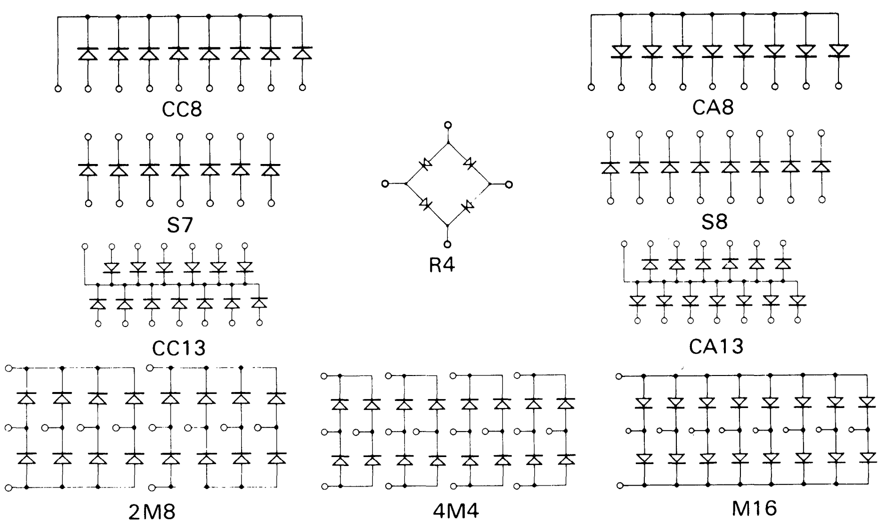
DIODES

MILITARY QUALIFIED DIODE ARRAYS (NUMERIC LISTING)

CERAMIC PACKAGES

DEVICE NO.	BV V Min	V_F V Max	@	I_F mA	t_{fr} ns Max	t_{rr} ns Max	Configuration	Package No.	Page* No.
1N5768JAN	60	1.0		100	40	20	CC8	TO-85	3-81
1N5768JANTX	60	1.0		100	40	20	CC8	TO-85	3-81
1N5768JANTXV	60	1.0		100	40	20	CC8	TO-85	3-81
1N5770JAN	60	1.0		100	40	20	CA8	TO-85	3-81
1N5770JANTX	60	1.0		100	40	20	CA8	TO-85	3-81
1N5770JANTXV	60	1.0		100	40	20	CA8	TO-85	3-81
1N5772JAN	60	1.0		100	40	20	M16	TO-85	3-81
1N5772JANTX	60	1.0		100	40	20	M16	TO-85	3-81
1N5772JANTXV	60	1.0		100	40	20	M16	TO-85	3-81
1N5774JAN	60	1.0		100	40	20	2M8	TO-86	3-81
1N5774JANTX	60	1.0		100	40	20	2M8	TO-86	3-81
1N5774JANTXV	60	1.0		100	40	20	2M8	TO-86	3-81
1N6100JAN	75	1.0		100	15	5.0	S7	TO-86	3-83
1N6100JANTX	75	1.0		100	15	5.0	S7	TO-86	3-83
1N6100JANTXV	75	1.0		100	15	5.0	S7	TO-86	3-83
1N6101JAN	75	1.0		100	15	5.0	S7	TO-116-2	3-83
1N6101JANTX	75	1.0		100	15	5.0	S7	TO-116-2	3-83
1N6101JANTXV	75	1.0		100	15	5.0	S7	TO-116-2	3-83

CONFIGURATIONS



RECTIFIERS

GENERAL PURPOSE RECTIFIERS
GLASS PACKAGE

DEVICE NO.	V_R V Min	@	I_R μA	V_F V Max	@	I_F A	V_{FM} V Max	@	I_O A	Package No.	Page No.
1N4001	50		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4002	100		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4003	200		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4004	400		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4005	600		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4006	800		10	1.1		1.0	1.6		1.0	DO-41	3-68
1N4007	1000		10	1.1		1.0	1.6		1.0	DO-41	3-68

FAST RECOVERY RECTIFIERS
GLASS PACKAGE

DEVICE NO.	V_R V Min	@	I_R μA Max	V_F V Max	@	I_F A	t_{rr} ns Max	Package No.	Page No.
1N4933	50		5.0	1.2		1.0	200	DO-41	3-77
1N4934	100		5.0	1.2		1.0	200	DO-41	3-77
1N4935	200		5.0	1.2		1.0	200	DO-41	3-77
1N4936	400		5.0	1.2		1.0	200	DO-41	3-77
1N4937	600		5.0	1.2		1.0	200	DO-41	3-77

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
AAY11	BA219
AAY48	BA130
AAY49	BA129
AAZ10	BA130
AAZ13	BA130
AAZ15	BA219
AAZ17	BA219
AAZ18	BA130
AA112	FDH999
AA113	BA128
AA114	BA130
AA116	BA130
AA117	BA219
AA118	BA219
AA129	BA130
AA131	FDH900
AA132	BA219
AA133	BA129
AA135	BA129
AA136	BA129
AA137	BA130
AA138	BA130
AA139	BA129
AA144	BA219
BAV17	BAV17
BAV18	BAV18
BAV19	BAV19
BAV20	BAV20
BAV21	BAV21
BAV24	BAY74
BAV50	FSA2510M
BAV68	BAY72
BAV69	FDH400
BAW10	BAY74
BAW11	BAY72
BAW12	FDH444
BAW13	FDH400
BAW16	FDH300
BAW17	FDH300
BAW18	FDH300
BAW24	BAY74
BAW25	FDH600
BAW26	FDH600
BAW33	BAY72
BAW43	BAY73
BAW45	BAY71
BAW46	BAY72
BAW47	BAY72
BAW48	BAY71
BAW49	BAY73
BAW50	FDH400
BAW51	BAY72
BAW52	FDH400
BAW53	BAY74
BAW54	BAY74

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
BAW55	BAY72
BAW62	1N4448
BAW75	BAW75
BAW76	BAW76
BAW77	BAY72
BAX12	BAY74
BAX13	BAX13
BAX15	FDH400
BAX16	BAX16
BAX17	FDH400
BAX20	FDH444
BAX21	FDH444
BAX33	FA2310E
BAX34	FA2310E
BAX35	FA2310E
BAX36	FA2320E
BAX37	FA2320E
BAX38	FA2320E
BAX39	FA4310E
BAX40	FA4310E
BAX41	FA4310E
BAX42	FA4320E
BAX43	FA4320E
BAX44	FA4320E
BAX83	BAY72
BAX84	BAY71
BAX85	BAY71
BAX86A	BAY71
BAX86B	BAY71
BAX87	BAY71
BAX88	BA129
BAX89B	BAY71
BAX89H	BAY71
BAX90A	BAY71
BAX90B	BAY71
BAX91A	BAY71
BAX91B	BAY71
BAX91C	BAY71
BAX92	BAY71
BAX93	BAY71
BAX94	BAY71
BAY17	BAY72
BAY18	BAY72
BAY19	BAY72
BAY20	FDH400
BAY38	BAY71
BAY41	BAY71
BAY42	BAY71
BAY43	1N4148
BAY60	BAY74
BAY61	BAY74
BAY63	BAY74
BAY68	BAY74
BAY69	BAY74
BAY71	BAY71

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
BAY72	BAY72	BB122	BB122
BAY73	BAY73	BB139	BB139
BAY74	BAY74	BB141A	BB121A
BAY80	BAY80	BB141B	BB121B
BAY82	BAY82	BB142	BB122
BAY93	BAY71	BB204B	BB204B
BAY94	BAY71	BB204G	BB204G
BAY95	BAY71	BB205A	BB121B
BA127	BA128	BB205B	BB121A
BA128	BA128	BB205G	BB122
BA129	BA129	BB209	BB139
BA130	BA130	BYW37	1N4001
BA136	BA128	BYW38	1N4002
BA152	FDH900	BYW39	1N4003
BA154	FDH900	BYW40	1N4004
BA155	BA129	BYW41	1N4005
BA164	BA164	BYX58 - 100	1N4002
BA165	FDH900	BYX58 - 200	1N4003
BA166	BA130	BYX58 - 300	1N4004
BA167	BA130	BYX58 - 400	1N4004
BA192	FDH400	BYX58 - 50	1N4001
BA193	FDH400	BYX92 - 100	1N4934
BA194	FDH400	BYX92 - 200	1N4935
BA197	FDH400	BYX92 - 50	1N4933
BA198	FDH400	BYX93 - 300	1N4936
BA199 - 250	1N4936	BYX93 - 400	1N4936
BA199 - 350	1N4936	BYY31	1N4003
BA199 - 450	1N4937	BYY32	1N4004
BA199 - 550	1N4937	BYY33	1N4005
BA200	BA218	BYY34	1N4005
BA201	BA219	BY201/2	1N4935
BA202	BA219	BY201/3	1N4936
BA209	BA219	BY201/4	1N4936
BA210	BA219	BY201/6	1N4937
BA211	BA219	BY401	1N4001
BA212	BA219	BY402	1N4002
BA213	BA219	BY403	1N4003
BA214	BA219	BY404	1N4004
BA216	BA216	BZV17	BZX55
BA217	BA217	BZV19	BZX55
BA218	BA218	BZX30	BZX55
BA219	BA219	BZX31	BZX55
BA243	BA243	BZX46	BZX55
BA244	BA244	BZX55	BZX55
BA316	FDH900	BZX58	BZX55
BA317	FDH900	BZX59	BZX55
BA318	FDH900	BZX61	BZX85
BB104B	BB204B	BZX69	BZX55
BB104G	BB204G	BZX71	BZX55
BB105A	BB121B	BZX79	BZX55
BB105B	BB121A	BZX83	BZX55
BB105G	BB122	BZX85	BZX85
BB109	BB139	BZX95	BZX55
BB121A	BB121A	BZX96	BZX55
BB121B	BB121B	BZX97	BZX55

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
BZY83	BZX55	FA4330	FA4330
BZY85	BZX55	FA4331	FA4331
BZY88	BZY88	FA4332	FA4332
BZY92	BZX85	FA4333	FA4333
BZY94	BZX55	FA4334	FA4334
DA1701	IN4148	FA4335	FA4335
DA1702	IN4148	FA4360	FA4360
DA1703	IN4148	FA4361	FA4361
DA1704	IN4148	FDH300	FDH300
FA2310	FA2310	FDH333	FDH333
FA2311	FA2311	FDH400	FDH400
FA2312	FA2312	FDH444	FDH444
FA2313	FA2313	FDH600	FDH600
FA2320	FA2320	FDH666	FDH666
FA2321	FA2321	FDH900	FDH900
FA2322	FA2322	FDH999	FDH999
FA2323	FA2323	FDN400	FDH400
FA2324	FA2324	FDN444	FDH444
FA2325	FA2325	FDN600	FDH600
FA2330	FA2330	FDN666	FDH666
FA2331	FA2331	FDN700	FD700
FA2332	FA2332	FDN777	FD777
FA2333	FA2333	FD100	1N4153
FA2334	FA2334	FD300	FDH300
FA2335	FA2335	FD333	FDH333
FA2360	FA2360	FD400	FDH400
FA2361	FA2361	FD444	FDH444
FA3310	FA3310	FD600	FDH600
FA3311	FA3311	FD666	FDH666
FA3312	FA3312	FD700	FD700
FA3313	FA3313	FD777	FD777
FA3320	FA3320	FH1100	FH1100
FA3321	FA3321	FH1200	FH1100
FA3322	FA3322	FJT1100	FJT1100
FA3323	FA3323	FJT1101	FJT1101
FA3324	FA3324	GER4001	1N4001
FA3325	FA3325	GER4002	1N4002
FA3330	FA3330	GER4003	1N4003
FA3331	FA3331	GER4004	1N4004
FA3332	FA3332	GER4005	1N4005
FA3333	FA3333	GER4006	1N4006
FA3334	FA3334	GER4007	1N4007
FA3335	FA3335	MC1103F	FSA2500M
FA3360	FA3360	MC1103L	FSA2501M
FA3361	FA3361	MC1103P	FSA2501
FA4310	FA4310	MC1105F	FSA2002M
FA4311	FA4311	MC1105L	FSA2563M
FA4312	FA4312	MC1105P	FSA2563
FA4313	FA4313	MC1106F	FSA2003M
FA4320	FA4320	MC1106L	FSA2564M
FA4321	FA4321	MC1106P	FSA2564
FA4322	FA4322	MC1107F	FSA2504M
FA4323	FA4323	MC1107L	FSA2503M
FA4324	FA4324	MC1107P	FSA2503
FA4325	FA4325	RF400	RF400

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
RF401	RF401	1N1044	1N4004
RF500	RF500	1N1045	1N4004
TID121	FSA2563M	1N1046	1N4001
TID122	FSA2563M	1N1047	1N4002
TID123	FSA2564M	1N1048	1N4003
TID124	FSA2564M	1N1049	1N4003
TID125	FSA2510M	1N1050	1N4004
TID126	FSA2510M	1N1051	1N4004
TID131	FSA2504M	1N1052	1N4001
TID132	FSA2504M	1N1053	1N4002
TID133	FSA2509M	1N1054	1N4003
TID134	FSA2509M	1N1055	1N4003
TID135N	FSA2510M	1N1056	1N4004
TID136N	FSA2510M	1N1057	1N4004
TID139F	FSA2721M	1N106	1N4004
TID139N	FSA2720M	1N107	FDH999
TID140F	FSA2721M	1N108	1N4448
TID140N	FSA2720M	1N1081	1N4002
TID21A	FSA2002M	1N1082	1N4003
TID22A	FSA2002M	1N1083	1N4004
TID23A	FSA2003M	1N1083A	1N4004
TID24A	FSA2003M	1N1084	1N4004
TID25A	FSA2500M	1N1084A	1N4004
TID26A	FSA2500M	1N1093	FDH999
1N100	1N4447	1N1095	1N4005
1N100A	1N4448	1N1096	1N4005
1N1005	1N4004	1N1100	1N4002
1N1007	1N4004	1N1101	1N4003
1N1008	1N4004	1N1102	1N4004
1N101	1N3070	1N1103	1N4004
1N1013	1N4004	1N1104	1N4005
1N1016	1N4004	1N1105	1N4005
1N102	1N3070	1N111	1N4148
1N1021	1N4004	1N112	1N4148
1N1022	1N4004	1N1126	1N4004
1N1023	1N4004	1N1127	1N4005
1N1024	1N4004	1N1128	1N4005
1N1028	1N4001	1N113	1N4454
1N1029	1N4002	1N114	1N4454
1N103	1N4448	1N115	1N4454
1N1030	1N4003	1N116	1N4454
1N1031	1N4003	1N116A	1N4454
1N1032	1N4004	1N1169	1N4004
1N1033	1N4004	1N1169A	1N4004
1N1034	1N4001	1N117	1N4454
1N1035	1N4002	1N117A	1N4454
1N1036	1N4003	1N1170	1N4148
1N1037	1N4003	1N118	1N4454
1N1038	1N4004	1N118A	1N4448
1N1039	1N4004	1N119	1N4148
1N104	1N4448	1N120	1N4148
1N1040	1N4001	1N1240	1N4001
1N1041	1N4002	1N1241	1N4002
1N1042	1N4003	1N1242	1N4003
1N1043	1N4003	1N1243	1N4004

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N1244	1N4004
1N1244A	1N4004
1N1245	1N4005
1N1246	1N4005
1N1251	1N4001
1N1252	1N4002
1N1253	1N4003
1N1254	1N4004
1N1255	1N4004
1N1255A	1N4004
1N1256	1N4005
1N1257	1N4005
1N126	1N4148
1N126A	1N4148
1N127	1N3070
1N127A	1N3070
1N128	1N4148
1N128A	1N4148
1N132	1N4148
1N133	1N4148
1N135	1N4148
1N137A	1N483
1N137B	1N483
1N138A	1N483
1N138B	1N483
1N139	1N4148
1N140	1N4448
1N1406	1N4005
1N141	1N4148
1N1415	1N4004
1N142	1N4938
1N143	1N4938
1N144	1N4454
1N1440	1N4003
1N1441	1N4004
1N1442	1N4004
1N1445	1N4004
1N145	1N4449
1N1487	1N4002
1N1488	1N4003
1N1489	1N4004
1N1490	1N4004
1N1491	1N4005
1N1492	1N4005
1N1507	1N4730
1N1507A	1N4730A
1N1508	1N4732
1N1508A	1N4732A
1N1509	1N4734
1N1509A	1N4734A
1N151	1N4002
1N1510	1N4736
1N1510A	1N4736A
1N1511	1N4738
1N1511A	1N4738A

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N1512	1N4740
1N1512A	1N4740A
1N1513	1N4742
1N1513A	1N4742A
1N1514	1N4744
1N1514A	1N4744A
1N1515	1N4746
1N1515A	1N4746A
1N1516	1N4748
1N1516A	1N4748A
1N1517	1N4750
1N1517A	1N4750A
1N1518	1N4730
1N1518A	1N4730A
1N1519	1N4732
1N1519A	1N4732A
1N152	1N4003
1N1520	1N4734
1N1520A	1N4734A
1N1521	1N4736
1N1521A	1N4736A
1N1522	1N4738
1N1522A	1N4738A
1N1523	1N4740
1N1523A	1N4740A
1N1524	1N4742
1N1524A	1N4742A
1N1525	1N4744
1N1525A	1N4744A
1N1526	1N4746
1N1526	1N4748
1N1526A	1N4746A
1N1527A	1N4748A
1N1528	1N4750
1N1528A	1N4750A
1N153	1N4004
1N1551	1N4002
1N1552	1N4003
1N1553	1N4004
1N1554	1N4004
1N1555	1N4005
1N1556	1N4002
1N1557	1N4003
1N1558	1N4004
1N1559	1N4004
1N1560	1N4005
1N1561	1N4305
1N1562	1N4305
1N1563	1N4002
1N1564	1N4003
1N1565	1N4004
1N1566	1N4004
1N1567	1N4005
1N1568	1N4005
1N158	1N4004

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N1644	1N4001
1N1645	1N4002
1N1646	1N4003
1N1647	1N4003
1N1648	1N4004
1N1649	1N4004
1N1650	1N4004
1N1651	1N4004
1N1652	1N4005
1N1653	1N4005
1N1692	1N4002
1N1693	1N4003
1N1694	1N4004
1N1695	1N4004
1N1696	1N4005
1N1697	1N4005
1N1701	1N4001
1N1702	1N4002
1N1703	1N4003
1N1704	1N4004
1N1705	1N4004
1N1706	1N4005
1N1707	1N4001
1N1708	1N4002
1N1709	1N4003
1N1710	1N4004
1N1711	1N4004
1N1712	1N4005
1N1744	1N4740
1N175	1N3070
1N1763	1N4004
1N1763A	1N4004
1N1764	1N4005
1N1764A	1N4005
1N1765A	1N4734A
1N1766	1N4735
1N1766A	1N4735A
1N1767	1N4736
1N1767A	1N4736A
1N1768	1N4737
1N1768A	1N4737A
1N1769	1N4738
1N1769A	1N738A
1N1770	1N4739
1N1770A	1N4739A
1N1771	1N4740
1N1771A	1N4740A
1N1772	1N4741
1N1772A	1N4741A
1N1773	1N4742
1N1773A	1N4742A
1N1774	1N4743
1N1774A	1N4743A
1N1775	1N4744
1N1775A	1N4744A

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N1776	1N4745
1N1776A	1N4745A
1N1777	1N4746
1N1777A	1N4746A
1N1778	1N4747
1N1778A	1N4747A
1N1779	1N4748
1N1779A	1N4748A
1N1780	1N4749
1N1780A	1N4749A
1N1781	1N4750
1N1781A	1N4750A
1N1782	1N4751
1N1782A	1N4751A
1N1783	1N4752
1N1783A	1N4752A
1N1875	1N4738
1N1876	1N4740
1N1877	1N4742
1N1878	1N4744
1N1879	1N4746
1N1880	1N4748
1N1881	1N4750
1N1882	1N4752
1N190	FDH999
1N1907	1N4001
1N1908	1N4002
1N1909	1N4003
1N191	1N4148
1N1910	1N4004
1N1911	1N4004
1N1912	1N4005
1N1913	1N4005
1N192	1N4148
1N1927	1N5228A
1N1928	1N5230A
1N1929	1N5232A
1N193	1N4148
1N1930	1N5235A
1N1931	1N5237A
1N1932	1N5240A
1N1933	1N5242A
1N1934	1N5245A
1N1935	1N5248A
1N1936	1N5251A
1N194	1N4148
1N194A	1N4148
1N195	1N4148
1N1954	1N5228A
1N1955	1N5230A
1N1956	1N5232A
1N1957	1N5235A
1N1958	1N5237A
1N1959	1N5240A
1N196	1N4148

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N1960	1N5242A	1N2081	1N4002
1N1961	1N5245A	1N2082	1N4003
1N1962	1N5248A	1N2083	1N4004
1N1963	1N5251A	1N2084	1N4004
1N198	1N4148	1N2085	1N4005
1N198A	1N4148	1N2086	1N4005
1N198B	1N4454	1N2088	1N4001
1N198M	1N4148	1N2089	1N4001
1N1981	1N5228A	1N2090	1N4001
1N1982	1N5230A	1N2091	1N4002
1N1983	1N5232A	1N2092	1N4003
1N1984	1N5235A	1N2093	1N4004
1N1985	1N5237A	1N2094	1N4004
1N1986	1N5240A	1N2095	1N4005
1N1987	1N5242A	1N2096	1N4005
1N1988	1N5245A	1N2103	1N4001
1N1989	1N5248A	1N2104	1N4002
1N1990	1N5251A	1N2105	1N4003
1N2013	1N4001	1N2106	1N4004
1N2014	1N4002	1N2107	1N4004
1N2015	1N4003	1N2108	1N4005
1N2016	1N4003	1N2115	1N4004
1N2017	1N4004	1N2116	1N4004
1N2018	1N4004	1N2146	FDH400
1N2019	1N4004	1N2218	1N4005
1N2020	1N4004	1N2220	1N4005
1N2026	1N4001	1N2228	1N4001
1N2027	1N4003	1N2230	1N4003
1N2028	1N4004	1N2232	1N4004
1N2029	1N4004	1N2234	1N4004
1N2030	1N4005	1N2236	1N4005
1N2031	1N4005	1N2238	1N4005
1N2032	1N4732	1N2266	1N4001
1N2033	1N4734	1N2267	1N4001
1N2034	1N4736	1N2268	1N4005
1N2035	1N4739	1N2269	1N4005
1N2036	1N4740	1N2270	1N4005
1N2037	1N4743	1N2271	1N4005
1N2038	1N4745	1N2373	1N4005
1N2039	1N4747	1N2482	1N4003
1N2040	1N4749	1N2483	1N4004
1N2069	1N4003	1N2484	1N4005
1N2069A	1N4003	1N2485	1N4003
1N2070	1N4004	1N2486	1N4004
1N2070A	1N4004	1N2487	1N4004
1N2071	1N4005	1N2488	1N4005
1N2071A	1N4005	1N2489	1N4005
1N2072	1N4001	1N251	1N4148
1N2073	1N4002	1N251A	1N4148
1N2074	1N4003	1N252	1N4148
1N2075	1N4003	1N252A	1N4148
1N2076	1N4004	1N2609	1N4001
1N2077	1N4004	1N2610	1N4002
1N2078	1N4004	1N2611	1N4003
1N2080	1N4001	1N2612	1N4004

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N2613	1N4004
1N2614	1N4005
1N2615	1N4005
1N2629	1N4305
1N265	1N4148
1N266	1N4148
1N267	1N4148
1N268	1N4148
1N270	FDH444
1N273	1N4448
1N276	1N4454
1N277	1N3070
1N277M	1N4448
1N278	1N4446
1N279	1N4448
1N2791	1N4004
1N281	1N4448
1N282	1N4449
1N283	FDH444
1N2858	1N4001
1N2858A	1N4001
1N2859	1N4002
1N2859A	1N4002
1N2860	1N4003
1N2860A	1N4003
1N2861	1N4004
1N2861A	1N4004
1N2862	1N4004
1N2862A	1N4004
1N2863	1N4005
1N2863A	1N4005
1N2864	1N4005
1N2864A	1N4005
1N287	1N4148
1N288	1N4148
1N289	1N4148
1N290	1N3070
1N291	1N3070
1N292	1N4448
1N294	1N4148
1N294A	1N4148
1N295	1N4148
1N295A	1N4148
1N295S	1N4148
1N295X	1N4148
1N296	1N4148
1N297	1N4148
1N297A	1N4148
1N298	1N4148
1N298A	1N4148
1N299	1N4305
1N300	1N482B
1N300A	1N482B
1N300B	1N482B
1N301	1N457

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N301A	1N457
1N301B	1N457
1N3016	1N4736
1N3016A	1N4736A
1N3016B	1N4736B
1N3017	1N4737
1N3017A	1N4737
1N3017B	1N4737A
1N3018	1N4738
1N3018A	1N4738
1N3018B	1N4738A
1N3019	1N4739
1N3019A	1N4739
1N3019B	1N4739A
1N302	1N4003
1N302A	1N4003
1N302B	1N4003
1N3020	1N4740
1N3020A	1N4740
1N3020B	1N4740A
1N3021	1N4741
1N3021A	1N4741
1N3021B	1N4741A
1N3022	1N4742
1N3022A	1N4742
1N3022B	1N4742A
1N3023	1N4743
1N3023A	1N4743
1N3023B	1N4743A
1N3024	1N4744
1N3024A	1N4744
1N3024B	1N4744A
1N3025	1N4745
1N3025A	1N4745
1N3025B	1N4745A
1N3026	1N4746
1N3026A	1N4746
1N3026B	1N4746A
1N3027	1N4747
1N3027A	1N4747
1N3027B	1N4747A
1N3028	1N4748
1N3028A	1N4748
1N3028B	1N4748A
1N3029	1N4749
1N3029A	1N4749
1N3029B	1N4749A
1N303	1N458
1N303A	1N484B
1N303B	1N484B
1N3030	1N4750
1N3030A	1N4750
1N3030B	1N4750A
1N3031	1N4751
1N3031A	1N4751

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3031B	1N4751A
1N3032	1N4752
1N3032A	1N4752
1N3032B	1N4752A
1N304	1N4148
1N305	1N4607
1N306	1N4607
1N3062	1N4305
1N3063	1N4305
1N3064	1N3064
1N3065	1N4305
1N3066	1N4305
1N3067	1N4148
1N3068	1N4148
1N3069	1N4148
1N307	1N4938
1N3070	1N3070
1N3071	1N3070
1N3072	1N4001
1N3073	1N4002
1N3074	1N4003
1N3075	1N4003
1N3076	1N4004
1N3077	1N4004
1N3078	1N4004
1N3079	1N4004
1N3080	1N4005
1N3081	1N4005
1N3082	1N4003
1N3083	1N4004
1N3084	1N4005
1N309	1N4148
1N3097	1N4305
1N310	1N4148
1N3110	1N4305
1N312	1N4448
1N3121	1N4305
1N3122	1N4305
1N3123	1N4305
1N3124	1N4151
1N3125	1N4305
1N313	1N4148
1N314	1N4148
1N3144	1N4305
1N3145	1N4305
1N3146	1N4154
1N3147	1N4448
1N315	1N4004
1N315A	1N4003
1N3159	1N4305
1N316	1N4001
1N316A	1N4001
1N3160	1N4305
1N317	1N4002
1N317A	1N4002

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3179	1N3070
1N318	1N4003
1N318A	1N4003
1N3180	1N3070
1N3181	1N5237A
1N319	1N4004
1N319A	1N4004
1N3190	1N4004
1N3191	1N4005
1N3192	1N4003
1N3193	1N4003
1N3194	1N4004
1N3195	1N4005
1N3196	1N4005
1N3197	1N4148
1N320	1N4005
1N320A	1N4005
1N3203	1N4305
1N3204	1N4305
1N3206	1N4148
1N3215	1N4152
1N3223	1N3070
1N3225	1N4148
1N3227	1N4002
1N3228	1N4003
1N3229	1N4004
1N323	1N4001
1N323A	1N4001
1N3230	1N4005
1N3237	1N4001
1N3238	1N4002
1N3239	1N4003
1N324	1N4002
1N324A	1N4002
1N3240	1N4004
1N3241	1N4005
1N3246	1N4001
1N3247	1N4002
1N3248	1N4003
1N3249	1N4004
1N325	1N4003
1N325A	1N4003
1N3250	1N4005
1N3253	1N4003
1N3254	1N4004
1N3255	1N4005
1N3257	1N4449
1N3258	1N4448
1N326	1N4004
1N326A	1N4004
1N327	1N4005
1N327A	1N4005
1N3277	1N4003
1N3278	1N4004
1N3279	1N4005

1

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3298	FDH400
1N3298A	FDH400
1N330	1N456
1N331	1N458
1N332	1N4004
1N333	1N4004
1N334	1N4004
1N335	1N4004
1N336	1N4003
1N337	1N4003
1N338	1N4002
1N339	1N4002
1N34	1N4454
1N34A	1N4454
1N34AS	1N4148
1N340	1N4002
1N341	1N4004
1N342	1N4004
1N343	1N4004
1N344	1N4004
1N345	1N4003
1N346	1N4003
1N3465	FDH444
1N3466	FDH444
1N3467	1N4446
1N3468	1N4446
1N3469	FDH400
1N347	1N4002
1N3470	FDH400
1N3471	1N4148
1N3473	1N4003
1N3474	1N4004
1N3475	1N4005
1N3478	1N4003
1N3479	1N4004
1N348	1N4002
1N3480	1N4005
1N3483	1N4305
1N3484	1N4305
1N3485	1N3070
1N349	1N4002
1N35	1N4454
1N350	1N457
1N351	1N484B
1N352	1N485B
1N353	1N4004
1N3535	1N3070
1N3536	1N457
1N354	1N4004
1N3544	1N4002
1N3545	1N4003
1N3546	1N4004
1N3547	1N4004
1N3548	1N4005
1N3549	1N4005

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N355	1N4148
1N3550	1N3070
1N3559	FDH444
1N3564	1N4448
1N3567	1N4448
1N3568	1N4449
1N3575	1N483B
1N3575	1N485B
1N3576	1N484B
1N3578	1N4004
1N3579	1N4004
1N359	1N4001
1N359A	1N4001
1N3592	1N4305
1N3593	1N4148
1N3594	FDH600
1N3595	1N3595
1N3596	1N4449
1N3597	1N3070
1N3598	1N4152
1N3599	1N4938
1N36	1N4148
1N360	1N4002
1N360A	1N4002
1N3600	1N3600
1N3601	1N4149
1N3602	1N4151
1N3603	1N4151
1N3604	1N4151
1N3605	1N4152
1N3606	1N4153
1N3607	1N4151
1N3608	1N4152
1N3609	1N4153
1N361	1N4003
1N361A	1N4003
1N362	1N4004
1N362A	1N4004
1N3625	1N3070
1N3629	1N4002
1N363	1N4005
1N363A	1N4005
1N3630	1N4003
1N3631	1N4004
1N3632	1N4004
1N3633	1N4005
1N3634	1N4005
1N3639	1N4003
1N3640	1N4004
1N3641	1N4005
1N3653	FDH400
1N3654	1N4448
1N3656	1N4003
1N3657	1N4004
1N3658	1N4005

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3666	1N4305
1N3668	1N4305
1N3675	1N4736
1N3675A	1N4736
1N3675B	1N4736A
1N3676	1N4737
1N3676A	1N4737
1N3676B	1N4737A
1N3677	1N4738
1N3677A	1N4738
1N3677B	1N4738A
1N3678	1N4739
1N3678A	1N4739
1N3678B	1N4739A
1N3679	1N4740
1N3679A	1N4740
1N3679B	1N4740A
1N368	1N4003
1N368A	1N4003
1N3680	1N4741
1N3680A	1N4741
1N3680B	1N4741A
1N3681	1N4742
1N3681A	1N4742
1N3681B	1N4742A
1N3682	1N4743
1N3682A	1N4743
1N3682B	1N4743A
1N3683	1N4744
1N3683A	1N4744
1N3683B	1N4744A
1N3684	1N4745
1N3684A	1N4745
1N3684B	1N4745A
1N3685	1N4746
1N3685A	1N4746
1N3685B	1N4746A
1N3686	1N4747
1N3686A	1N4747
1N3686B	1N4747A
1N3687	1N4748
1N3687A	1N4748
1N3687B	1N4748A
1N3688	1N4749
1N3688A	1N4749
1N3688B	1N4749A
1N3689	1N4750
1N3689A	1N4750
1N3689B	1N4750A
1N3690	1N4751
1N3690A	1N4751
1N3690B	1N4751A
1N3691	1N4752
1N3691A	1N4752
1N3691B	1N4752A

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3722	1N4148
1N3728	1N4005
1N3729	1N4005
1N373	1N5227A
1N3731	1N4153
1N374	1N5229A
1N3748	1N4003
1N3749	1N4004
1N375	1N5230A
1N3750	1N4005
1N3753	1N4148
1N3754	1N4002
1N3755	1N4003
1N3756	1N4004
1N3757	1N4003
1N3758	1N4004
1N3759	1N4005
1N376	1N5233A
1N3769	1N4305
1N377	1N5236A
1N3773	1N4305
1N3777	1N4148
1N378	1N5238A
1N38	1N4148
1N38A	1N3070
1N38B	1N3070
1N3821	1N4728
1N3821A	1N4728A
1N3822	1N4729
1N3822A	1N4729A
1N3823	1N4730
1N3823A	1N4730A
1N3824	1N4731
1N3824A	1N4731A
1N3825	1N4732
1N3825A	1N4732A
1N3826	1N4733
1N3826A	1N4733A
1N3827	1N4734
1N3827A	1N4734A
1N3828	1N4735
1N3828A	1N4735A
1N3829	1N4736
1N3829A	1N4736A
1N3830	1N4737
1N3830A	1N4737A
1N385	1N4148
1N386	1N4148
1N3864	1N458
1N3865	1N4148
1N3866	1N4003
1N3867	1N4004
1N3868	1N4005
1N387	1N4148
1N3872	FDH444

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N3873	FDH444	1N4161	1N4739
1N388	1N4148	1N4161A	1N4739
1N389	1N4148	1N4161B	1N4739A
1N3894	1N4004	1N4162	1N4740
1N3895	1N4004	1N4162A	1N4740
1N39	1N3070	1N4162B	1N4740A
1N39A	1N3070	1N4163	1N4741
1N39B	1N3070	1N4163A	1N4741
1N390	1N4148	1N4163B	1N4741A
1N391	1N4148	1N4164	1N4742
1N392	1N4148	1N4164A	1N4742
1N393	1N3070	1N4164B	1N4742A
1N394	1N3070	1N4165	1N4743
1N3943	1N4001	1N4165A	1N4743
1N3944	1N4305	1N4165B	1N4743A
1N3952	1N3070	1N4166	1N4744
1N3953	1N4148	1N4166A	1N4744
1N3954	1N4150	1N4166B	1N4744A
1N3956	1N4305	1N4167	1N4745
1N3991	1N4305	1N4167A	1N4745
1N40	1N4148	1N4167B	1N4745A
1N4001	1N4001	1N4168	1N4746
1N4002	1N4002	1N4168A	1N4746
1N4003	1N4003	1N4168B	1N4746A
1N4004	1N4004	1N4169	1N4747
1N4005	1N4005	1N4169A	1N4747
1N4006	1N4006	1N4169B	1N4747A
1N4007	1N4007	1N417	1N4448
1N4008	1N4305	1N4170	1N4748
1N4009	1N4009	1N4170A	1N4748
1N4043	1N4154	1N4170B	1N4748A
1N4086	FDH444	1N4171	1N4749
1N4087	FDH900	1N4171A	1N4749
1N4088	1N4148	1N4171B	1N4749A
1N4089	1N4004	1N4172	1N4750
1N4099-4121	1N4099-4121	1N4172A	1N4750
1N41	1N4454	1N4172B	1N4750A
1N4147	1N914	1N4173	1N4751
1N4148	1N4148	1N4173A	1N4751
1N4149	1N4149	1N4173B	1N4751A
1N4150	1N4150	1N4174	1N4752
1N4151	1N4151	1N4174A	1N4752
1N4152	1N4152	1N4174B	1N4752A
1N4153	1N4153	1N418	1N4148
1N4154	1N4154	1N419	FDH444
1N4155	1N4004	1N42	1N3070
1N4158	1N4736	1N4242	FDH900
1N4158A	1N4736	1N4243	FDH900
1N4158B	1N4736A	1N4244	1N4244
1N4159	1N4737	1N4245	1N4003
1N4159A	1N4737	1N4246	1N4004
1N4159B	1N4737A	1N43	1N4148
1N4160	1N4738	1N4305	1N4305
1N4160A	1N4738	1N4306	1N4306
1N4160B	1N4738A	1N4307	1N4307

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N4308	1N4150
1N4309	FDH400
1N431	1N3070
1N4310	FDH400
1N4311	1N4607
1N4312	FDH444
1N4313	1N4151
1N4314	1N4150
1N4315	FDH400
1N4316	FDH400
1N4317	1N4607
1N4318	FDH444
1N4319	1N4151
1N432	1N4148
1N432A	1N4446
1N432B	1N4448
1N4322	1N4150
1N4323	1N4736
1N4323A	1N4736
1N4323B	1N4736A
1N4324	1N4737
1N4324A	1N4737
1N4324B	1N4737A
1N4325	1N4738
1N4325A	1N4738
1N4325B	1N4738A
1N4326	1N4739
1N4326A	1N4739
1N4326B	1N4739A
1N4327	1N4740
1N4327A	1N4740
1N4327B	1N4740A
1N4328	1N4741
1N4328A	1N4741
1N4328B	1N4741A
1N4329	1N4742
1N4329A	1N4742
1N4329B	1N4742A
1N433	1N3070
1N433A	1N3070
1N433B	1N3070
1N4330	1N4743
1N4330A	1N4743
1N4330B	1N4743A
1N4331	1N4744
1N4331A	1N4744
1N4331B	1N4744A
1N4332	1N4745
1N4332A	1N4745
1N4332B	1N4745A
1N4333	1N4746
1N4333A	1N4746
1N4333B	1N4746A
1N4334	1N4747
1N4334A	1N4747

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N4334B	1N4747A
1N4335	1N4748
1N4335A	1N4748
1N4335B	1N4748A
1N4336	1N4749
1N4336A	1N4749
1N4336B	1N4749A
1N4337	1N4750
1N4337A	1N4750
1N4337B	1N4750A
1N4338	1N4751
1N4338A	1N4751
1N4338B	1N4751A
1N4339	1N4752
1N4339A	1N4752
1N4339B	1N4752A
1N434	1N3070
1N434A	1N3070
1N434B	1N3070
1N435	1N4148
1N4362	1N484B
1N4363	1N3070
1N4373	1N4148
1N4375	1N4153
1N4376	1N4376
1N4389	1N4148
1N4390	FD700
1N4391	FD700
1N4392	FD700
1N44	1N3070
1N440	1N4002
1N440B	1N4002
1N4400	1N4736
1N4401	1N4737
1N4402	1N4738
1N4403	1N4739
1N4404	1N4740
1N4405	1N4741
1N4406	1N4742
1N4407	1N4743
1N4408	1N4744
1N4409	1N4745
1N441	1N4003
1N441B	1N4003
1N4410	1N4746
1N4411	1N4747
1N4412	1N4748
1N4413	1N4749
1N4414	1N4750
1N4415	1N4751
1N4416	1N4752
1N442	1N4004
1N442B	1N4004
1N443	1N4004
1N443B	1N4004

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N444	1N4005
1N444B	1N4005
1N4442	FDH999
1N4443	1N4148
1N4444	1N4148
1N4445	1N4151
1N4446	1N4446
1N4447	1N4447
1N4448	1N4448
1N4449	1N4449
1N445	1N4005
1N445B	1N4005
1N4450	1N4450
1N4451	1N4151
1N4453	1N4448
1N4454	1N4454
1N4455	1N4305
1N4456	1N4150
1N4457	1N4150
1N447	1N4449
1N448	1N4449
1N449	1N4151
1N45	1N4454
1N450	1N4151
1N4502	1N4305
1N451	1N3070
1N452	1N4448
1N4523	1N4305
1N4524	1N4305
1N453	1N3070
1N4531	1N4148
1N4532	FDH600
1N4533	1N4152
1N4534	1N4153
1N4536	1N4154
1N454	FDH444
1N4541	1N4004
1N4542	1N4004
1N4543	1N4005
1N4547	1N4151
1N4548	1N4154
1N456	1N456
1N456A	1N456A
1N457	1N457
1N457A	1N457A
1N457M	1N457
1N458	1N458
1N458A	1N458A
1N458M	1N458
1N459	1N459
1N459A	1N459A
1N459M	1N459
1N46	1N4454
1N460	1N4148
1N460A	1N4148
1N460B	1N4448
1N4608	FDH400
1N461	1N461A
1N461A	1N461A
1N4610	1N4150
1N462	1N462A
1N462A	1N462A
1N4620-4627	1N4620-4627
1N4628	1N4736A
1N4629	1N4737A
1N4628	1N4736A
1N4629	1N4737A
1N463	1N463A
1N463A	1N463A
1N4630	1N4738A
1N4631	1N4739A
1N4632	1N4740A
1N4633	1N4741A
1N4634	1N4742A
1N4635	1N4743A
1N4636	1N4744A
1N4637	1N4745A
1N4638	1N4746A
1N4639	1N4747A
1N464	1N463A
1N464A	1N463A
1N4640	1N4748A
1N4641	1N4749A
1N4642	1N4750A
1N4643	1N4751A
1N4644	1N4752A
1N4649	1N4728A
1N4650	1N4729A
1N4651	1N4730A
1N4652	1N4731A
1N4653	1N4732A
1N4654	1N4733A
1N4655	1N4734A
1N4656	1N4735A
1N4657	1N4736A
1N4658	1N4737A
1N4659	1N4738A
1N4660	1N4739A
1N4661	1N4740A
1N4662	1N4741A
1N4663	1N4742A
1N4664	1N4743A
1N4665	1N4744A
1N4666	1N4745A
1N4667	1N4746A
1N4668	1N4747A
1N4669	1N4748A
1N4670	1N4749A
1N4671	1N4750A
1N4672	1N4751A

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N4673	1N4752A	1N478	1N4148
1N47	1N3070	1N479	1N4148
1N4728	1N4728	1N48	1N4454
1N4728A	1N4728A	1N480	1N4148
1N4729	1N4729	1N482	1N482B
1N4729A	1N4729A	1N482A	1N482B
1N4730	1N4730	1N482B	1N482B
1N4730A	1N4730A	1N482C	1N482B
1N4731	1N4731	1N4823	1N4002
1N4731A	1N4731A	1N4824	1N4003
1N4732	1N4732	1N4825	1N4004
1N4732A	1N4732A	1N4826	1N4005
1N4733	1N4733	1N4827	1N4448
1N4733A	1N4733A	1N4828	FDH444
1N4734	1N4734	1N4829	FDH444
1N4734A	1N4734A	1N483	1N483B
1N4735	1N4735	1N483A	1N483B
1N4735A	1N4735A	1N483B	1N483B
1N4736	1N4736	1N483C	1N483B
1N4736A	1N4736A	1N4830	FDH444
1N4737	1N4737	1N484	1N484B
1N4737A	1N4737A	1N484A	1N484B
1N4738	1N4738	1N484B	1N484B
1N4738A	1N4738A	1N484C	1N484B
1N4739	1N4739	1N485	1N485B
1N4739A	1N4739A	1N485A	1N485B
1N4740	1N4740	1N485B	1N485B
1N4740A	1N4740A	1N485C	1N485B
1N4741	1N4741	1N486	1N486B
1N4741A	1N4741A	1N486A	1N486B
1N4742	1N4742	1N486B	1N486B
1N4742A	1N4742A	1N4861	1N457
1N4743	1N4743	1N4862	1N457
1N4743A	1N4743A	1N4863	1N4148
1N4744	1N4744	1N4864	1N4151
1N4744A	1N4744A	1N487	1N4004
1N4745	1N4745	1N487A	1N4004
1N4745A	1N4745A	1N487B	1N4004
1N4746	1N4746	1N488	1N4004
1N4746A	1N4746A	1N488A	1N4004
1N4747	1N4747	1N488B	1N4004
1N4747A	1N4747A	1N4888	FD777
1N4748	1N4748	1N49	1N4148
1N4748A	1N4748A	1N490	1N4148
1N4749	1N4749	1N4933	1N4933
1N4749A	1N4749A	1N4934	1N4934
1N4750	1N4750	1N4935	1N4935
1N4750A	1N4750A	1N4936	1N4936
1N4751	1N4751	1N4937	1N4937
1N4751A	1N4751A	1N4938	1N3070
1N4752	1N4752	1N4942	1N4935
1N4752A	1N4752A	1N4943	1N4936
1N476	1N4148	1N4944	1N4936
1N4765	1N4734	1N4945	1N4937
1N477	1N4148	1N4946	1N4937

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N4949	FD700	1N5227	1N5227
1N4950	1N4150	1N5227A	1N5227A
1N4951	1N4607	1N5227B	1N5227B
1N4952	1N4607	1N5228	1N5228
1N4953	FD700	1N5228A	1N5228A
1N497	1N4448	1N5228B	1N5228B
1N498	1N4448	1N5229	1N5229
1N499	1N4448	1N5229A	1N5229A
1N50	1N4148	1N5229B	1N5229B
1N500	1N4448	1N5230	1N5230
1N5004	1N4934	1N5230A	1N5230A
1N5005	1N4935	1N5230B	1N5230B
1N5006	1N4936	1N5231	1N5231
1N5007	1N4937	1N5231A	1N5231A
1N501	1N4448	1N5231B	1N5231B
1N502	1N3070	1N5232	1N5232
1N503	1N4001	1N5232A	1N5232A
1N504	1N4002	1N5232B	1N5232B
1N505	1N4003	1N5233	1N5233
1N5055	1N4934	1N5233A	1N5233A
1N5056	1N4935	1N5233B	1N5233B
1N5057	1N4936	1N5234	1N5234
1N5058	1N4936	1N5234A	1N5234A
1N5059	1N4003	1N5234B	1N5234B
1N506	1N4004	1N5235	1N5235
1N5060	1N4004	1N5235A	1N5235A
1N5061	1N4005	1N5235B	1N5235B
1N507	1N4004	1N5236	1N5236
1N508	1N4005	1N5236A	1N5236A
1N51	1N4454	1N5236B	1N5236B
1N511	1N4001	1N5237	1N5237
1N512	1N4002	1N5237A	1N5237A
1N513	1N4003	1N5237B	1N5237B
1N514	1N4004	1N5238	1N5238
1N515	1N4004	1N5238A	1N5238A
1N516	1N4005	1N5238B	1N5238B
1N5194	1N483B	1N5239	1N5239
1N5195	1N485B	1N5239A	1N5239A
1N5196	1N486B	1N5239B	1N5239B
1N52	1N4454	1N5240	1N5240
1N52A	1N4454	1N5240A	1N5240A
1N520B	1N457	1N5240B	1N5240B
1N5209	1N458	1N5241	1N5241
1N5210	1N459	1N5241A	1N5241A
1N5211	1N4003	1N5241B	1N5241B
1N5212	1N4004	1N5242	1N5242
1N5213	1N4005	1N5242A	1N5242A
1N5215	1N4003	1N5242B	1N5242B
1N5216	1N4004	1N5243	1N5243
1N5217	1N4005	1N5243A	1N5243A
1N5219	FDH900	1N5243B	1N5234B
1N5220	FDH900	1N5244	1N5244
1N5226	1N5226	1N5244A	1N5244A
1N5226A	1N5226A	1N5244B	1N5244B
1N5226B	1N5226B	1N5245	1N5245

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N5245A	1N5245A	1N539	1N4004
1N5245B	1N5245B	1N54	1N4148
1N5246	1N5246	1N54A	1N4148
1N5246A	1N5246A	1N540	1N4004
1N5246B	1N5246B	1N541	1N4305
1N5247	1N5247	1N5412	1N4305
1N5247A	1N5247A	1N5413	1N4305
1N5247B	1N5247B	1N5414	1N4305
1N5248	1N5248	1N542	1N4305
1N5248A	1N5248A	1N5427	1N4148
1N5248B	1N5248B	1N5428	1N3070
1N5249	1N5249	1N5429	1N485
1N5249A	1N5249A	1N5430	1N4150
1N5249B	1N5249B	1N5431	FDH400
1N5250	1N5250	1N5432	FD777
1N5250A	1N5250A	1N547	1N4005
1N5250B	1N5250B	1N55	1N3070
1N5251	1N5251	1N55A	1N3070
1N5251A	1N5251A	1N55B	1N3070
1N5251B	1N5251B	1N550	1N4002
1N5252	1N5252	1N551	1N4003
1N5252A	1N5252A	1N552	1N4004
1N5252B	1N5252B	1N553	1N4004
1N5253	1N5253	1N554	1N4005
1N5253A	1N5253A	1N555	1N4005
1N5253B	1N5253B	1N5559	1N4736
1N5254	1N5254	1N5559A	1N4736
1N5254A	1N5254A	1N5559B	1N4736A
1N5254B	1N5254B	1N5560	1N4737
1N5255	1N5255	1N5660A	1N4737
1N5255A	1N5255A	1N5560B	1N4737A
1N5255B	1N5255B	1N5561	1N4738
1N5256	1N5256	1N5561A	1N4738
1N5256A	1N5256A	1N5561B	1N4738A
1N5256B	1N5256B	1N5562	1N4739
1N5257	1N5257	1N5562A	1N4739
1N5257A	1N5257A	1N5562B	1N4739A
1N5257B	1N5257B	1N5563	1N4740
1N527	1N4305	1N5563A	1N4740
1N5282	1N5282	1N5563B	1N4740A
1N530	1N4002	1N5564	1N4741
1N531	1N4003	1N5564A	1N4741
1N5315	1N4153	1N5564B	1N4741A
1N5316	1N4153	1N5565	1N4742
1N5317	1N4150	1N5565A	1N4742
1N5318	1N4150	1N5565B	1N4742A
1N5319	1N4305	1N5566	1N4743
1N532	1N4004	1N5566A	1N4743
1N5320	1N4934	1N5566B	1N4743A
1N533	1N4004	1N5567	1N4744
1N534	1N4005	1N5567A	1N4744
1N535	1N4005	1N5567B	1N4744A
1N536	1N4001	1N5568	1N4745
1N537	1N4002	1N5568A	1N4745
1N538	1N4003	1N5568B	1N4745A

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N5569	1N4746
1N5569A	1N4746
1N5569B	1N4746A
1N5570	1N4747
1N5570A	1N4747
1N5570B	1N4747A
1N5571	1N4748
1N5571A	1N4748
1N5571B	1N4748A
1N5572	1N4749
1N5572A	1N4749
1N5572B	1N4749A
1N5573	1N4750
1N5573A	1N4750
1N5573B	1N4750A
1N5574	1N4751
1N5574A	1N4751
1N5574B	1N4751A
1N5575	1N4752
1N5575A	1N4752
1N5575B	1N4752A
1N56	1N4148
1N56A	1N4148
1N5605	1N457
1N5606	1N458
1N5607	1N3070
1N5608	1N3070
1N5609	1N3070
1N5614	1N4003
1N5615	1N4935
1N5616	1N4004
1N5617	1N4936
1N5618	1N4005
1N5619	1N4937
1N566	1N3070
1N567	1N3070
1N5679	1N4001
1N568	1N4305
1N5680	1N4002
1N569	1N4305
1N57	1N4454
1N57A	1N4454
1N571	FDH444
1N5711	1N4446
1N5712	1N4446
1N5713	1N4446
1N5719	1N484
1N5720	1N4448
1N5721	1N4448
1N5726	FDH400
1N5727	FDH400
1N5748B	1N5748B
1N5767	1N4448
1N5768	1N5768
1N5769	FSA2002M
1N5770	1N5770
1N5771	FSA2003M
1N5772	1N5772
1N5773	FSA2500M
1N5774	1N5774
1N5775	FSA2504M
1N58	1N3070
1N58A	1N3070
1N584	1N4004
1N59	1N4003
1N5913	1N4728
1N5913A	1N4728
1N5913B	1N4728A
1N5914	1N4729
1N5914A	1N4729
1N5914B	1N4729A
1N5915	1N4730
1N5915A	1N4730
1N5915B	1N4730A
1N5916	1N4731
1N5916A	1N4731
1N5916B	1N4731A
1N5917	1N4732
1N5917A	1N4732
1N5917B	1N4732A
1N5918	1N4733
1N5918A	1N4733
1N5918B	1N4733A
1N5919	1N4734
1N5919A	1N4734
1N5919B	1N4734A
1N5920	1N4735
1N5920A	1N4735
1N5920B	1N4735A
1N5921	1N4736
1N5921A	1N4736
1N5921B	1N4736A
1N5922	1N4737
1N5922A	1N4737
1N5922B	1N4737A
1N5923	1N4738
1N5923A	1N4738
1N5923B	1N4738A
1N5924	1N4739
1N5924A	1N4739
1N5924B	1N4739A
1N5925	1N4740
1N5925A	1N4740
1N5925B	1N4740A
1N5926	1N4741
1N5926A	1N4741
1N5926B	1N4741A
1N5927	1N4742
1N5927A	1N4742
1N5927B	1N4742A

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N5928	1N4743	1N5995A	1N5234A
1N5928A	1N4743	1N5995B	1N5234B
1N5928B	1N4743A	1N5996	1N5235
1N5929	1N4744	1N5996A	1N5235A
1N5929A	1N4744	1N5996B	1N5235B
1N5929B	1N4744A	1N5997	1N5236
1N5930	1N4745	1N5997A	1N5236A
1N5930A	1N4745	1N5997B	1N5236B
1N5930B	1N4745A	1N5998	1N5237
1N5931	1N4746	1N5998A	1N5237A
1N5931A	1N4746	1N5998B	1N5237B
1N5931B	1N4746A	1N5999	1N5239
1N5932	1N4747	1N5999A	1N5239A
1N5932A	1N4747	1N5999B	1N5239B
1N5932B	1N4747A	1N60	1N4148
1N5933	1N4748	1N60A	1N4148
1N5933A	1N4748	1N60C	1N4148
1N5933B	1N4748A	1N60S	1N4148
1N5934	1N4749	1N600	1N4002
1N5934A	1N4749	1N600A	1N4002
1N5934B	1N4749A	1N6000	1N5240
1N5935	1N4750	1N6000A	1N5240A
1N5935A	1N4750	1N6000B	1N5240B
1N5935B	1N4750A	1N6001	1N5241
1N5936	1N4751	1N6001A	1N5241A
1N5936A	1N4751	1N6001B	1N5241B
1N5936B	1N4751A	1N6002	1N5242
1N5937	1N4752	1N6002A	1N5242A
1N5937A	1N4752	1N6002B	1N5242B
1N5937B	1N4752A	1N6003	1N5243
1N596	1N4005	1N6003A	1N5243A
1N5988	1N5226	1N6003B	1N5243B
1N5988A	1N5226A	1N6004	1N5245
1N5988B	1N5226B	1N6004A	1N5245A
1N5989	1N5227	1N6004B	1N5245B
1N5989A	1N5227A	1N6005	1N5246
1N5989B	1N5227B	1N6005A	1N5246A
1N599	1N4001	1N6005B	1N5246B
1N599A	1N4001	1N6006	1N5248
1N5990	1N5228	1N6006A	1N5248A
1N5990A	1N5228A	1N6006B	1N5248B
1N5990B	1N5228B	1N6007	1N5250
1N5991	1N5229	1N6007A	1N5250A
1N5991A	1N5229A	1N6007B	1N5250B
1N5991B	1N5229B	1N6008	1N5251
1N5992	1N5230	1N6008A	1N5251A
1N5992A	1N5230A	1N6008B	1N5251B
1N5992B	1N5230B	1N6009	1N5252
1N5993	1N5231	1N6009A	1N5252A
1N5993A	1N5231A	1N6009B	1N5252B
1N5993B	1N5231B	1N601	1N4003
1N5994	1N5232	1N601A	1N4003
1N5994A	1N5232A	1N6010	1N5254
1N5994B	1N5232B	1N6010A	1N5254A
1N5995	1N5234	1N6010B	1N5254B

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N6011	1N5256	1N63	1N4148
1N6011A	1N5256A	1N63A	1N4148
1N6011B	1N5256B	1N631	1N4148
1N6012	1N5257	1N632	1N4148
1N6012A	1N5257A	1N633	1N3070
1N6012B	1N5257B	1N634	1N3070
1N602	1N4003	1N635	1N3070
1N602A	1N4003	1N636	1N4448
1N603	1N4004	1N64	1N4148
1N603A	1N4004	1N64A	1N4148
1N604	1N4004	1N643	1N4003
1N604A	1N4004	1N643A	1N4003
1N605	1N4005	1N643M	1N4003
1N605A	1N4005	1N645	1N4004
1N606	1N4005	1N645A	1N4004
1N606A	1N4005	1N645B	1N4004
1N607	1N4001	1N645J	1N4004
1N607A	1N4001	1N646	1N4004
1N608	1N4002	1N647	1N4005
1N608A	1N4002	1N648	1N4005
1N609	1N4003	1N65	1N4454
1N609A	1N4003	1N658	1N658
1N6099	1N6099	1N658A	1N658
1N61	1N3070	1N659	1N659
1N610	1N4003	1N659A	1N659
1N610A	1N4003	1N66	1N4454
1N6100	1N6100	1N66A	1N4454
1N6101	1N6101	1N660	1N660
1N611	1N4004	1N660A	1N660
1N611A	1N4004	1N661	1N661
1N612	1N4004	1N661A	1N661
1N612A	1N4004	1N664	1N5237A
1N613	1N4005	1N665	1N5242A
1N613A	1N4005	1N666	1N5245B
1N614	1N4005	1N667	1N5248A
1N614A	1N4005	1N668	1N5251A
1N615	1N4004	1N669	1N5254A
1N616	1N4148	1N67	1N4148
1N617	1N4148	1N67A	1N4148
1N618	1N4148	1N673	1N4004
1N619	1N4148	1N676	1N4002
1N62	1N3070	1N677	1N4002
1N622	1N4938	1N678	1N4003
1N625	1N625	1N679	1N4003
1N625A	1N4148	1N68	1N3070
1N625M	1N625	1N68A	1N3070
1N626	1N626	1N681	1N4004
1N626A	1N4148	1N682	1N4004
1N626M	1N626	1N683	1N4004
1N627	1N627	1N684	1N4004
1N627A	1N3070	1N685	1N4005
1N628	1N628	1N686	1N4005
1N628A	1N3070	1N687	1N4005
1N629	1N629	1N689	1N4005
1N629A	1N3070	1N69	1N4454

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT	INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N69A	1N4454	1N725	1N5256A
1N695	1N4148	1N725A	1N5256B
1N695A	1N4148	1N726	1N5257A
1N696	1N4148	1N726A	1N5257B
1N698	1N4305	1N74	1N4148
1N699	1N4448	1N746	1N746
1N70	1N3070	1N746A	1N746A
1N70A	1N4148	1N747	1N747
1N702	1N5223A	1N747A	1N747A
1N702A	1N5223B	1N748	1N748
1N703	1N5227A	1N748A	1N748A
1N703A	1N5227B	1N749	1N749
1N704	1N5229A	1N749A	1N749A
1N704A	1N5229B	1N75	1N3070
1N705	1N5230A	1N750	1N750
1N705A	1N5230B	1N750A	1N750A
1N706	1N5232A	1N751	1N751
1N706A	1N5232B	1N751A	1N751A
1N707	1N5236A	1N752	1N752
1N707A	1N5236B	1N752A	1N752A
1N708	1N5232A	1N753	1N753
1N708A	1N5232B	1N753A	1N753A
1N709	1N5234A	1N754	1N754
1N709A	1N5234B	1N754A	1N754A
1N71	FDH900	1N755	1N755
1N710	1N5235A	1N755A	1N755A
1N710A	1N5235B	1N756	1N756
1N711	1N5236A	1N756A	1N756A
1N711A	1N5236B	1N757	1N757
1N712	1N5237A	1N757A	1N757A
1N712A	1N5237B	1N758	1N758
1N713	1N5239A	1N758A	1N758A
1N713A	1N5239B	1N759	1N759
1N714	1N5240A	1N759A	1N759A
1N714A	1N5240B	1N761	1N5230A
1N715	1N5241A	1N762	1N5232B
1N715A	1N5241B	1N763	1N5238B
1N716	1N5242A	1N764	1N5238A
1N716A	1N5242B	1N765	1N5240A
1N717	1N5243A	1N766	1N5243A
1N717A	1N5243B	1N767	1N5246A
1N718	1N5245A	1N768	1N5249A
1N718A	1N5245B	1N769	1N5252A
1N719	1N5246A	1N770	1N4305
1N719A	1N5246B	1N771	1N4448
1N720	1N5248A	1N771A	FDH444
1N720A	1N5248B	1N771B	1N4002
1N721	1N5250A	1N772	1N4448
1N721A	1N5250B	1N772A	FDH444
1N722	1N5251A	1N773	1N4448
1N722A	1N5251B	1N773A	FHD444
1N723	1N5252A	1N774	1N4448
1N723A	1N5252B	1N774A	FDH444
1N724	1N5254A	1N775	1N4448
1N724A	1N5254B	1N776	1N4448

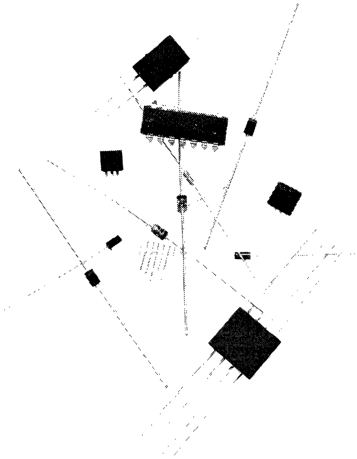
INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N777	1N4448
1N778	1N4148
1N779	1N3070
1N781	1N4305
1N781A	1N4305
1N788	1N4448
1N789	1N4148
1N789M	1N4148
1N790	1N4148
1N790M	1N4148
1N791	1N4448
1N791M	1N4448
1N792	1N4448
1N792M	1N4448
1N793	1N4148
1N793M	1N4148
1N794	1N4148
1N795	1N4448
1N796	1N4448
1N797	1N3070
1N798	1N3070
1N799	1N3070
1N800	1N3070
1N801	1N3070
1N802	1N3070
1N803	1N3070
1N804	1N3070
1N805	1N4148
1N806	1N4148
1N807	1N3070
1N808	1N4448
1N809	1N3070
1N81	1N4148
1N81A	1N4148
1N810	1N4148
1N811	1N4148
1N811M	1N4148
1N812	1N4149
1N812M	1N4149
1N813	1N4148
1N813M	1N4148
1N814	1N4148
1N814M	1N4148
1N815	1N4448
1N815M	1N4448
1N817	1N3070
1N818	1N4148
1N819	1N4002
1N83	1N4003
1N835	1N4305
1N837	FDH444
1N837A	FDH444
1N838	1N3070
1N839	1N3070
1N84	1N4148
1N840	FDH444
1N840M	1N3070
1N841	1N3070
1N842	1N3070
1N843	1N3070
1N844	1N3070
1N845	1N3070
1N846	1N4001
1N847	1N4002
1N848	1N4003
1N849	1N4004
1N850	1N4004
1N851	1N4005
1N852	1N4005
1N857	1N4001
1N858	1N4002
1N859	1N4003
1N86	1N4148
1N860	1N4004
1N861	1N4004
1N862	1N4005
1N863	1N4005
1N868	1N4001
1N869	1N4002
1N87	1N4148
1N87A	1N4148
1N87S	1N4148
1N87T	1N4148
1N870	1N4003
1N871	1N4004
1N872	1N4004
1N873	1N4005
1N874	1N4005
1N879	1N4001
1N88	1N3070
1N880	1N4002
1N881	1N4003
1N882	1N4004
1N883	1N4004
1N884	1N4005
1N885	1N4005
1N89	1N4454
1N890	1N4447
1N891	1N4448
1N892	1N4448
1N893	1N3070
1N897	1N4148
1N898	1N4448
1N899	1N3070
1N90	1N4454
1N900	1N3070
1N901	1N3070
1N902	1N3070
1N903	1N4148
1N903A	1N4154

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N903AM	1N4154
1N903M	1N4154
1N904	1N4154
1N904A	1N4154
1N904AM	1N4154
1N904M	1N4154
1N905	1N4151
1N905A	1N4154
1N905AM	1N4154
1N905M	1N4154
1N906	1N4149
1N906A	1N4447
1N906AM	1N4447
1N906M	1N4447
1N907	1N4149
1N907A	1N4448
1N907AM	1N4447
1N907M	1N4149
1N908	1N4149
1N908A	1N4447
1N908AM	1N4447
1N908M	1N4149
1N909	1N4449
1N91	1N4002
1N910	1N4449
1N911	1N4449
1N914	1N914
1N914A	1N914A
1N914B	1N914B
1N914M	1N914
1N915	1N914B
1N916	1N916
1N916A	1N916A
1N916B	1N916B
1N917	1N914
1N919	1N3070
1N92	1N4003
1N920	FDH400
1N921	FDH400
1N922	FDH400
1N923	FDH400
1N924	1N483
1N925	1N4148
1N926	1N4148
1N927	1N4148
1N928	1N3070
1N929	1N4446
1N93	1N4004
1N930	1N4446
1N931	1N3070
1N932	1N3070
1N933	1N3070
1N934	1N3070
1N94	1N4004
1N947	1N4005

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N948	1N4448
1N949	1N4305
1N95	1N4148
1N957	1N957
1N957A	1N957A
1N957B	1N957B
1N958	1N958
1N958A	1N958A
1N958B	1N958B
1N959	1N959
1N959A	1N959A
1N959B	1N959B
1N96	1N4447
1N96A	1N4148
1N960	1N960
1N960A	1N960A
1N960B	1N960B
1N961	1N961
1N961A	1N961A
1N961B	1N961B
1N962	1N962
1N962A	1N962A
1N962B	1N962B
1N963	1N963
1N963A	1N963A
1N963B	1N963B
1N964	1N964
1N964A	1N964A
1N964B	1N964B
1N965	1N965
1N965A	1N965A
1N965B	1N965B
1N966	1N966
1N966A	1N966A
1N966B	1N966B
1N967	1N967
1N967A	1N967A
1N967B	1N967B
1N968	1N968
1N968A	1N968A
1N968B	1N968B
1N969	1N969
1N969A	1N969A
1N969B	1N969B
1N97	1N4148
1N97A	1N4447
1N970	1N970
1N970A	1N970A
1N970B	1N970B
1N971	1N971
1N971A	1N971A
1N971B	1N971B
1N972	1N972
1N972A	1N972A
1N972B	1N972B

INDUSTRY/FAIRCHILD CROSS REFERENCE

INDUSTRY DEVICE	NEAREST FAIRCHILD EQUIVALENT
1N973	1N973
1N973A	1N973A
1N973B	1N973B
1N98	1N4454
1N98A	1N4448
1N99	1N4148
1N99A	1N4454
1N993	1N4447
1N994	1N4151
1N995	1N4305
1N997	1N4148
1N998	1N484B
1N999	1N914
1S44	1S44
1S920	1S920
1S921	1S921
1S922	1S922
1S923	1S923



Reliability

INTRODUCTION

Device reliability is becoming increasingly important as systems are made bigger and more complex than ever before. Unfortunately, as systems grow, so does the cost of device failures. The failure of a single component can easily cause thousands of times its value in downtime and repair costs. For a company to receive and use even one unreliable lot of components usually results in large financial losses and an undesirable reputation.

The demands for consistently good reliability in high-volume, low-cost products is increasing. Since low cost precludes the use of special screening or preconditioning, this increase must be obtained through design and process improvements and more secure controls.

Fairchild has installed major systems to insure consistently good reliability.

The manufacture of semiconductor devices involves a series of complex processing steps requiring the use of state-of-the-art fabrication techniques and carefully selected controls to insure consistent product reliability. These techniques include diffusion, which requires high temperatures and controlled doping levels; oxidation, which requires the same high temperatures; passivation deposition, which requires precise flow rates and temperatures; metallization, which requires vacuum evaporation and electroplating; and die separation, which requires the careful use of either saw or laser scribing. All of these processes require a system of controls to maintain reproducibility, which is the key to device reliability.

DESIGNED-IN RELIABILITY

Because of the complex processing involved in the manufacture of semiconductors, two basic ingredients are required to consistently generate a reliable product. First, the device must be designed with the latest technology, which enhances reliability, making use of the best available geometric design, state-of-the-art passivation and metallization systems and proven packaging techniques and materials. Then reliability must be *built* into the device with carefully controlled manufacturing practices utilizing the most up-to-date processing techniques and highly trained personnel. Both are essential because neither will assure reliability alone. A properly designed device will be reliable if it is manufactured as designed.

The reliability of some semiconductor devices can sometimes be impaired greatly by only slight variations in processing, materials or techniques. These variations can, for example, be in water or chemical purity, the temperature or humidity in the fabrication or assembly area, the impurity content of piece parts, or variation in an operator's training or frame of mind. It is Fairchild's belief that small processing variations like these should have little influence on the device's reliability. To this end we continue to develop new design innovations where small processing variations will have no effect on the high reliability that was designed-in.

Silicon Nitride

In 1968 silicon nitride was introduced on Fairchild diodes as an additional passivation. Since then, over 650 million device hours of testing have proven it to be more than three times as reliable than thermally grown silicon dioxide. This is because silicon nitride is an almost inpenetrable barrier to the abundant alkali earth elements, especially sodium. The presence of these mobile positive ions in a passivation layer will cause high surface fields which can lead to a device degradation or complete failure.

This improvement in life test performance is attributed to the density of silicon nitride which prevents the migration of mobile ion contaminants under the influence of a reverse bias. A thin layer of the nitride is deposited over a thermally grown silicon dioxide layer, and in turn, is covered by a layer of deposited oxide. The nitride is dense enough to block the migration of such contaminants as lithium, sodium and potassium, which are the major causes of long-term failures, affecting junction leakage, mobility, and breakdown voltage, leading to device degradation.

Thermally grown *silicon dioxide,* which is still the industry standard surface passivation, is highly susceptible to infiltration of these elements. If, however, the oxide is covered with silicon nitride early in the fabrication process, it will be protected through the subsequent operations--even the high temperature DO-35 sealing process.

Channel Stop

In the event that an inversion layer should be formed in the area not protected by nitride, the diffused channel stop prevents any corresponding current flow. Because it is of a higher concentration, its surface will not allow inversion layer formation. This provides for long-term stability of the diode's reverse electrical characteristics.

Deposited Oxide

The deposited oxide layer provides scratch protection during final fabrication and increases the thickness of the dielectric passivation on the surface of the chip. This increase in thickness reduces the electric field strength through the passivation, eliminating dielectric breakdown and arc-over under reverse bias. Other added benefits include a reduction in the driving force for ion migration and a reduction of parasitic capacitance.

Epitaxial Construction

Epitaxial construction allows the device to be manufactured with more uniform reverse breakdown and forward voltage drop characteristics. This results in reproducible electrical characteristics with higher forward current capability and lower power loss. In particular, the breakdown characteristic is improved by utilizing a combination of avalanche and reach-through breakdowns. The junction is diffused far enough into the chip to provide the necessary avalanche breakdown which is dependent on the junction characteristics, while the depletion region is "reaching through the higher resistivity epitaxy to the lower resistivity base" under reverse voltage application. Therefore, if the junction is diffused so that avalanche breakdown takes place just after reach-through is achieved, sharp knees and low leakage near breakdown are observed.

Metallization

Fairchild has chosen a particular combination of metals to provide protection against undesirable intermigration, provide high conductivity, and to provide a dynamic range for temperature cycling.

Metallurgical Bond

Fairchild's Diode Division has developed an improved die in the now widely accepted DO-35 package and has now over four years of successful production experience with the new diode.

The improvements allow the die to dissipate more power, withstand higher pulse amplitudes and to have superior mechanical characteristics when compared to the conventional switching diodes.

Additional benefits of the metallurgically bonded diode are lower failure rates due to open or intermittent circuit that might be caused by lead insertion, or operation over a wide range of environmental temperatures.

The Fairchild Diode Reliability Engineering Department has monitored the reliability of this product on environmental and life test for over four years. It has consistently obtained reliability results that represent more than a five-fold improvement over conventional diodes.

RELIABILITY CONTROL

Although design functions can increase the inherent reliability of semiconductors, there is no doubt that the extent of process variation must be defined and controlled in order to insure that the design functions are effective. In order to achieve this control, and to insure reproducibility in production, Fairchild has instituted a system of controls designed to monitor process variance and reliability.

Visual Inspection

The first and oldest reliability monitor is a series of visual inspections incorporated after critical processing steps. The inspection station is under the joint jurisdiction of the Reliability and Quality Assurance groups, in order to keep close control over visual quality, which is related to reliability. All material intended for shipment to the customer must pass visual inspection gates included in the process flow. The acceptance criteria are defined in standardized reliability specifications so each and every run is inspected in the same way. The standardized inspections keep the process variation in control, thus producing reliable finished devices.

Visual inspections are incorporated throughout the manufacturing process from receiving inspection to wafer and die fabrication, through sealing, and as part of the final Quality Assurance inspection as standard practice. Up to eighteen inspections are performed between receiving inspection and finished device shipment.

Process and Procedure Monitors

The second part of the control program is a set of process and procedure monitors which are direct measures of process and procedure variation. As a procedural control, a process auditor reviews each operation at least once every six months. This is achieved by watching the operation and matching all steps to the current revision of the process specification which is kept on file in the reliability area.

Immediately upon completion of the audit, a summary is distributed to the area supervisor and the responsible process and reliability engineers and department heads. Corrective action and re-audit is then performed, on any variation found.

Process monitors have been instituted at key points in the fabrication flow to give a quantitative basis for process control. These include a visual inspection and measurement of scribe width, depth and orientation immediately after wafer scribe to correlate scribing to break-up quality, thickness and density measurements of deposited passivation layers including nitride and oxide; a cross-check of metal thickness and content; and measurement of C/V at all oxidation furnaces.

Electrical Classification Monitor

The third control is an electrical monitor. A sample of each and every lot of dice is assembled under controlled conditions and is then classified electrically for all D.C. parameters. The results of the electrical classification are compared to established accept/reject criteria.

This electrical inspection is as important as the previously mentioned visual inspection gates. Substandard lots are not allowed to be shipped to customers. Lots that perform better than norm are reviewed and analysed. The results are fed back to Engineering for their product improvement programs.

2

On a periodic basis, the electrical classification accept/reject criteria are upgraded to take into effect product improvements and reliability.

Reliability Assurance Monitor (RAM)

Although proper design and process monitors provide the basis for the manufacture of reliable semiconductor devices, the true measure of performance is in use. At Fairchild, an extensive life test program provides direct feedback to the production line for the purposes of defining the limits of process variance and design change.

The Reliability Assurance Monitor (RAM) was instituted in 1972 as a program designed to life test samples of each and every lot of die intended for shipment to the customer. This program generates reliability information on all diode types, as well as historical information which is useful in evaluating the effects of design changes and process optimization. All tests are performed at an accelerated rate so that the failure rates on test are much higher than those experienced in the field. In addition to being a monitor, the RAM program is used as a stop point for die lots which fail according to established accept/reject criteria.

The following is a summary of life tests currently performed on RAM. Included are the purposes, description, and defect modes disclosed on each test.

High Temperature Reverse Bias (HTRB)

HTRB testing is performed on all devices requiring reverse bias capabilities in use, or those devices on which the passivation quality is of importance. The on-test voltage ranges from 2V to 150V at 150°C. The expected mode of failure is channeling or polarized surface contamination which are recoverable with baking or cleaning.

Alternating Current Operating Life (ACOL)

ACOL testing is performed on all products intended for use in both the forward and reverse modes. This includes switching diodes and consumer devices used in protection circuits. ACOL is the most accurate measure of reliability in the field for these devices since it tests reverse voltage blocking capabilities under power. The forward current ranges from 50mA to 200mA while the reverse voltage ranges from 10V to 150V being switched between these extremes at 60Hz. ACOL failures are similar to those found in the field and include contact failures (leading to high voltage drops) and chip integrity failures (which are formed with heat and reverse bias). These failures are usually not recoverable.

Direct Current Operating Life (DCOL)

DCOL testing is performed on all devices as a check for contact abnormalities or to monitor the chip-package combination power rating. DCOL is intended for devices which will see forward current application and for those alloy-type devices where contact is critical. The failures generated include chip integrity (coefficient of expansion matching) and some surface-generated failures, as in HTRB. Failures may be recoverable, depending on which mode is observed. Zener diodes are operated over the breakdown knee at the specified power rating whereas all other devices are tested in the forward mode. Test currents range from 50mA to 400mA for all non-zener type devices.

Temperature Cycling and Thermal Shock (TcTs)

TcTs are tests performed on all devices and are designed to examine package/chip integrity and to confirm the validity of failures on other tests. Basically these tests are intended to evaluate materials' integrity. Usually the failures result in fractured dice, so recovery is not normally possible.

Zener Operating Life (ZOPL)
On zener operating life, zener devices are operated with constant reverse bias at maximum rated power. This is a test of the power and voltage handling capabilities of the device and is the only life test commonly run on zeners.

Qualification Program
Special Test and Internal Qualification testing is a program designed to test prototype devices under design or process change, or to internally qualify new products. Tests performed depend on the type of device being tested, but most often RAM life testing conditions are used and some military type environmental tests are included. The RAM criteria are used for history matching and control units are placed on test alongside test units as an added check to test validity. Several production runs are included to provide a reasonable cross-section of device characteristics. Once the testing has been satisfactorily completed, the data is reviewed by Reliability and Engineering. Upon approval of the design by both Fairchild and the customer, the production line is then fully converted to incorporate the product or process change.

With this level of device testing and characterization, the incorporation of new processes, designs and products can be fully evaluated prior to marketing. It is essential to fully evaluate changes in this way in order to insure that reliability does not suffer. New limits of process variation can be defined and a history of device behavior can be obtained before line changeover so that any reliability problems are well known before the product is shipped to the customer.

Failure Analyses
Fairchild's Diode Division has a complete analysis laboratory with state-of-the-art equipment and the lab is staffed by fulltime specialists and engineering support technicians. In addition, ready support from the corporate R&D facility is available for in-depth studies using SEM, multiple beam interferometry and Auger analysis.

It is the policy of Fairchild to perform failure analysis of defective product and utilize the findings resulting from these analyses to improve product integrity and reliability.

Reliability Engineering Feedback
The data from all of these monitors, programs and inspections are reduced and plotted on control charts which are posted in the appropriate areas. In this way data can be provided to the Engineering Department as an aid in correcting any process variations, should they occur.

This combination of Reliability examinations provides a continuing check on how critical processes are functioning and on how these functions are being accomplished. It allows not only the operations, but also the operators to be controlled.

RELIABILITY DATA
In this section is presented the data which has been generated as a result of Fairchild's continuing reliability testing programs. This data is a summation of the results of testing performed since 1971. The devices used had no special screening or preconditioning and were selected from the middle of each respective electrical distribution. All test methods of standard diodes were to MIL-STD-750.

For each product family, Operating Life test data and High Temperature Reverse Bias (HTRB) test data has been plotted and extrapolation is tangential from the last data point in each case. This gives the "worst-case" conditions provided no new failure modes or mechanisms are generated within that time period. Given the design of the devices, the results of a small number of 10,000 hour life tests, and the possible failure mechanisms, the probability of the generation of a new failure mode within 100,000 hours is very small. On the 10,000 hour tests conducted (which are too few in number to provide a statistically significant sample) no new failure modes were found and the failure rates were lower at 10,000 hours than would have been predicted from the extrapolated data.

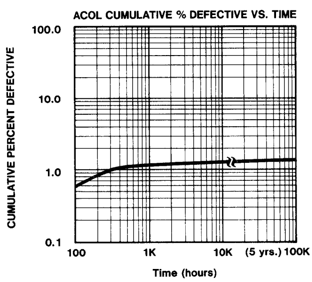
These graphs, when used as described later (see "In-Use Reliability") should provide the information necessary to predict the reliability of the various Fairchild diode products in a system application.

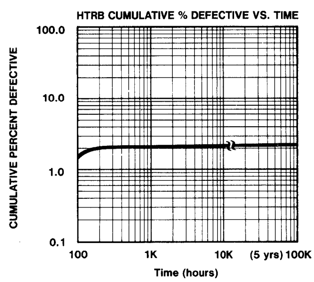
PRODUCT FAMILY - FDH4

The FDH4 family of diodes are general purpose switching diodes in the DO-35 package. This family includes the FDH400, FDH444, 1N3070, 1N658, 1N663 and many others. These diodes couple fast switching speed with high forward conductance and high blocking voltages

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature Cycling Method 1051, Cond C	10 Cycles	0.11%
Thermal Shock Method 1056, Cond. A	10 Cycles	0.0%
Moisture Resistance Method 1021	10 Days	0.0%
Shock 1,500G, T=0.5 ms, Method 2016	5 Blows	0.0%
Vibration Fatigue 20G, Method 2046	96 Hours	0.0%
Vibration Variable Frequency 20G (pk) Method 2056	48 Minutes	0.0%
Constant Acceleration 20,000G (pk) Method 2006	3 Minutes	0.0%
Lead Fatigue, 1 pound three 90° arcs Method 2036, Cond. E	6 Seconds	0.0%
Salt Atmosphere, Method 1041	24 Hours	0.0%
Surge Current, Io = 10 mA If (surge) = 500 mA (pk) 100°C tp = 1/120 s VR = 175 V (pk)	10 Surges	0.0%
Surge Current, IF = 100 mA IF (surge) = 500 mA (pk) tp = 1 s	fs-110 Surges	0.0%
Surge Current IF = 100 mA If (surge) = 2.0 A (pk) tp = 1 μs., Method 4066	10 Surges	0.0%
High Temperature Storage 200°C	1000 Hours	0.1%
AC Operating Life, I0 = 200 mA, VR = 150 V,	0-168 Hours	0.8%
TA = 25°C	168-1000 Hours	0.5%
High Temperature Reverse Bias, TA = 150°C	0-168 Hours	1.9%
VR = 150 V	168-1000 Hours	0.14%

FAILURE DEFINITION:	Breakdown Voltage	Reverse Current	Forward Voltage	Capacitance
	IR = 5 μA	VR = 150 V	IF 200 mA	VR = 0 V
	BV<200 V	IR>200 nA	VF<1.0 V	C>5.0 pF



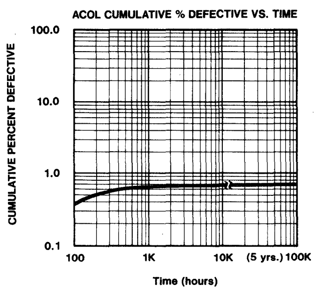


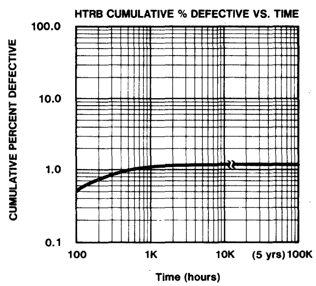
PRODUCT FAMILIES FD5 AND FDH5

The FD5 and FDH5 families are general purpose, low leakage diodes in the DO-7 and DO-35 packages. These families include the 1N3595, 1N486B, 1N459, FDH300 and many others. These diodes couple very low reverse leakage current with high forward conduction and high reverse blocking voltage.

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature Cycling Method 1051, Cond. C	10 Cycles	0.23%
Thermal Shock Method 1056 Cond. A	10 Cycles	0.0%
Moisture Resistance Method 1021	10 Days	0.0%
Shock 1500G t = 0.5 ms, Method 2016	5 Blows	0.0%
Vibration Variable Frequency 20G (pk) Method 2056	48 Minutes	0.0%
Vibration Variable Frequency Monitored 20G (pk) Vr = 100 V, Method 2057	24 Minutes	0.0%
Vibration Fatigue 20G (pk), Method 2046	96 Hours	0.0%
Constant Acceleration 20KG (pk) Method 2006	3 Minutes	0.0%
Lead Fatigue 1 pound three 90°C arcs Method 2036, Cond. E	6 Seconds	0.0%
Salt Atmosphere, Method 1041	24 Hours	0.07%
Surge Current Io = 200 mA IF (surge) = 2.0 A (pk) tp = 1/120 s	10 Surges	0.0%
Surge Current Io = 150 mA IF (surge) = 500 mA (pk) tp = 1 s, Method 4066	10 Surges	0.0%
High Temperature Storage, 200°C	1000 Hours	0.27%
AC Operating Life; I_O = 200 mA VR = 125 V TA = 25°C	0-168 Hours	0.44%
	168-1000 Hours	0.17%
High Temperature Reverse Bias; TA = 150°C VR = 125 V	0-168 Hours	0.66%
	168-1000 Hours	0.36%

FAILURE DEFINITION:	Breakdown Voltage	Reverse Current	Forward Voltage	Capacitance
	IR = 5 μA	VR = 125 V	IF = 200 mA	VR = 0V
	BV<200 V	IR>2.0 nA	VF>1.0 V	C>8.0 pF



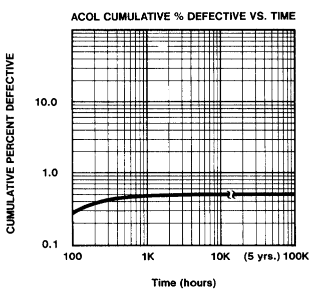


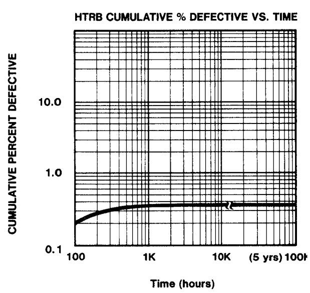
PRODUCT FAMILY FDH-6 METALLURGICAL BONDED

The FDH-6 family of diodes is composed of fast switching diodes in the DO-35 package. This family includes the JAN1N4148-1, JAN1N4454-1, FDH-600, FDH-666 and many others. These diodes couple extremely fast switching speed and high forward conductance with a miniature package which makes them desirable also as general purpose diodes.

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature Cycling Method 1051, Cond. C	10 Cycles	0.10%
Thermal Shock Method 1056, Cond. A	10 Cycles	0.0%
Moisture Resistance Method 1021	10 Days	0.0%
Shock 1,500G 5 blows t = 0.5 mSec, Method 2016		0.0%
Vibration Variable Frequency 30G (pk) Method 2056	48 Minutes	0.0%
Constant Acceleration 20,000G (pk) Method 2006	3 Minutes	0.0%
Lead Fatigue Method 2036, Cond. E	6 Seconds	0.0%
Salt Atmosphere, Method 1041	24 Hours	0.0%
Surge Current IF = 200 mA if (surge) = 500 mA (pk) tp = 1/120 s	10 Surges	0.0%
Surge Current IF = 200 mA if (surge) = 4.0 A (pk) tp = 1 second	10 Surges	0.0%
Surge Current IF = 50 mA if (surge) = 2.0 A (pk) tp = 1μs Method 4066	10 Surges	0.0%
VF pull IF = 200 mA, 10 lbs.	15 Seconds	0.4%
High Temperature Storage 200°C	1000 Hours	0.09%
AC Operating Life IO =200 mA	0-168 Hours	0.38%
VR = 50 V, TA = 25°C	168-1000 Hours	0.11%
High Temperature Reverse Bias	0-168 Hours	0.27%
TA = 150°C, VR = 50 V	168-1000 Hours	0.10%

FAILURE DEFINITION:	**Breakdown Voltage**	**Reverse Current**	**Forward Voltage**	**Capacitance**
	IR = 5 μA	VR = 50 V	IF = 200 mA	VR = 0V
	BV>75 V	IR<200 nA	VF<1.0 V	C>2.0 pF



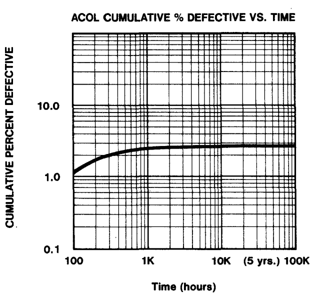


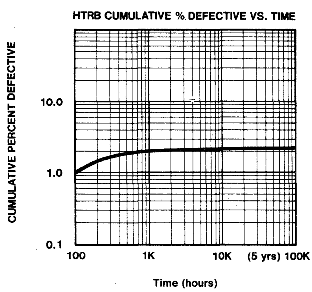
PRODUCT FAMILY FDH-9 AND FDH-11

The FDH-9/11 family are fast switching and general purpose diodes similar to the FDH-6 family except for a slightly lower forward conductance. The FDH-9/11 are assembled in the smaller DO-35 package. This family includes the 1N4148, 1N4153, FDH900 and others. These diodes couple extremely fast switching speed with a selective forward conductance.

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature Cycling Method 1051, Cond. C	10 Cycles	0.3%
Thermal Shock Method 1056, Cond. A	10 Cycles	0.0%
Moisture Resistance Method 1021	10 Days	0.0%
Shock 1,500G, 5 blows t = 0.5 ms, Method 2016		0.0%
Vibration Variable Frequency 20G (pk) Method 2056	48 Minutes	0.0%
Constant Acceleration 20,000G (pk) Method 2006	3 Minutes	0.0%
Lead Fatigue Method 2036, Cond. E	6 Seconds	0.0%
Salt Atmosphere, Method 1041	24 Hours	0.0%
Surge Current IF = 50 mA if (surge) = 500 mA (pk) tp-1/120 s	10 Surges	0.0%
Surge Current IF = 50 mA if (surge) = 500 mA (pk) tp = 1 s	10 Surges	0.0%
Surge Current IF = 50 mA if (surge) = 2.0 A (pk) tp = 1 μs Method 4066	10 Surges	0.0%
VF pull IF = 100 mA, 10 lbs.	15 Seconds	0.2%
High Temperature Storage 200°C	1000 Hours	0.0%
AC Operating Life I_O = 200 mA, VR = 50 V, TA = 25°C	0-168 Hours	1.6%
	168-1000 Hours	0.86%
High Temperature Reverse Bias TA = 150°C, VR = 50 V	0-168 Hours	1.3%
	168-1000 Hours	0.6%

FAILURE DEFINITION:	Breakdown Voltage	Reverse Current	Forward Voltage	Capacitance
	IR = 5 μA	VR = 50 V	IF = 100 mA	VF = 0V
	BV >75 V	IR <200 nA	VF <1.0 V	C >2.0 pF



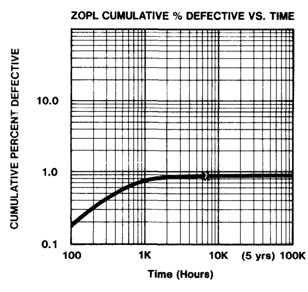


PRODUCT FAMILY DO-35 ZENERS (1/2W) METALLURGICAL BONDED

The Fairchild 500 mW metallurgical bonded zeners include the JAN1N962B-1 through JAN1N973B-1, JAN1N753A-1 through JAN1N759A-1 and others, packaged in the DO-35 glass package. The metallurgical bond provides for improved VF pull characteristics and better performance during thermal stressing.

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature cycling Test Cond. C, Method 1051	25 Cycles	0.04%
Thermal Shock Test Cond. A, Method 1056	5 Cycles	0.00%
Lead Tension Test Cond. A, Method 2036	15 Seconds	0.00%
Hermetic Seal, Cond. G, Method 1071		0.00%
Moisture Resistance, Method 1021	10 Days	0.00%
Shock non-operating, 1500 G, 5 blows, t = .5 ms, Method 2016		0.00%
Thermal Resistance, MIL-S-19500/117E, R ΘJL=100°C/W		0.00%
Vibration Variable Frequency non-operating 30 G pk, Method 2056	48 Minutes	0.00%
Resistance to solvents, MIL-STD-202, Method 215		0.00%
Constant Acceleration non-operating, 20 KG Method 2006	1 Minute	0.00%
Salt Atmosphere Corrosion, Method 1041.1	24 Hours	0.00%
Lead Fatigue Method 2036.3, Cond. E	5 Seconds	0.00%
Surge Current, Ps = 2 W; tp = 1/120 s, - 1/2 square wave pulse	5 Surges	0.00%
High Temperature Storage 175°C	1000 Hours	0.80%
Zener Operating Life, 0-340-1000 Hours	0-168	0.18%
	168-1000	0.61%
Barometric Pressure Reduced, 8 mmHg	60 Seconds	0.00%
Temperature Coefficient of Breakdown Voltage (TCBV) Method 4071		0.10%
Solderability, Method 2026	5 ± 1/2 Seconds	0.00%

FAILURE DEFINITION: Devices are tested to the JEDEC Electrical Limits for that particular device type.



2

IN-USE RELIABILITY

To determine the reliability of a diode in its actual application, the following procedure will give a best estimate based on the data previously presented.

1. Determine what form of life testing is best for the specific application, e.g. ACOL or HTRB.
2. Determine what the average junction temperature (Tj) will be in the application. Do this by adding to the ambient temperature (TA), the increase of the junction temperature (ΔT) due to power being dissipated in the device. This gives you $Tj = TA + \Delta T$. Figure 1 below gives the typical ΔT for any given power input. For HTRB $Tj=TA$.
3. Knowing the junction temperature (Tj), the factor for derated conditions (FD) can be obtained in Figure 2. This represents the typical difference in the failure rate at the maximum rated condition (Tj = 175°C), and the actual use conditions. This curve follows these equations.

   $$\log_{10} FD = \frac{Tj}{50} - 3.5 \text{ for DCOL, ACOL} \quad \log_{10} FD = \frac{Tj}{41.7} - 3.0 \text{ for HTRB}$$

   It is the result of extended studies where it was found that failure rates drop an order of magnitude for every 50°C drop in junction temperature. This follows provided the standard manufacturing methods of removing defective parts have been completed, (i.e. temperature cycle, heat soak, pressure bomb and normal electrical screening.)

   This derating will generally apply to Fairchild diodes, but cannot be guaranteed to apply to other devices.

4. For any given time span, the failure rate at maximum rated conditions can be obtained from the graphs under each specific product family.
5. Now, by multiplying this failure rate with the factor for derated conditions, we obtain a reasonably accurate estimate of the expected failure rate for the actual in-use conditions.

   Example: Supposing the expected number of failures in a given system is required for a 1N4148-1 diode over a 5-year period. The application of the diode is switching, which demands both forward current and reverse blocking capabilities. The environment will be 50°C and the diode will typically dissipate 100 mW of power.

   First, the switching application demands the use of ACOL data. Then, from the power vs. ΔT graph (Figure 1) the 100 mW power level will increase the junction temperature by 35°C. Combining this increase with the ambient temperature of 50°C, the junction temperature is found to be 85°C.

   $$Tj = TA + \Delta T = 50°C + 35°C = 85°C$$

   Then from Figure 2 in Item 3 the factor for derated condition is found. For Tj = 85°C, FD is 0.016.

   Now from the ACOL extrapolated graph under the FDH-6 family in Section IV, the cumulative percent defective for five years is found to be 0.5%.

   Because this percent defective is for maximum rated conditions, it must now be multiplied by Fd to determine the percent defective for in-use conditions.

   Expected failures = 0.5% X .016 = 0.008% over the five year period.

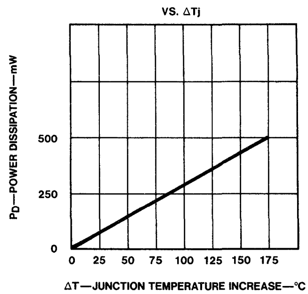


Fig 1.

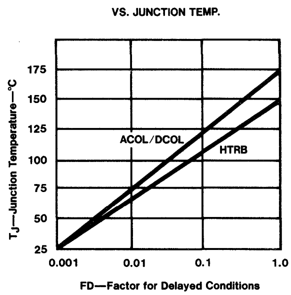
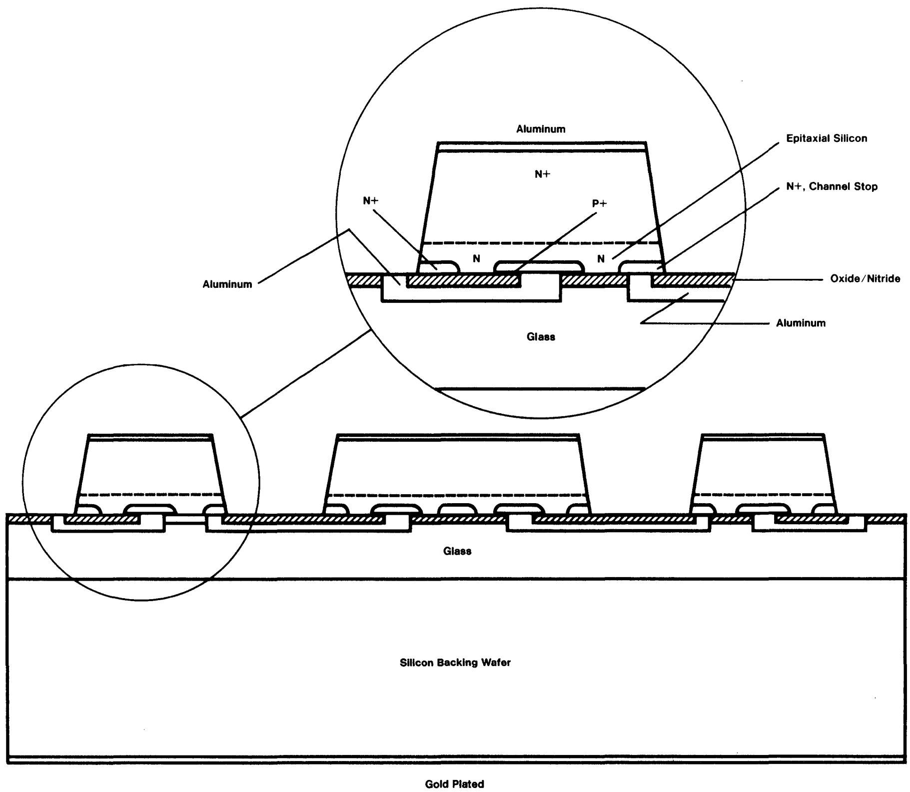


Fig 2.

MONOLITHIC DIODE ARRAY FAMILY

The air-isolated monolithic diode array family consists of a number of diode circuits which have been fabricated in integrated form rather than as discrete diodes. The circuits available include a 16-diode core driver matrix, an 8-diode core driver matrix, a bridge, arrays of common cathode and common annode diodes, groups of individual closely matched diodes and various custom configurations. These circuits are packaged in plastic and ceramic 14-lead and 16-lead dual-in-line packages, 10 and 14-lead ceramic flat packs and a 10-lead TO-5 packages. The bridge circuit is available in 4-lead TO-5 and TO-18 packages.

The diodes in the monolithic array family are by design equivalent to the FDH6 high-speed switching diode. When the fabrication of the diodes in wafer form is complete, the circuit is interconnected with aluminum and the wafer is attached to a second wafer using a special glass as the adhesive medium. Through this construction, the entire active portion of the device is buried in such a manner as to be unreachable by any contaminant once the device is in service.

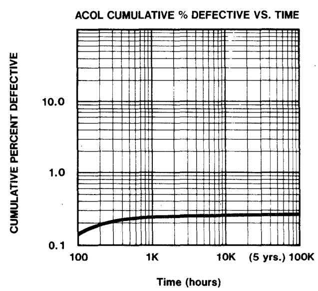


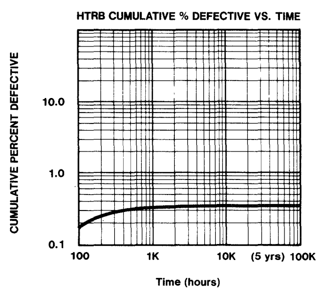
TYPICAL CONSTRUCTION OF A FAIRCHILD MONOLITHIC DIODE ARRAY

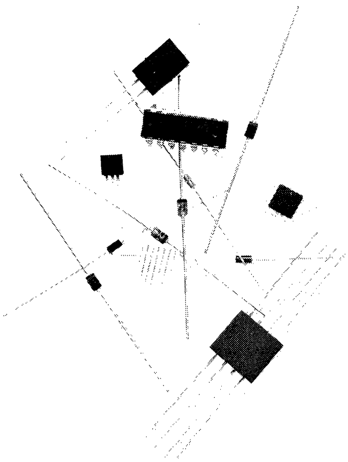
MONOLITHIC DIODE ARRAY

TEST DESCRIPTION	LENGTH OF TEST	OBSERVED FAILURE RATE
Temperature Cycling Method 1051, Cond. C	10 Cycles	0.0%
Thermal Shock Method 1056 Cond. A	10 Cycles	0.0%
Moisture Resistance Method 1021	10 Days	0.0%
Shock 1500G t = 0.5 ms. Method 2016	5 Blows	0.0%
Vibration Variable Frequency 20G (pk) Method 2056	48 Minutes	0.0%
Vibration Fatigue 20 G (pk), Method 2046	96 Hours	0.0%
Constant Acceleration 20 k G (pk) Method 2006	3 Minutes	0.0%
Lead Fatigue 45° arcs, Method 2036, Cond. E	6 Seconds	0.0%
Salt Atmosphere, Method 1041	24 Hours	0.0%
Hermetic Seal, Fine and Gross, Method 1071		0.05%
Surge Current IF = 50 mA IF (surge) = 500 mA (pk) tp = 1/120 s, Method 4066	10 Surges	0.0%
High Temperature Storage, 200°C	1000 Hours	0.0%
AC Operating Life; I_O = 300 mA/package	0-168 Hours	0.18%
VR = 50 V, TA = 25°C	168-1000 Hours	0.06%
High Temperature Reverse Bias; TA= 150°C	0-168 Hours	0.21%
VR = 50 V	168-1000 Hours	0.12%

FAILURE DEFINITION:	Breakdown Voltage	Reverse Current	Forward Voltage
	IR = 10 μA	VR = 40 V	IF = 500 mA
	BV >60 V	IR <200 nA	VF <1.5 V







BAV17 • BAV18 • BAV19 • BAV20 • BAV21

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- V_F . . . 1.0 V (Max) @ 100 mA
- I_R . . . 100 nA @ WIV

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

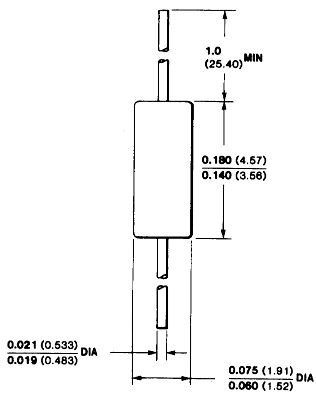
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage		
		BAV 17	20 V
		BAV 18	50 V
		BAV 19	100 V
		BAV 20	150 V
		BAV 21	200 V
I_O	Average Rectified Current		100 mA
I_F	Continuous Forward Current		300 mA
i_f	Peak Repetitive Forward Current		400 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1 μs		4 A
	Pulse Width = 1 s		1 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage				1.00	V	I_F=100 mA
					1.25	V	I_F=200 mA
I_R	Reverse Current	BAV 21			100	nA	V_R=200 V
					15	μA	V_R=200 V, T_A=100°C
		BAV 20			100	nA	V_R=150 V
					15	μA	V_R=150 V, T_A=100°C
		BAV 19			100	nA	V_R=100 V
					15	μA	V_R=100 V, T_A=100°C
		BAV 18			100	nA	V_R=50 V
					15	μA	V_R=50 V, T_A=100°C
		BAV 17			100	nA	V_R=20 V
					15	μA	V_R=20 V, T_A=100°C
BV	Breakdown Voltage	BAV 21	250			V	I_R=100 μA
		BAV 20	200			V	I_R=100 μA
		BAV 19	120			V	I_R=100 μA
		BAV 18	60			V	I_R=100 μA
		BAV 17	25			V	I_R=100 μA
C	Capacitance			1.5	5.0	pF	V_R=0, f=1 MHz
t_{rr}	Reverse Recovery Time (Note 3)				50	ns	I_f=30mA, I_r=30mA, R_L=100Ω
diff	Differential Resistance			5.0		Ω	I_F=10mA

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to I_R=3 mA.
4. For product family characteristic curves, refer to Chapter 4 BAV 17/18 D4, BAV 19/20/21 D1.

BAW75 • BAW76

HIGH SPEED COMPUTER DIODES

SILICON PLANAR EPITAXIAL

- **t_{rr}...4 ns (max)**
- **C...4 pf (max)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

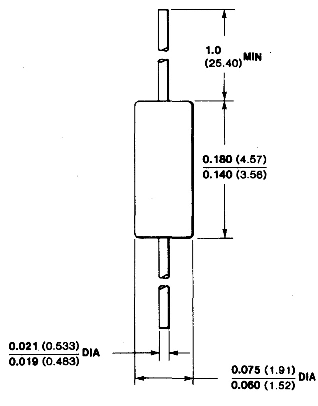
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BAW 75	25V
		BAW 76	50V
I_O	Average Rectified Current		100 mA
I_F	Continuous Forward Current		300 mA
i_f	Peak Repetitive Forward Current		400 mA
i_f (surge)	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BAW 75		BAW 76		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage		1.0			V	I_F = 30 mA
					1.0	V	I_F = 100 mA
I_R	Reverse Current		100			nA	V_R = 25 V
					100	nA	V_R = 50 V
			100			μA	V_R = 25 V, T_A = 150°C
					100	μA	V_R = 50 V, T_A = 150°C
B_V	Breakdown Voltage	35		75		V	I_R = 5.0 μA
C	Capacitance		4.0		2.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time		4.0		4.0	ns	$I_f = I_r$ = 10 mA Recovery to 1 mA
			2.0		2.0	ns	I_f = 10 mA, V_R = 6 V, R_L = 100 Ω

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4.

BAX13

HIGH SPEED SWITCHING DIODE

DIFFUSED SILICON PLANAR

- C...3.0 pF (MAX)
- t_{rr}...4.0 ns (MAX)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Operating Junction Temperature	+175°C
Lead Temperature	+260°C

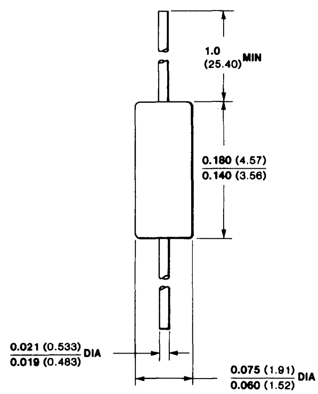
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltages and Currents

V_{RRM}	Repetitive Peak Reverse Voltage	50 V
V_R	Reverse Voltage	50 V
I_O	Average Rectified Current	100 mA
I_F	Forward Current	300 mA
i_f	Recurrent Peak Forward Current	400 mA
I_{FSM}	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless e noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		0.7	V	I_F = 2.0 mA
			0.8	V	I_F = 10 mA, T_A = 100°C
			1.0	V	I_F = 20 mA
			1.53	V	I_F = 75 mA
I_R	Reverse Current		25	nA	V_R = 10 V
			10	μA	V_R = 10 V, T_A = 150°C
			50	nA	V_R = 25 V
			200	nA	V_R = 50 V
			25	μA	V_R = 50 V, T_A = 150°C
C	Capacitance		3.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time		4.0	ns	I_f = 10 mA, V_r = 6.0 V, R_L = 100Ω, I_r = 1.0 mA
Q_S	Recovered Charge		45	pC	I_f = 10 mA, V_r = 5.0 V, R_L = 500Ω

NOTES:
1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For product family characteristic curves, refer to Chapter 4, D4.

BAX16

GENERAL PURPOSE INDUSTRIAL DIODE

DIFFUSED SILICON PLANAR

- **BV... 180 V (MIN) @ 100 μA**
- **I_R... 100 nA (MAX) @ 150 V**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

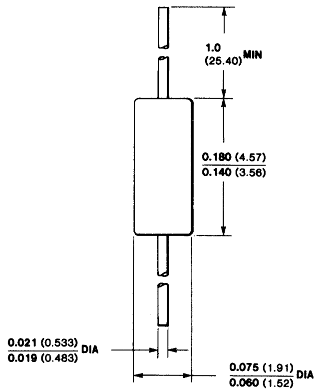
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	150 V
I_O	Average Rectified Current	200 mA
I_F	Continuous Forward Current	500 mA
i_f	Peak Repetitive Forward Current	600 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1 s	1.0 A
	Pulse Width = 1 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		1.5	V	I_F = 200 mA
			1.4	V	I_F = 200 mA, T_A = 175°C
			1.3	V	I_F = 100 mA
			0.85	V	I_F = 10 mA, T_A = 100°C
			0.65	V	I_F = 1 mA
I_R	Reverse Current		100	nA	V_R = 150 V
			100	μA	V_R = 150 V, T_A = 150°C
			25	nA	V_R = 50 V
			25	μA	V_R = 50 V, T_A = 150°C
BV	Breakdown Voltage	180		V	I_R = 100 μA
C	Capacitance		10	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time (Note 3)		120	ns	I_F = 30 mA, I_R = 30 mA, R_L = 100 Ω
Qs	Stored Charge		700	pC	I_F = 10 mA, V_R = 5 V, R_L = 500 Ω

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to I_R = 3 mA.
4. For product family characteristic curves, refer to Chapter 4, D1.

BAY71

FAST SWITCHING DIODE

DIFFUSED SILICON PLANAR

- **t_{rr}. . . 4.0 ns (MAX)**
- **C. . . 2.0 pF (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C

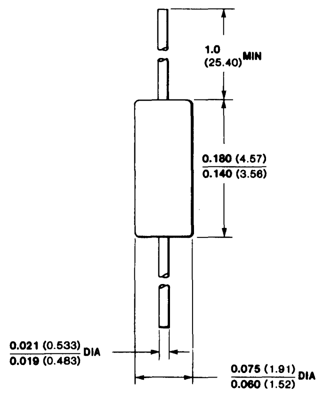
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	35 V
I_O	Average Rectified Current	100 mA
I_F	Forward Current Steady State DC	300 mA
i_f	Recurrent Peak Forward Current	400 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.76	1.00	V	I_F = 20 mA
		0.69	0.88	V	I_F = 10 mA
		0.57	0.69	V	I_F = 1.0 mA
		0.46	0.56	V	I_F = 0.1 mA
I_R	Reverse Current		100	nA	V_R = 35 V
			100	μA	V_R = 35 V, T_A = 125°C
BV	Breakdown Voltage	50		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time (Note 5)		2.0	ns	I_F = 10 mA, I_R = 6.0 mA, R_L = 100 Ω, V_R = 6.0 V
V_{fr}	Forward Recovery Peak Voltage (Note 3)		3.0	V	I_F = 100 mA (pulsed)
t_{fr}	Forward Recovery Time (Note 3)		40	ns	I_F = 100 mA (pulsed)
Q_S	Stored Charge (Note 4)		65	pC	I_F = 20 mA, I_R = 2.0 mA
			50	pC	I_F = 10 mA, I_R = 1.0 mA
RE	Rectification Efficiency (Note 6)	45		%	f = 100 MHz
C	Capacitance		2.0	pF	V_R = 0, f = 1.0 MHz

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits.The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. The oscilloscope used as the response detector shall have a bandwidth of at least 10 MHz (3 dB down), and shall be calibrated using a deposited carbon resistor of 50 Ω in the diode test clips. t_{fr} is defined as the difference between the 10% point of the pulse and the point where V_F is to within 10% of the quiescent value.
4. Measured on the Tektronix "S" unit.
5. Recovery to 1.0 mA.
6. Rectification efficiency is defined as the ratio of dc load voltage to peak rf input voltage to the detector circuit, measured with 2.0 V rms input to the circuit. Load resistance 5.0 kΩ, load capacitance 20 pF.
7. For product family curves, refer to Chapter 4, D4.

BAY72 • BAY80

GENERAL PURPOSE, HIGH CONDUCTANCE DIODES

DIFFUSED SILICON PLANAR

- V_F . . . **1.0 V (MAX) @ 100 mA (BAY72)**
- V_F . . . **1.0 V (MAX) @ 150 mA (BAY80)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

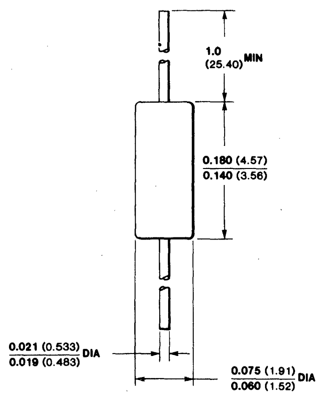
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BAY 72	100 V
		BAY 80	120 V
I_O	Average Rectified Current		200 mA
I_F	Continuous Forward Current		500 mA
i_f	Peak Repetitive Forward Current		600 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BAY 72		BAY 80		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage				1.00	V	I_F = 150 mA
		0.78	1.00			V	I_F = 100 mA
		0.73	0.92			V	I_F = 50 mA
		0.63	0.78			V	I_F = 10 mA
		0.51	0.64			V	I_F = 1.0 mA
I_R	Reverse Current				100	nA	V_R = 120 V
					150	μA	V_R = 120 V, T_A = 100°C
			100			nA	V_R = 100 V
			100			μA	V_R = 100 V, T_A = 125°C
BV	Breakdown Voltage	125		150		V	I_R = 100 μA
C	Capacitance		5.0		6.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Rev. Rec. Time (note 3)		50		60	ns	$I_f = I_r$ = 30 mA, R_L = 75 Ω
	(note 4)		400			ns	I_f = 30 mA, V_R = 35 V
V_{fr}	Fwd. Rec. Voltage (note 5)		2.5			v	R_L = 2.0 KΩ, C_L = 10 pF
V_{fr}	Fwd. Rec. Voltage (note 5)		2.5			V	I_f = 100 mA (pulsed)
t_{fr}	Fwd. Rec. Time (note 5)		50			ns	I_f = 100 mA (pulsed)
Q_S	Stored Change (note 6)		250			pC	I_f = 20 mA, I_r = 1.0 mA
R_E	Rect. Efficiency (note 7)	35				%	f = 100 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 1.0 mA.
4. Recovery to 400 kΩ, Jan 256 Circuit.
5. The oscilloscope used as the response detector shall have a bandwidth of at least 10 MHz (3 dB down), and shall be calibrated using a deposited carbon resistor of 50 Ω in the diode test clips. t_{fr} is defined as the difference between the 10% point of the pulse and the point where V_F is to be within 10% of the quiescent value. Pulse conditions shall be 0.1 μs wide at base, 20 ns maximum rise time, repetition rate = 100 kHz max.
6. Measured on the Tektronix "S" unit.
7. Rectification efficiency is defined as the ratio of dc load voltage to peak rf input to the circuit. Load resistance of 5.0 kΩ, load capacitance 20 pF.
8. For product family characteristic curves, refer to Chapter 4, D1.

BAY73 • BA129

HIGH VOLTAGE, LOW LEAKAGE DIODES

DIFFUSED SILICON PLANAR

- **BV... 125 V (MIN) @ 100 μA (BAY73)**
- **BV... 200 V (MIN) @ 100 μA (BA129)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

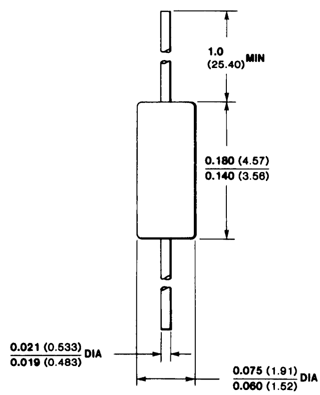
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BAY73	100 V
		BA129	180 V
I_O	Average Rectified Current		200 mA
I_F	Continuous Forward Current		500 mA
i_f	Peak Repetitive Forward Current		600 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BAY73		BA129		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage	0.85	1.00			V	I_F = 200 mA
		0.81	0.94			V	I_F = 100 mA
		0.78	0.88	0.78	1.00	V	I_F =50 mA
		0.69	0.80	0.69	0.83	V	I_F = 10 mA
		0.67	0.75			V	I_F = 5.0 mA
		0.60	0.68	0.60	0.71	V	I_F = 1.0 mA
				0.51	0.60	V	I_F = 0.1 mA
I_R	Reverse Current		500			nA	V_R = 20 V, T_A = 125°C
			5.0			nA	V_R = 100 V
			1.0			μA	V_R = 100 V, T_A = 125°C
					10	nA	V_R = 180 V
					5.0	μA	V_R = 180 V, T_A = 100°C
BV	Breakdown Voltage	125		200		V	I_R = 100 μA
C	Capacitance		8.0		6.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time		3.0			μs	I_f = 10 mA, V_r = 35 V R_L = 1.0 to 100 KΩ C_L = 10 pf, JAN 256

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulses or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D2

BAY74

HIGH CONDUCTANCE ULTRA FAST DIODE

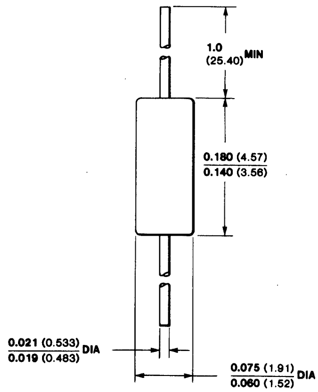
SILICON PLANAR EPITAXIAL

- t_{rr}...4.0 ns (MAX)
- C...3.0 pF (MAX)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures		
Storage Temperature Range		−65° C to +200° C
Maximum Operating Junction Temperature		+175° C
Lead Temperature		+260° C
Power Dissipation (Note 2)		
Maximum Total Dissipation at 25° C Ambient		500 mW
Linear Deviation Factor (from 25° C)		3.33 mW
Maximum Voltage and Currents		
WIV	Working Inverse Voltage	35 V
I_O	Average Rectified Current	100 mA
I_F	Continuous Forward Current	300 mA
i_f	Recurrent Peak Forward Current	400 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.85	1.10	V	I_F = 300 mA
		0.82	1.00	V	I_F = 200 mA
		0.78	0.93	V	I_F = 100 mA
		0.73	0.88	V	I_F = 50 mA
		0.65	0.77	V	I_F = 10 mA
		0.54	0.65	V	I_F = 1.0 mA
I_R	Reverse Current		100	nA	V_R = 35 V
			100	μA	V_R = 35 V, T_A = 125° C
BV	Breakdown Voltage	50		V	I_R = 5.0 μA
C	Capacitance		3.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time (Note 4)		4.0	ns	$I_f = I_r$ = 10 mA to 200 mA
			6.0	ns	$I_f = I_r$ = 200 mA to 400 mA
t_{rr}	Reverse Recovery Time (Note 3)		6.0	ns	I_f = 10 mA, I_r = 1.0 mA

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady-state limits. The factory should be consulted on applications involving pulses or low duty-cycle operations.
3. Recovery to 0.1 mA.
4. Recovery to 10% of I_f.
5. For product family characteristic curves, refer to Chapter 4, D4.

BAY82 • 1N4244 • 1N4376

ULTRA-FAST SWITCHING DIODES

DIFFUSED SILICON PLANAR

- t_{rr}...750 ps (MAX)
- C...0.8 pF (MAX) 1N4244

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

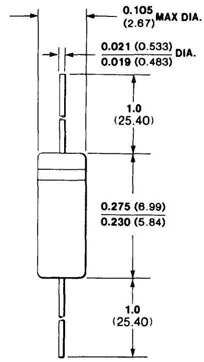
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	250 mW
Linear Power Derating Factor (from 25°C)	1.67 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	10 V (12 V BAY82)
I_O	Average Rectified Current	50 mA
I_F	Continuous Forward Current	150 mA
i_f	Peak Repetitive Forward Current	150 mA
$i_{f(surge)}$	Peak Forward Surge Current Pulse Width = 1 s	250 mA

DO-7 OUTLINE



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BAY82		1N4244		1N4376		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
V_F	Forward Voltage	0.90	1.35			0.89	1.10	V	I_F = 50 mA
		0.80	1.00		1.00	0.81	0.95	V	I_F = 20 mA
		0.77	0.94			0.76	0.88	V	I_F = 10 mA
		0.64	0.79			0.64	0.74	V	I_F = 1.0 mA
		0.53	0.66			0.52	0.61	V	I_F = 0.1 mA
		0.41	0.53			0.42	0.50	V	I_F = 10 μA
I_R	Reverse Current				100		100	nA	V_R = 10 V
					100		100	μA	V_R = 10 V, T_A = 150°C
			100					nA	V_R = 12 V
			50					μA	V_R = 12 V, T_A = 100°C
					250			nA	V_R = 15 V
BV	Breakdown Voltage	15		20		20		V	I_R = 5.0 μA
C	Capacitance		1.3		0.8		1.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time (Note 3)		750		750		750	ps	$I_f = I_r$ = 10 mA, R_L = 100 Ω

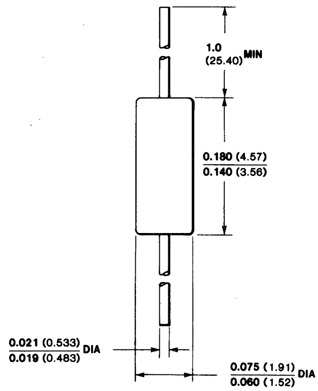
NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to I_r = 1.0 mA.
4. For product family characteristic curves, refer to Chapter 4, D3.

BA128 • BA130

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

- **WIV. . .50 V (BA128), 25 V (BA130)**
- **I_R. . . 100 nA (MAX) @ WIV**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	175°C
Lead Temperature (10 seconds)	260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BA128	50 V
		BA130	25 V
I_O	Average Rectified Current		200 mA
I_F	Continuous Forward Current		500 mA
i_f	Peak Repetitive Forward Current		600 mA
$i_{f\ (surge)}$	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BA128		BA130		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage	0.73	1.00			V	I_F = 50 mA
		0.63	0.79	0.69	1.00	V	I_F = 10 mA
		0.51	0.64	0.56	0.71	V	I_F = 1.0 mA
		0.40	0.52	0.45	0.58	V	I_F = 0.1 mA
				0.34	0.47	V	I_F = 0.01 mA
I_R	Reverse Current		100			nA	V_R = 50 V
					100	nA	V_R = 25 V
			100			μA	V_R = 50 V, T_A = 100°C
					100	μA	V_R = 25 V, T_A = 100°C
BV	Breakdown Voltage	75				V	I_R = 100 μA
				30		V	I_R = 5 μA
C	Capacitance		5.0		2.0	pF	V_R = 0, f = 1.0 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4.

BA180 • BA181

GENERAL PURPOSE DIODES

SILICON PLANAR

- **BV . . . 10 V (MIN) @ 100 μA (BA180)**
- **BV . . . 20 V(MIN) @ 100 μA (BA181)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

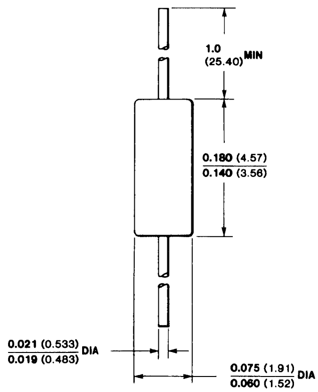
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BA180	10 V
		BA181	20 V
I_O	Average Rectified Current		100 mA
I_F	Continuous Forward Current		300 mA
i_f	Peak Repetitive Forward Current		400 mA
i_f (surge)	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage			1.0	V	I_F = 4 mA
I_R	Reverse Current			1.0	μA	V_R = 5.0 V
BV	Breakdown Voltage	BA180	10		V	I_R = 100 μA
		BA181	20		V	I_R = 100 μA

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4.

BA216 • BA217 • BA218 • BA219

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- **WIV . . . 10 V to 100 V**
- **t_{rr} . . . 4 ns (MAX) BA216–218**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

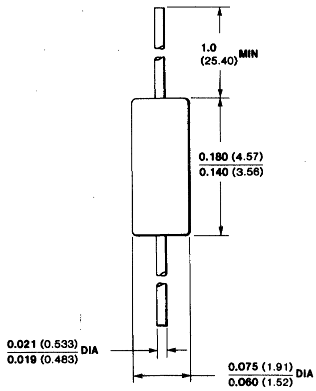
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BA216	10 V	BA217	30 V
I_O	Average Rectified Current	BA218	50 V	BA219	100V
I_F	Continuous Forward Current				100 mA
I_f	Peak Repetitive Forward Current				300 mA
$i_{f(surge)}$	Peak Forward Surge Current				400 mA
	Pulse Width = 1 s				1.0 A
	Pulse Width = 1 μs				4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BA216		BA217 • BA218		BA219		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
V_F	Forward Voltage						1.40		I_F = 100 mA
					1.50				I_F = 50 mA
		0.70	1.00						I_F = 15 mA
					1.00		0.85		I_F = 10 mA
		0.60	0.80						I_F = 3.0 mA
					0.70		0.65		I_F = 1.0 mA
		0.50	0.62						I_F = 0.2 mA
I_R	Reverse Current		1500					nA	V_R = 10 V
	BA217				50			nA	V_R = 10 V
	BA218				50			nA	V_R = 25 V
	BA217				200			nA	V_R = 30 V
	BA218				200			nA	V_R = 50 V
							200	nA	V_R = 50 V
							500	nA	V_R = 100 V
C	Capacitance		3.0		3.0		5.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time		4.0		4.0			ns	I_F = 10 mA, I_R = 60 mA, R_L = 100 Ω (Note 3)
							120	ns	I_F = 30 mA, I_R = 30 mA, R_L = 100 Ω (Note 4)

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to I_R = 1 mA.
4. Recovery to I_R = 3 mA.
5. For product family characteristic curves, refer to Chapter 4, D4

BA243 • BA244

BANDSWITCH DIODES

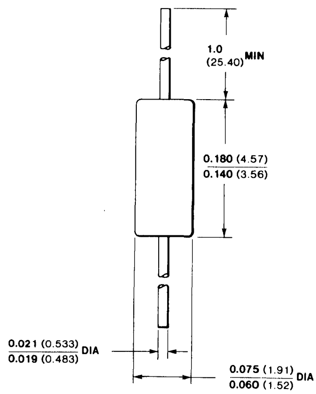
DIFFUSED SILICON PLANAR

- **R_S...0.5 Ω (MAX) BA244**
- **C...2 pF (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures	
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C
Power Dissipation (Note 2)	
Maximum Total Power Dissipation at 25°C Ambient	250 mW
Linear Power Derating Factor (from 25°C)	1.67 mW/°C
Maximum Voltage and Currents	
WIV Working Inverse Voltage	15 V
I_F Continuous Forward Current	100 mA

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		0.90	1.0	V	I_F = 100 mA
I_R	Reverse Current		5.0 0.05	100 1.0	nA μA	V_R = 15 V V_R = 15 V, T_A = 60°C
BV	Breakdown Voltage	20			V	I_R = 5.0 μA
C	Capacitance		1.7	2.0	pF	V_R = 15 V, f = 1 MHz
$\frac{\Delta C}{C.\Delta V_R}$	Capacitance Variation with Reverse Voltage		1.0		%/V	V_R = 7 − 20 V, f = 1 − 100 MHz, Relative to V_R = 7 V
R_S	Series Resistance BA243 BA244		0.70 0.40	1.0 0.50	Ω Ω	If = 10 mA, f = 1−100 MHz If = 10 mA, f = 1−100 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D7.

BB121A • BB121B • BB122

UHF, VHF/FM VARACTOR DIODES

DIFFUSED SILICON PLANAR

- C_3/C_{25} . . . **4.5–6.0**
- **MATCHED SETS** (Note 2)

ABSOLUTE MAXIMUM RATINGS (Note 1)

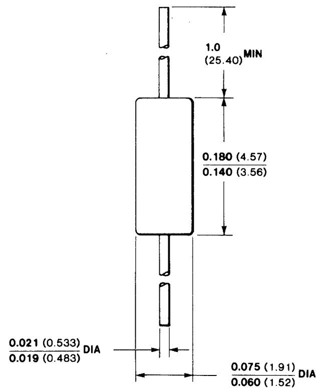
Temperatures

Storage Temperature Range	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Maximum Voltage

WIV	Working Inverse Voltage	30 V

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage		30			V	I_R = 100 μA
I_R	Reverse Current			10	50	nA	V_R = 28 V
C	Capacitance	BB 121A		17		pF	V_R = 1.0 V, f = 1 MHz
				11		pF	V_R = 3.0 V, f = 1 MHz
			2.00	2.20	2.35	pF	V_R = 25 V, f = 1 MHz
		BB 121B		18		pF	V_R = 1.0 V, f = 1 MHz
				12		pF	V_R = 3.0 V, f = 1 MHz
			2.25	2.45	2.65	pF	V_R = 25 V, f = 1 MHz
		BB 122		20		pF	V_R = 1.0 V, f = 1 MHz
				13		pF	V_R = 3.0 V, f = 1 MHz
			2.10	2.45	2.80	pF	V_R = 25 V, f = 1 MHz
C_3/C_{25}	Capacitance Ratio		4.5	5.2	6.0		V_R = 3 V/25 V, f = 1 MHz
R_S	Series Resistance	BB 121A/B		0.6	0.8	Ω	C = 9 pF, f = 470 MHz
		BB 122		0.9	1.2	Ω	C = 9 pF, f = 470 MHz
f_o	Series Resonant Frequency	BB 121A/B		2.0		GHz	V_R = 25 V
		BB 122		1.8		GHz	V_R = 25 V
L_S	Series Inductance			2.5		nH	1.5 mm from case

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. The capacitance difference between any two diodes in one set is less than 3% for the BB 121A and BB 121B and less than 6% for the BB 122 over the reverse voltage range of 0.5 V to 28 V.
3. For product family characteristic curves, refer to Chapter 4, D11.

BB139

VHF / FM VARACTOR DIODE

DIFFUSED SILICON PLANAR

- **C_3/C_{25}...5.0–6.5**
- **MATCHED SETS** (Note 2)

ABSOLUTE MAXIMUM RATINGS (Note 1)

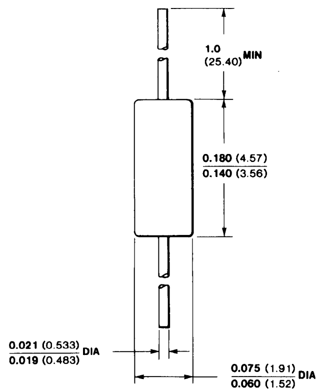
Temperatures

Storage Temperature Range	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Maximum Voltage

WIV	Working Inverse Voltage	30 V

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	30			V	I_R = 100 μA
I_R	Reverse Current		10 0.1	50 0.5	nA μA	V_R = 28 V V_R = 28 V, T_A = 60°C
C	Capacitance	 4.3	29 5.1	 6.0	pF pF	V_R = 3.0 V, f = 1 MHz V_R = 25 V, f = 1 MHz
C_3/C_{25}	Capacitance Ratio	5.0	5.7	6.5		V_R = 3 V/25 V, f = 1 MHz
Q	Figure of Merit		150			V_R = 3.0 V, f = 100 MHz
R_S	Series Resistance		0.35		Ω	C = 10 pF, f = 600 MHz
L_S	Series Inductance		2.5		nH	1.5 mm from case
f_o	Series Resonant Frequency		1.4		GHz	V_R = 25 V

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. The capacitance difference between any two diodes in one set is less than 3% over the reverse voltage range of 0.5 V to 28 V.
3. For product family characteristic curves, refer to Chapter 4, D12.

BB204B • BB204G • MV104

DUAL FM VARACTOR DIODES

DIFFUSED SILICON PLANAR

- C . . . 37–42 pF (BB204B, MV104)
- C . . . 34–39 pF (BB204G)
- Q . . . 100 (MIN) (MV104)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

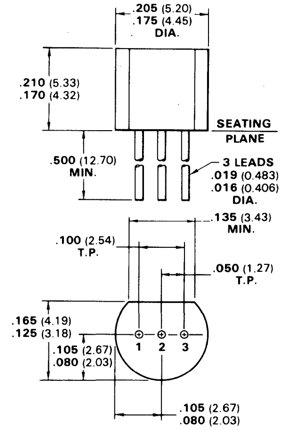
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	280 mW
Linear Power Derating Factor	2.24 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	30 V
I_F	Continuous Forward Current	200 mA

TO-92 OUTLINE



NOTES:
Copper leads, tin plated
Transfer moulded thermosetting plastic package
Package weight is 0.25 gram
Pins 1 and 3 are anode connections and pin 2 is common cathode connection

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC (each diode)	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	32				I_R = 10 μA
I_R	Reverse Current		5.0 50	50 500	nA nA	V_R = 30 V V_R = 30 V, T_A = 60°C
C	Capacitance BB204B, MV104 BB204G	37 34		42 39	pF pF	V_R = 3 V, f = I MHz V_R = 3 V, f = I MHz
C_3/C_{30}	Capacitance Ratio BB204B, BB204G MV104	2.4 2.5	2.6 2.65	2.8 2.8		V_R = 3 V, f = I MHz V_R = 3 V, f = I MHz
L_S	Series Inductance		6.0		nH	f = 250 MHz I.5m/m leads
R_D	Dynamic Resistance MVI04 BB204B, BB204G		0.2 0.2	 0.4	Ω Ω	V_R @ 38 pF, f = 100 MHz V_R @ 38 pF, f = 100 MHz
C_C	Case Capacitance		0.18		pF	f = I MHz, I.5m/m leads
TC_C	Capacitance Temperature Coefficient		280	400	ppm/°C	
Q	Figure of Merit MV104	100	125			V_R = 3 V, f = 100 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D9.

BZX55C3V3 – BZX55C33

500 mW SILICON ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)

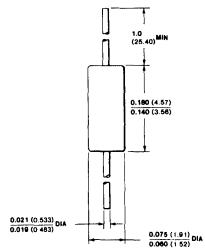
Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	2.85 mW/°C
Maximum Surge Power (Note 4)	30 W

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient)

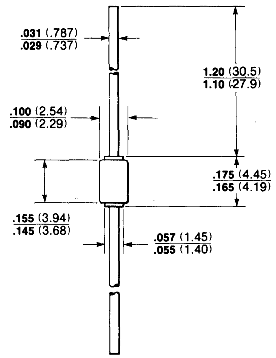
SYMBOL	V_Z		Z_Z	Z_{ZK}	I_R	V_{RT}	I_{ZM}	TC
CHARACTERISTIC	Zener Voltage (Note 3) @I_Z=5.0 mA		Maximum Zener Impedance @I_Z=5.0 mA	Maximum Zener Knee Impedance @I_{ZK}=1.0 mA	Maximum Reverse Current @V_{RT} 150°C	Test Voltage	Maximum Zener Current	Typical Temperature Coefficient of V_Z
	MIN	MAX						
UNIT	V	V	Ω	Ω	μA	V	μA	%/°C
BZX55C3V3	3.1	3.5	85	600	40	1.0	115	−0.060
BZX55C3V6	3.4	3.8	85	600	40	1.0	108	−0.055
BZX55C3V9	3.7	4.1	80	600	40	1.0	100	−0.050
BZX55C4V3	4.0	4.6	70	600	40	1.5	90	−0.040
BZX55C4V7	4.4	5.0	60	600	30	1.5	85	−0.020
BZX55C5V1	4.8	5.4	35	550	2.0	1.0	79	+0.010
BZX55C5V6	5.2	6.0	25	450	2.0	1.0	74	+0.025
BZX55C6V2	5.8	6.6	10	200	2.0	2.0	69	+0.032
BZX55C6V8	6.4	7.2	8.0	150	2.0	3.0	64	+0.040
BZX55C7V5	7.0	7.9	7.0	50	2.0	5.0	59	+0.045
BZX55C8V2	7.7	8.7	7.0	50	2.0	6.0	54	+0.048
BZX55C9V1	8.5	9.6	10	50	2.0	7.0	49	+0.050
BZX55C10	9.4	10.6	15	70	2.0	7.5	44	+0.055
BZX55C11	10.4	11.6	20	70	2.0	8.5	40	+0.060
BZX55C12	11.4	12.7	20	90	2.0	9.0	36	+0.065
BZX55C13	12.4	14.1	26	110	2.0	10	32	+0.070
BZX55C15	13.8	15.6	30	110	2.0	11	30	+0.070
BZX55C16	15.3	17.1	40	170	2.0	12	27	+0.075
BZX55C18	16.8	19.1	50	170	2.0	14	24	+0.075
BZX55C20	18.8	21.2	55	220	2.0	15	22	+0.080
BZX55C22	20.8	23.3	55	220	2.0	17	20	+0.080
BZX55C24	22.8	25.6	80	220	2.0	18	18	+0.085
BZX55C27	25.1	28.9	80	220	2.0	20	16	+0.085
BZX55C30	28.0	32.0	80	220	2.0	22	15	+0.085
BZX55C33	31.0	35.0	80	220	2.0	24	13	+0.085

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on application involving pulsed or low duty-cycle operation.
3. ±20%, ±10%, ±2% and ±1% V_Z tolerance versions are available.
4. Non-recurrent square wave, PW = 100 μs, T_J = 150°C.
5. V_F = 1.0 V (max) @ I_F = 100 mA for all types.
6. For product family characteristic curves, refer to Chapter 4, D13.

BZX85C3V3 – BZX85C33

1 W SILICON ZENER DIODES

DO-41 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.30 gram

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 50°C Ambient	1.3 W
Linear Power Derating Factor (from 50°C)	10.4 mW/°

ELECTRICAL CHARACTERISTICS (25°C Ambient)

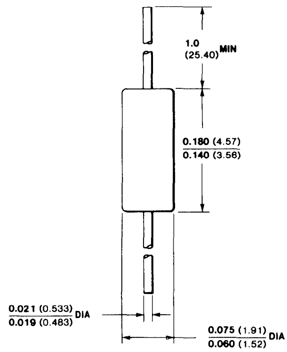
SYMBOL	V_Z		Z_Z	I_{ZT}	Z_{ZK}	I_{ZK}	I_R	V_{RT}	TC	
CHARACTERISTICS	Zener Voltage @I_{ZT}		Maximum Zener Impedance @I_{ZT}	Test Current	Maximum Zener Knee Impedance @I_{ZK}	Test Current	Maximum Reverse Current @V_{RT}	Test Voltage	Temperature Coefficient of V_Z @I_{ZT}	
	MIN	MAX							MIN	MAX
UNIT	V	V	Ω	mA	Ω	mA	μA	V	%°C	%°C
BZX85C3V3	3.1	3.5	20	80	400	1.0	40	1.0	−0.080	−0.050
BZX85C3V6	3.4	3.8	15	60	500	1.0	20	1.0	−0.080	−0.050
BZX85C3V9	3.7	4.1	15	60	500	1.0	10	1.0	−0.070	−0.020
BZX85C4V3	4.0	4.6	13	50	500	1.0	3.0	1.0	−0.050	+0.010
BZX85C4V7	4.4	5.0	13	45	600	1.0	3.0	1.5	−0.030	+0.040
BZX85C5V1	4.8	5.4	10	45	500	1.0	1.0	2.0	−0.010	+0.040
BZX85C5V6	5.2	6.0	7.0	45	400	1.0	1.0	2.0	0	+0.045
BZX85C6V2	5.8	6.6	4.0	35	300	1.0	1.0	3.0	+0.010	+0.055
BZX85C6V8	6.4	7.2	3.5	35	300	1.0	1.0	4.0	+0.015	+0.060
BZX85C7V5	7.0	7.9	3.0	35	200	0.5	1.0	4.5	+0.020	+0.065
BZX85C8V2	7.7	8.7	5.0	25	200	0.5	1.0	5.0	+0.030	+0.070
BZX85C9V1	8.5	9.8	5.0	25	200	0.5	1.0	6.5	+0.035	+0.075
BZX85C10	9.4	10.6	7.0	25	200	0.5	0.5	7.0	+0.040	+0.080
BZX85C11	10.4	11.6	8.0	20	300	0.5	0.5	7.7	+0.045	+0.080
BZX85C12	11.4	12.7	9.0	20	350	0.5	0.5	8.4	+0.045	+0.085
BZX85C13	12.4	14.1	10	20	400	0.5	0.5	9.1	+0.050	+0.085
BZX85C15	13.8	15.6	15	15	500	0.5	0.5	10.5	+0.055	+0.090
BZX85C16	15.3	17.1	15	15	500	0.5	0.5	11.0	+0.055	+0.090
BZX85C18	16.8	19.1	20	15	500	0.5	0.5	12.5	+0.060	+0.090
BZX85C20	18.8	21.2	24	10	600	0.5	0.5	14.0	+0.060	+0.090
BZX85C22	20.8	23.3	25	10	600	0.5	0.5	15.5	+0.060	+0.095
BZX85C24	22.8	25.6	25	10	600	0.5	0.5	17.0	+0.060	+0.095
BZX85C27	25.1	28.9	30	8.0	750	0.25	0.5	19.0	+0.060	+0.095
BZX85C30	28.0	32.0	30	8.0	1000	0.25	0.5	21.0	+0.060	+0.095
BZX85C33	31.0	35.0	35	8.0	1000	0.25	0.5	23.0	+0.060	+0.095

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on application involving pulsed or low duty-cycle operation.
3. V_F = 1.0 V (Max) @I_F = 200 mA for all types.
4. For product family characteristic curves, refer to Chapter 4, D14

BZY88C3V3 – BZY88C33

500 mW SILICON ZENER DIODES

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures	
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C
Power Dissipation (Note 2)	
Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	2.85 mW/°C
Maximum Surge Power (Note 3)	15 W

ELECTRICAL CHARACTERISTICS (AT I_Z=1.0 mA, 25°C Ambient)

SYMBOL	V_Z			Z_Z	TC		
CHARACTERISTIC	Zener Voltage			Maximum Zener Impedance	Temperature Coefficient of V_Z		
	MIN	NOM	MAX		MIN	TYP	MAX
UNIT	V	V	V	Ω	mV/°C	mV/°C	mV/°C
BZY88C3V3	2.4	2.75	3.0	440	−4.5	−1.9	−0.5
BZY88C3V6	2.7	3.0	3.3	430	−4.5	−2.05	−0.5
BZY88C3V9	3.0	3.3	3.6	430	−3.5	−2.4	−0.5
BZY88C4V3	3.3	3.6	3.9	430	−2.7	−2.25	−0.5
BZY88C4V7	3.7	4.1	4.3	420	−2.5	−2.0	−0.3
BZY88C5V1	4.3	4.65	5.0	370	−2.1	−1.9	−0.3
BZY88C5V6	4.8	5.3	5.7	350	−1.8	−1.4	0
BZY88C6V2	5.7	5.9	6.5	250	0	+1.6	+3.0
BZY88C6V8	6.3	6.7	6.9	70	+2	+3.2	+3.7
BZY88C7V5	7.0	7.45	7.8	20	+3	+4.2	+5.9
BZY88C8V2	7.8	8.1	8.5	20	+4.3	+5.0	+6.0
BZY88C9V1	8.55	9.0	9.5	24	+4.5	+6.0	+7.0
BZY88C10	9.3	9.9	10.5	50	+6.0	+6.6	+7.0
BZY88C11	10.3	10.9	11.5	70	+7.1	+8.3	+9.0
BZY88C12	11.3	11.9	12.5	80	+7.6	+8.7	+9.2
BZY88C13	12.3	12.9	13.0	90	+9.1	+10.1	+11.1
BZY88C15	13.8	14.9	15.5	95	+11	+12.5	+13
BZY88C16	15.3	15.8	16.9	100	+12	+13	+14
BZY88C18	16.7	17.8	18.9	120	+14	+15	+16.5
BZY88C20	18.7	19.8	21.0	140	+16	+17	+18.5
BZY88C22	20.6	21.8	23.1	150	+17	+19	+21
BZY88C24	22.5	23.8	25.7	200	+19	+21	+23
BZY88C27	24.7	26.6	28.5	300	+21	+22.5	+25
BZY88C30	27.5	29.5	31.5	350	+22	+24	+29
BZY88C33	29.5	32.0	34.5	450	+23	+25	+35

NOTES:
1. These ratings are limiting values above which the serviceability of the diode mav be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Non-recurrent square wave, PW = 100 μs, T_J = 150°C
4. V_F = 0.9 V (Max) @I_F = 10 mA for all types
5. For Product Family Characteristic curves, refer to Chapter 4, D13

FAIRCHILD • BZY88C3V3 – BZY88C33

ELECTRICAL CHARACTERISTICS (AT I_Z = 5.0 mA 25°C Ambient)

SYMBOL	V_Z			Z_Z	TC		
CHARACTERISTIC	Zener Voltage			Maximum Zener Impedance	Temperature Coefficient of V_Z		
	MIN	NOM	MAX		MIN	TYP	MAX
UNIT	V	V	V	Ω	mV/°C	mV/°C	mV/°C
BZY88C3V3	3.1	3.3	3.5	110	−4.0	−2.3	−0.5
BZY88C3V6	3.4	3.6	3.8	105	−3.5	−2.0	−0.5
BZY88C3V9	3.7	3.9	4.1	100	−2.5	−2.05	−0.5
BZY88C4V3	4.0	4.3	4.5	90	−2.5	−1.8	−0.5
BZY88C4V7	4.4	4.7	5.0	85	−2.0	−1.55	0
BZY88C5V1	4.8	5.1	5.4	75	−1.75	−1.2	0
BZY88C5V6	5.3	5.6	6.0	55	−1.5	−0.2	+1.0
BZY88C6V2	5.8	6.2	6.6	27	+0.5	+2.0	+3.5
BZY88C6V8	6.4	6.8	7.2	15	+2.3	+3.2	+3.8
BZY88C7V5	7.1	7.5	7.9	15	+3.1	+4.2	+5.9
BZY88C8V2	7.8	8.2	8.7	20	+4.2	+5.0	+6.0
BZY88C9V1	8.6	9.1	9.6	25	+4.8	+6.0	+7.0
BZY88C10	9.4	10	10.6	25	+6.0	+7.0	+7.5
BZY88C11	10.4	11	11.6	25	+7.0	+8.7	+9.1
BZY88C12	11.4	12	12.6	35	+8.5	+9.0	+9.6
BZY88C13	12.4	13	14.1	35	+10	+10.5	+11.5
BZY88C15	13.9	15	15.6	35	+12	+12.5	+14
BZY88C16	15.4	16	17.1	40	+12	+13	+14
BZY88C18	16.9	18	19.1	45	+14	+15	+18
BZY88C20	18.9	20	21.2	50	+16	+17	+19
BZY88C22	20.8	22	23.3	60	+17	+19	+21
BZY88C24	22.7	24	25.9	75	+20	+21	+24
BZY88C27	25.1	27	28.9	85	+22	+23.5	+27
BZY88C30	28	30	32	95	+25	+26	+29
BZY88C33	31	33	35	120	+27	+28	+36

ELECTRICAL CHARACTERISTICS (AT I_Z = 20 mA 25°C Ambient)

SYMBOL	V_Z			Z_Z	TC		
CHARACTERISTIC	Zener Voltage			Maximum Zener Impedance	Temperature Coefficient of V_Z		
	MIN	NOM	MAX		MIN	TYP	MAX
UNIT	V	V	V	Ω	mV/°C	mV/°C	mV/°C
BZY88C3V3	3.5	4	4.2	22	−3.3	−2.4	−0.5
BZY88C3V6	3.9	4.2	4.4	20	−2.5	−1.55	−0.5
BZY88C3V9	4.2	4.45	4.65	18	−2.4	−1.55	−0.5
BZY88C4V3	4.45	4.7	4.95	17	−2.0	−1.5	−0.5
BZY88C4V7	4.9	5.1	5.3	17	−1.5	−0.85	0
BZY88C5V1	5.1	5.35	5.7	11	−1.5	−0.8	0
BZY88C5V6	5.45	5.75	6.1	8.0	−1.0	+1.0	+3.0
BZY88C6V2	5.95	6.4	6.7	3.1	+1.0	+2.2	+4.0
BZY88C6V8	6.6	6.9	7.25	3.0	+2.8	+3.2	+3.8
BZY88C7V5	7.2	7.65	7.95	5.0	+2.5	+4.2	+5.9
BZY88C8V2	7.9	8.4	8.75	6.0	+4.0	+5.0	+6.0
BZY88C9V1	8.7	9.4	9.7	7.0	+5.0	+6.0	+7.0
BZY88C10	9.5	10.1	10.8	8.0	+7.0	+7.3	+7.5
BZY88C11	10.5	11.1	11.8	10	+8.5	+9.1	+9.5
BZY88C12	11.6	12.2	12.8	25	+8.9	+9.6	+10.3
BZY88C13	12.6	13.2	14.3	25	+11	+11.5	+12.5
BZY88C15	14.1	15.3	15.9	25	+12	+13.5	+14.5
BZY88C16	15.6	16.3	17.4	30	+13	+14	+15
BZY88C18	17.2	18.4	19.6	30	+15	+16	+18
BZY88C20	19.3	20.5	21.9	35	+17.5	+18.5	+20.5
BZY88C22	21.3	22.6	24.1	35	+19	+20.5	+22.5
BZY88C24	23.3	24.7	26.7	40	+20	+23	+25
BZY88C27	25.8	28.1	30.1	45	+23	+25.5	+28
BZY88C30	29.0	31.3	33.4	50	+25	+28	+32
BZY88C33	32.0	34.2	36.6	60	+27	+30	+38

ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	C	I_R	V_{RT}
CHARACTERISTIC	Typical Capacitance @V_R = 3.0 V	Maximum Reverse Current @V_{RT}	Test Voltage
UNIT	pF	μA	V
BZY88C3V3	395	3.0	1
BZY88C3V6	370	3.0	1
BZY88C3V9	335	3.0	1
BZY88C4V3	270	3.0	1
BZY88C4V7	290	3.0	2
BZY88C5V1	275	1.0	2
BZY88C5V6	260	1.0	2
BZY88C6V2	240	1.0	2
BZY88C6V8	220	1.0	3
BZY88C7V5	190	0.5	3
BZY88C8V2	150	0.4	3
BZY88C9V1	140	0.4	5
BZY88C10	110	2.5	7
BZY88C11	90	2.5	7
BZY88C12	80	2.5	8
BZY88C13	65	2.5	9
BZY88C15	60	2.5	10
BZY88C16	55	2.5	10
BZY88C18	50	2.5	13
BZY88C20	45	2.5	14
BZY88C22	43	2.5	15
BZY88C24	42	2.5	17
BZY88C27	40	2.5	19
BZY88C30	35	2.5	21
BZY88C33	35	2.5	23

FA SERIES

PAIR, QUAD AND BRIDGE DIODE ASSEMBLIES

SILICON PLANAR EPITAXIAL

- **ΔV_F...Down to 3 mV (MAX)**
- **ΔI_R...Down to 10 nA (MAX)**

GENERAL DESCRIPTION

The FA series of diode assemblies are pairs, quads and bridges composed of individual glass diodes encapsulated in epoxy packages. The pairs and quads are also available in unencapsulated form, the diodes being securely taped together for shipment.

These assemblies feature very tight matching characteristics over broad temperature and current ranges.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

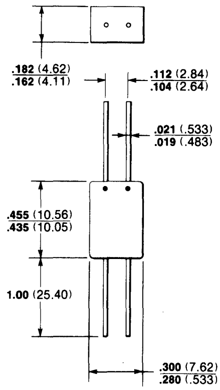
Maximum Total Power Dissipation at 25°C Ambient	
Each Diode	250 mW
Encapsulated Package	500 mW
Linear Power Derating factor (from 25°C)	
Each Diode	1.67 mW/°C
Encapsulated Package	3.33 mW/°C

Maximum Voltage and Currents

Basic Diode (See Specification below)		**FD1389**	**FD2389**	**FD3389**	**FD6389**
WIV	Working Inverse Voltage	75 V	150 V	125 V	50 V
I_O	Average Rectified Current	100 mA	100 mA	150 mA	200 mA
I_F	Continuous Forward Current	150 mA	150 mA	225 mA	300 mA
i_f	Recurrent Peak Forward Current	300 mA	300 mA	450 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current				
	Pulse width = 1.0 s	1.0 A	1.0 A	1.0 A	1.0 A
	Pulse width = 1.0 μs	4.0 A	4.0 A	4.0 A	4.0 A

PACKAGE OUTLINE

FA2300 SERIES
SUFFIX E



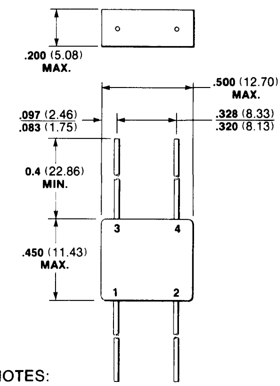
NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 0.95 gram

Package Outline 308

MATCHING CHARACTERISTICS (Apply over temperature range of −55°C to +100°C)

Basic Diode (See Specification below)	Forward Current Matching Range (Notes 4 & 6)	Reverse Current Match (ΔI_R Maximum) (Note 3)	Forward Voltage Match (ΔV_F Maximum)	Assembly Type Number: Encapsulated Pair	Unencapsulated Pair	Encapsulated Quad	Unencapsulated Quad	Bridge (Note 6)
FD1389	10 μA to 1.0 mA		3.0 mV	FA2310E	FA2310U	FA4310E	FA4310U	FA3310
FD1389	10 μA to 1.0 mA		10 mV	FA2311E	FA2311U	FA4311E	FA4311U	FA3311
FD1389	1.0 mA to 10 mA		5.0 mV	FA2312E	FA2312U	FA4312E	FA4312U	FA3312
FD1389	1.0 mA to 10 mA		15 mV	FA2313E	FA2313U	FA4313E	FA4313U	FA3313
FD2389	10 μA to 1.0 mA		3.0 mV	FA2320E	FA2320U	FA4320E	FA4320U	FA3320
FD2389	10 μA to 1.0 mA		10 mV	FA2321E	FA4321U	FA4321E	FA4321U	FA3321
FD2389	1.0 mA to 10 mA		5.0 mV	FA2322E	FA2322U	FA4322E	FA4322U	FA3322
FD2389	1.0 mA to 10 mA		15 mV	FA2323E	FA2323U	FA4323E	FA4323U	FA3323
FD2389	10 mA to 100 mA		10 mV	FA2324E	FA2324U	FA4324E	FA4324U	FA3324
FD2389	10 mA to 100 mA		20 mV	FA2325E	FA2325U	FA4325E	FA4325U	FA3325
FD3389	10 μA to 1.0 mA	(2.0 + 0.064 V_R) nA	10 mV	FA2330E	FA2330U	FA4330E	FA4330U	FA3330
FD3389	1.0 mA to 10 mA	(2.0 + 0.064 V_R) nA	15 mV	FA2331E	FA2331U	FA4331E	FA4331U	FA3331
FD3389	10 mA to 100 mA	(2.0 + 0.064 V_R) nA	20 mV	FA2332E	FA2332U	FA4332E	FA4332U	FA3332
FD3389	10 μA to 1.0 mA	(4.0 + 0.128 V_R) nA	10 mV	FA2333E	FA2333U	FA4333E	FA4333U	FA3333
FD3389	1.0 mA to 10 mA	(4.0 + 0.128 V_R) nA	15 mV	FA2334E	FA2334U	FA4334E	FA4334U	FA3334
FD3389	10 mA to 100 mA	(4.0 + 0.128 V_R) nA	20 mV	FA2335E	FA2335U	FA4335E	FA4335U	FA3335
FD6389	10 mA to 100 mA		10 mV	FA2360E	FA2360U	FA4360E	FA4360U	FA3360
FD6389	10 mA to 100 mA		20 mV	FA2361E	FA2361U	FA4361E	FA4361U	FA3361

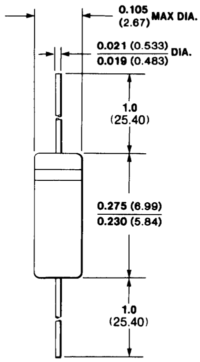
FA3300 SERIES



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Leads 1 and 2 are the common anode and cathode terminals respectively. Leads 3 and 4 are the two anode/cathode terminals
Package weight in 1.4 grams

Package Outline 309

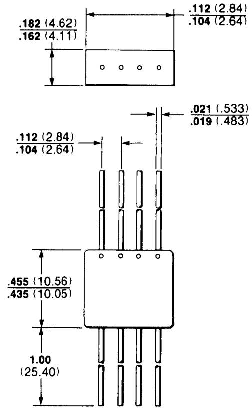
FA2300 SERIES
FA4300 SERIES
SUFFIX U



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

Package Outline DO-7

FA4300 SERIES
SUFFIX E



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 1.5 grams

Package Outline 310

BASIC DIODE ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FD1389		FD2389		FD3389		FD6389		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
BV	Breakdown Voltage	100								V	$I_R = 5.0\ \mu A$
				200		150		75		V	$I_R = 100\ \mu A$
I_R	Reverse Current		100		100		1.0		100	nA	V_R = WIV
			100		100		3.0		100	µA	V_R = WIV, T_A = 150°C
V_F	Forward Voltage				1.000		1.000		1.000	V	I_F = 200 mA
					0.925		0.930		0.920	V	I_F = 100 mA
					0.860		0.880		0.860	V	I_F = 50 mA
			1.000		0.790		0.840		0.790	V	I_F = 20 mA
			0.875		0.740		0.810		0.750	V	I_F = 10 mA
			0.800		0.700		0.770		0.710	V	I_F = 5.0 mA
			0.725		0.620		0.730		0.670	V	I_F = 2.0 mA
			0.670		0.610		0.710		0.630	V	I_F = 1.0 mA
C	Capacitance (Note 5)		2.0		5.0		6.0		3.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time		4.0							ns	$I_f = I_r$ = 10 mA Recover to 1.0 mA
					50					ns	$I_f = I_r$ = 30 mA Recover to 1.0 mA
									4.0	ns	$I_f = I_r$ = 200 mA Recover to 20 mA

NOTES:
1. These are Limiting values above which life or satisfactory performance may be impaired
2. These are steady state Limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. The Reverse Current Match (ΔI_R) is the difference in reverse current between the diode having the highest I_R and that having the lowest I_R in a given assembly. The reverse voltage (V_R) in the ΔI_R calculation can be any value up to 125 V. For example, the maximum ΔI_R for an FA2330E at V_R of IO V is (2.0 + 0.064 x 10) nA or 2.64 nA.
4. The Forward Current Matching Ranges between 10 µA and 10 mA may be applied either as a dc current or a pulse current. Above 10 mA, however, the matching characteristics are guaranteed only for low duty cycle (≤1%) pulse current. Conditions of test are shown in the characteristic curve and test circuit section of this book (see Note 7).
5. Capacitance cannot be monitored independently on each diode in a bridge configuration. In measuring capacitance in a bridge, the limit is 4/3 that shown in the basic diode electrical characteristics.
6. For matched bridges, the forward current range specified is per leg. Therefore, twice the current specified is applied to the assembly.
7. For product family characteristics curves for the basic diodes used in the assemblies, refer to the following parts of Section 4.
   FD1389 D4
   FD2389 D1
   FD3389 D2
   FD6389 D4
   For test circuits, refer to Chapter 4, D18.

FDH300•FDH333

HIGH CONDUCTANCE LOW LEAKAGE DIODES

DIFFUSED SILICON PLANAR

- **BV . . . 150 V (MIN) @ 100 μA**
- **I_R . . . 1.0 nA (MAX) @ 125 V (FDH300), 3.0 nA (MAX) @ 125 V (FDH333)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

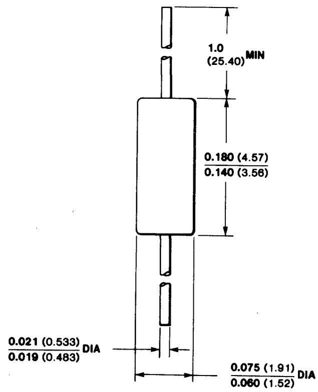
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltages and Currents

WIV	Working Inverse Voltage	125 V
I_O	Average Rectified Current	200 mA
I_F	Forward Current Steady State	500 mA
i_f	Recurrent Peak Forward Current	600 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FDH300		FDH333		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage			0.9	1.15	V	I_F = 300 mA
				0.88	1.08	V	I_F = 250 mA
			1.0	0.87	1.05	V	I_F = 200 mA
				0.86	0.97	V	I_F = 150 mA
			0.92	0.83	0.94	V	I_F = 100 mA
			0.88	0.80	0.89	V	I_F = 50 mA
			0.8			V	I_F = 10 mA
			0.75			V	I_F = 5.0 mA
			0.68			V	I_F = 1.0 mA
I_R	Reverse Current		1.0		3.0	nA	V_R = 125 V
			3.0			μA	V_R = 125 V, T_A = 150°C
					500	nA	V_R = 125 V, T_A = 100°C
C	Capacitance		6.0		6.0	pF	V_R = 0, f = 1MHz
BV	Breakdown Voltage	150		150		V	I_R = 100 μA

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For family characteristic curves, refer to Chapter 4, D2.

FDH400 • FDH444

HIGH VOLTAGE GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- **BV . . . 200 V (MIN) FDH400**
  . . . 150 V (MIN) FDH444
- **V_F . . . 1.1 V (MAX) @ 300 mA FDH400**
  @ 200 mA FDH444

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

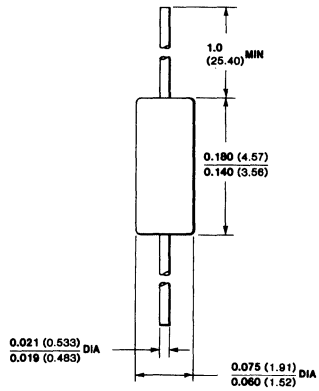
Storage Temperature Range	−65°C to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**FDH400**	**FDH444**
WIV	Working Inverse Voltage	175 V	125 V
I_O	Average Rectified Current	200 mA	200 mA
I_F	Forward Current Steady State	500 mA	500 mA
i_f	Recurrent Peak Forward Current	600 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse width = 1.0 s	1.0 A	1.0 A
	Pulse width = 1.0 μs	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FDH400		FDH444		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
VF	Forward Voltage		1.1		1.2	V	I_F = 300 mA
			1.0		1.1	V	I_F = 200 mA
BV	Breakdown Voltage	200		150		V	I_R = 100 μA
I_R	Reverse Current		100			nA	V_R = 150 V
					50	nA	V_R = 100 V,
			100			μA	V_R = 150 V, T_A = 150°C
					100	μA	V_R = 100 V, T_A = 150°C
C	Capacitance		2.0		2.5	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time		50		60	ns	I_f = 30 mA, I_r = 30 mA R_L = 100 Ω, I_{rr} = 3.0 mA

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For product family characteristic curves, refer to Chapter 4, D1.

FDH600 • FDH666
ULTRA FAST DIODES
DIFFUSED SILICON PLANAR EPITAXIAL

- **C . . . 2.5 pF (MAX) FDH600, 3.5 pF (MAX) FDH666**
- **V_F . . . 1.0 V (MAX) @ 100 mA (FDH666)**
  . . . 1.0 V (MAX) @ 200 mA (FDH600)
- **t_{rr} . . . 4.0 ns (MAX) @ $I_f = I_r$ = 10 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

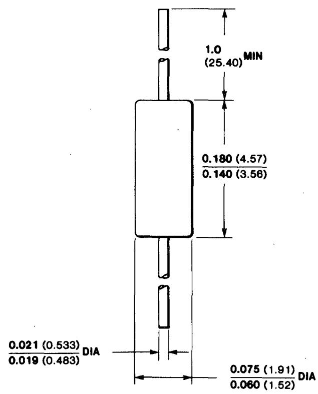
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW / °C

Maximum Voltage and Currents

		FDH 600	**FDH 666**
WIV	Working Inverse Voltage	50 V	25 V
I_O	Average Rectified Current	200 mA	200 mA
I_F	Continuous Forward Current	500 mA	500 mA
i_f	Recurrent Peak Forward Current	600 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1.0 s	1.0 A	1.0 A
	Pulse Width = 1.0 μs	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FDH600		FDH666		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage		1.0			V	I_F = 200 mA
			0.92		1.0	V	I_F = 100 mA
			0.86		0.86	V	I_F = 50 mA
			0.79		0.79	V	I_F = 10 mA
			0.65		0.65	V	I_F = 1.0 mA
I_R	Reverse Current		0.1			μA	V_R = 50 V
					0.1	μA	V_R = 25 V
			100			μA	V_R = 50 V, T_A = 150°C
					100	μA	V_R = 25 V, T_A = 150°C
BV	Breakdown Voltage	75		40		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time (Note 3)		4.0		4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100 Ω
			6.0		6.0	ns	$I_f = I_r$ = 200 mA, R_L = 100 Ω
C	Capacitance		2.5		3.5	pF	V_R = 0, f = 1.0 MHz

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 0.1 I_R.
4. For product family characteristic curves, refer to Chapter 4, D4.

FDH900 • FDH999

HIGH SPEED SWITCHING DIODES

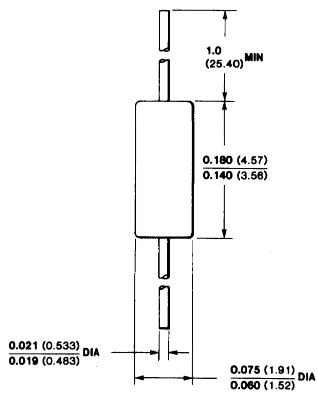
DIFFUSED SILICON PLANAR

- **BV...45 V (FDH900), 35 V (FDH999)**
- **t_{rr}...4.0 ns (FDH900), 5.0 ns (FDH999)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures			
Storage Temperature Range			−65°C to +200°C
Max. Junction Operating Temperature			+175°C
Lead Temperature			+260°C
Power Dissipation (Note 2)			
Maximum Total Dissipation at 25°C Ambient			500 mW
Linear Derating Factor (From 25°C)			3.3 mW/°C.
Maximum Voltage and Currents			
WIV	Working Inverse Voltage	FDH900	40 V
		FDH999	25 V
I_O	Average Rectified Current		200 mA
I_F	Continuous Forward Current		500 mA
i_f	Recurrent Peak Forward Current		600 mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1.0 s		1.0 A
	Pulse Width = 1.0 μs		4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FDH900		FDH999		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
BV	Breakdown Voltage	45		35		V	I_R = 5.0 μA
I_R	Reverse Current				1.0	μA	V_R = 25 V
			500			nA	V_R = 40 V
V_F	Forward Voltage				1.0	V	I_F = 10 mA
			1.0			V	I_F = 100 mA
C	Capacitance		3.0		5.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time		4.0		5.0	ns	I_f = 10 mA, I_r = 10 mA, R_L = 100 Ω, I_{rr} = 1.0 mA

NOTES:
1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4.

FDH1000

HIGH CONDUCTANCE SWITCHING DIODE

DIFFUSED SILICON PLANAR

- **V_F . . . 1 V (MAX) @ 500 mA**
- **Q_S . . . 100 pC (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

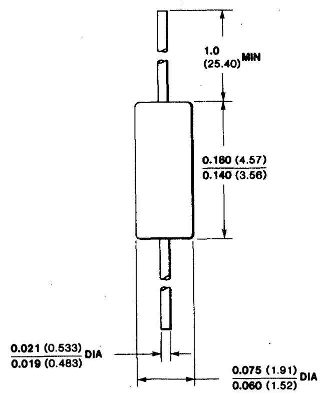
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	50 V
I_O	Average Rectified Current	200 mA
I_F	Continuous Forward Current	500 mA
i_f	Peak Repetitive Forward Current	600 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1 s	1.0 A
	Pulse Width = 1 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_f	Forward Voltage		1.0	V	I_F = 500 mA
I_R	Reverse Current		5.0 50 50	μA nA μA	V_R = 50 V V_R = 20 V V_R = 20 V, T_A = 125°C
BV	Breakdown Voltage	75		V	I_R = 100 μA
C	Capacitance		5.0	pF	V_R = 0. f = 1.0 MHz
Q_S	Stored Charge		100	pC	I_f = 10 mA, V_R = 10 V

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.

FD700 • FD777

PICOSECOND COMPUTER DIODES

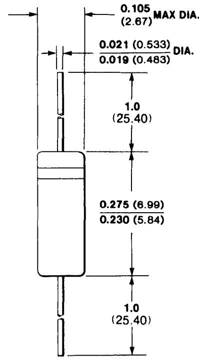
DIFFUSED SILICON PLANAR

- **C . . . 1.0 pF (MAX) @ V_R = 0, f = 1.0 MHz (FD 700)**
- **t_{rr} . . . 700 ps (MAX) @ $I_f = I_r$ = 10 mA, R_L = 100 Ω (FD 700)**
- **CONTROLLED FORWARD CONDUCTANCE**

ABSOLUTE MAXIMUM RATINGS (Note 1)

		FD700	FD777
Temperatures			
Storage Temperature Range		−65°C to +200°C	−65°C to +200°C
Max Junction Operating Temperature		+175°C	+175°C
Lead Temperature		+260°C	+260°C
Power Dissipation			
Maximum Total Dissipation at 25°C Ambient		250 mW	250 mW
Linear Derating Factor (from 25°C)		1.67 mW/°C	1.67 mW/°C
Maximum Voltages and Currents			
WIV	Working Inverse Voltage	20 V	8.0 V
I_O	Average Rectified Current	50 mA	50 mA
I_F	Forward Current Steady State dc	150 mA	150 mA
i_f	Recurrent Peak Forward Current	150 mA	150 mA
i_f (surge)	Peak Forward Surge Current Pulse Width = 1.0 s	250 mA	250 mA

DO-7 OUTLINE



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	FD700		FD777		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V_F	Forward Voltage	0.89	1.10	0.89	1.35	V	I_F = 50 mA
		0.81	0.95	0.81	1.00	V	I_F = 20 mA
		0.76	0.88	0.76	0.94	V	I_F = 10 mA
		0.64	0.74	0.64	0.79	V	I_F = 1.0 mA
		0.52	0.61	0.52	0.64	V	I_F = 0.1 mA
		0.42	0.50	0.42	0.53	V	I_F = 0.01 mA
BV	Breakdown Voltage	30		15		V	I_R = 5.0 μA
I_R	Reverse Current		50			nA	V_R = 20 V
					100	nA	V_R = 8.0 V
			50			μA	V_R = 20 V, T_A = 150°C
					50	μA	V_R = 8.0 V, T_A = 150°C
τ	Minority Carrier Lifetime		450		450	ps	(see Note 2)
t_{rr}	Reverse Recovery Time (Note 3)		700		750	ps	$I_f = I_r$ = 10 mA, R_L = 100 Ω
C	Capacitance		1.0		1.3	pF	V_R = 0, f = 1.0 MHz

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. Measured as suggested by S. M. Krakauer, IRE Proceedings, Volume 60, July 1962, pp. 1674 - 1675.
3. Recovery to 0.1 I_R.
4. For product family characteristic curves, refer to Chapter 4, D3.

FH1100 • 1N5390

HOT CARRIER DIODE

DIFFUSED SILICON

- Q_S . . . 1.6 pC (TYP)
- C . . . 1.0 pF (MAX)
- NF . . . 10 dB (MAX) @ f = 890 MHz

ABSOLUTE MAXIMUM RATINGS (Note 2)

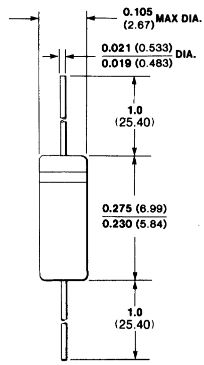
Temperatures

Storage Temperature Range	−65°C to +150°C
Max Junction Operating Temperature	+125°C
Lead Temperature	+260°C

Power Dissipation (Note 3)

Maximum Total Dissipation at 25°C Ambient	100 mW
Linear Derating Factor (from 25°C)	1.0 mW/°C

DO-7 OUTLINE



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage				0.55	V	I_F = 10 mA
I_R	Leakage Current	FH1100 1N5390			1.0 50	μA nA	V_R = 1.0 V V_R = 1.0 V
BV	Breakdown Voltage		5.0			V	I_R = 100 μA
C	Capacitance				1.0	pF	V_R = 0, f = 1.0 MHz
NF	Noise Figure				10	dB	f = 890 MHz
Q_S	Stored Charge (Note 1)	FH1100 1N5390		1.6	 3.0	pC pC	I_f = 10 mA I_f = 10 mA

NOTES:
1. Measured on B-Line Electronics QS-3 stored charge meter.
2. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
3. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
4. For product family characteristic curves, refer to Chapter 4, D10.

FJT1100 • FJT1101

ULTRA LOW LEAKAGE

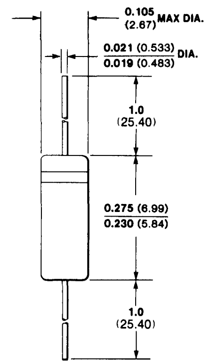
DIFFUSED SILICON PLANAR DIODES

- **I_R . . . 1.0 pA (MAX) @ 5 V (FJT1100)**
- **BV . . . 20 V (MIN) (FJT1100)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperature			
Storage Temperature Range			−55°C to +200°C
Maximum Junction Operating Temperature			+175°C
Lead Temperature			+260°C
Power Dissipation (Note 2)			
Maximum Total Power Dissipation at 25°C Ambient			250 mW
Linear Power Derating factor (from 25°C)			1.67 mW/°C
Maximum Voltage and Current			
WIV	Working Inverse Voltage	FJT1100	25 V
I_f	Continuous Forward Current	FJT1101	15 V
			150 mA

DO-7 OUTLINE



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

3

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	FJT1100	30		V	I_R = 5.0 μA
		FJT1101	20		V	I_R = 5.0 μA
I_R	Reverse Current	FJT1100		1.0	pA	V_R = 5.0 V
				10	pA	V_R = 15 V
		FJT1101		5.0	pA	V_R = 5.0 V
				15	pA	V_R = 15 V
V_F	Forward Voltage	FJT1100		1.05	V	I_F = 50 mA
		FJT1101		1.10	V	I_F = 50 mA
C	Capacitance	FJT1100		1.5	pF	V_R = 0, f = 1 MHz
		FJT1101		1.8	pF	V_R = 0, f = 1 MHz

NOTES:
1. These are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed of low duty-cycle operation.
3. For product family characteristic curves and applications information, refer to Chapter 4, D6.

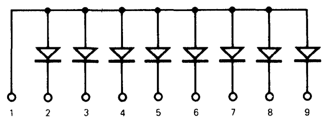
FSA1410M • FSA1411M • FSA2002M • FSA2003M

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS*

- **C . . . 5.0 pF (MAX)**
- **ΔV_F . . . 15 mV (MAX) @ 10 mA**

CONNECTION DIAGRAM

FSA1410M



See Package Outline TO-96

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−55°C to +200°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Dissipation per Junction at 25°C Ambient	400 mW
per Package at 25°C Ambient	600 mW
Linear Derating Factor (from 25°C) Junction	3.2 mW/°C
Package	4.8 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	55 V
I_F	Continuous Forward Current	350 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width=1.0 s	1.0 A
	Pulse Width=1.0 μs	2.0 A

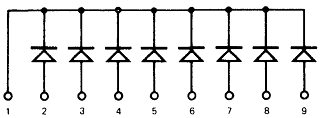
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
B_V	Breakdown Voltage	60		V	I_R = 10 μA
V_F	Forward Voltage (Note 3)		1.5 1.1 1.0	V V V	I_F = 500 mA I_F = 200 mA I_F = 100 mA
I_R	Reverse Current Reverse Current (T_A = 150°C)		100 100	nA μA	V_R = 40 V V_R = 40 V
C	Capacitance		5.0	pF	V_R = 0, f = 1 MHz
V_{FM}	Peak Forward Voltage		4.0	V	I_f = 500 mA, t_r<10 ns
t_{fr}	Forward Recovery Time		40	ns	I_f = 500 mA, t_r<10 ns
t_{rr}	Reverse Recovery Time		10 50	ns ns	$I_f = I_r$ = 10–200 mA R_L = 100 Ω, Rec. to 0.1 I_r I_f = 500 mA, I_r = 50 mA R_L = 100 Ω, Rec. to 5 mA
ΔV_F	Forward Voltage Match		15	mV	I_F = 10 mA

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operation.
3. V_F is measured using an 8 ms pulse.
4. For product family characteristic curves and test circuits, refer to Chapter 4, D15.

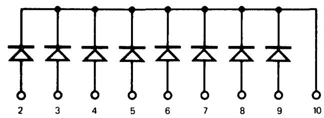
*8 COMMON CATHODE, 8 COMMON ANODE

FSA1411M



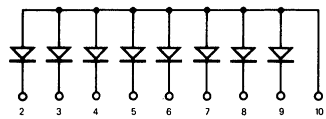
See Package Outline TO-96

FSA2002M



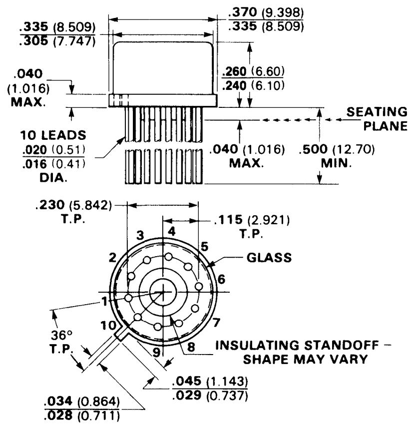
See Package Outline TO-85

FSA2003M



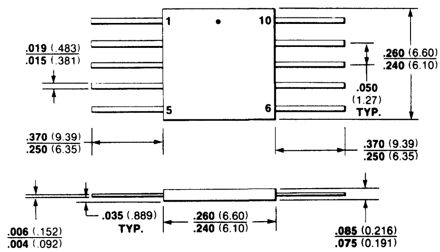
See Package Outline TO-85

TO-96 OUTLINE



NOTES:
Kovar leads, gold plated
Hermetically sealed package
Package weight is 1.32 grams

TO-85 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.26 gram

FSA2500M • FSA2501M • FSA2501P • FSA2502M

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS*

- **C. . . 5.0 pF (MAX)**
- **V_F. . . 15 mV (MAX) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range (M Suffix)	−55° C to +200° C
(P Suffix)	−55° C to +150° C
Maximum Junction Operating Temperature	+150° C
Lead Temperature	+260° C

Power Dissipation (Note 2)

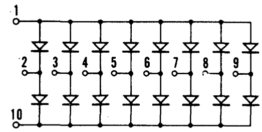
Maximum Dissipation per Junction at 25° C Ambient	400 mW
Maximum Dissipation per Package at 25° C Ambient	650 mW
Linear Derating Factor (from 25° C) Junction	3.2 mW / ° C
Package	5.2 mW / ° C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	50 V
I_F	Continuous Forward Current	350 mA
$i_{f\ (surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse width = 1.0 μs	2.0 A

CONNECTION DIAGRAMS

FSA2500M



See Package Outline TO-85

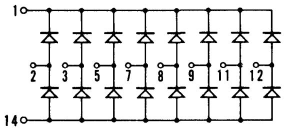
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 10 μA
V_F	Forward Voltage (Note 3)		1.0 1.1 1.5	V V V	I_F = 100 mA I_F = 200 mA I_F = 500 mA
ΔV_F	Forward Voltage Match (Note 6)		15	mV	I_F = 10 mA
I_R	Reverse Current (Note 4)		100 200	nA μA	V_R = 50 V V_R = 50 V, T_A = 125° C
C	Capacitance (Note 5)		5.0	pF	V_R = 0, f = 1.0 MHz
t_{fr}	Forward Recovery Time (Note 6)		40	ns	I_f = 500 mA
t_{rr}	Reverse Recovery Time (Note 6)		10 50	ns ns	I_f = I_r = 10 mA to 200 mA R_L = 100 Ω, I_{rr} = 0.1 I_R I_f = 500 mA, I_r = 50 mA R_L = 100 Ω, I_{rr} = 5.0 mA

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. The capacitance is measured from pin-to-pin across any one of the diodes. The interaction of other diodes is therefore included in the measured value.
6. For product family characteristic curves and test circuits refer to Chapter 4, D15.

*16-DIODE CORE DRIVER MATRIX

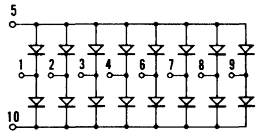
FSA2501M • FSA2501P



See Package Outlines

TO-116-2 (Ceramic)	FSA2501M
TO-116 (Plastic)	FSA2501P

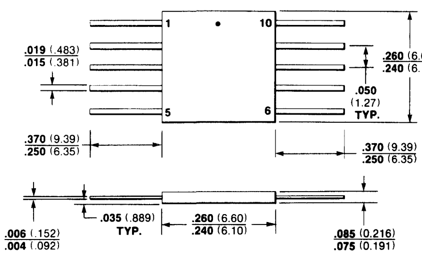
FSA2502M



See Package Outline TO-96

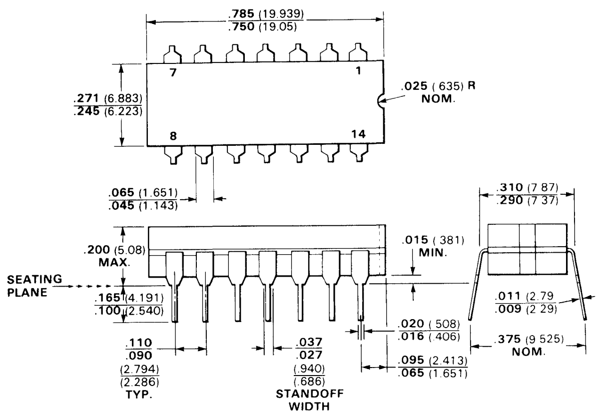
3

TO-85 OUTLINE



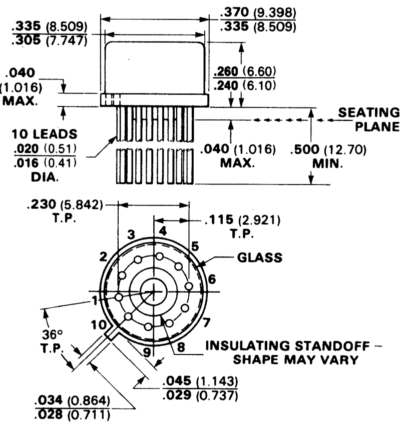
NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.26 gram

TO-116-2 OUTLINE



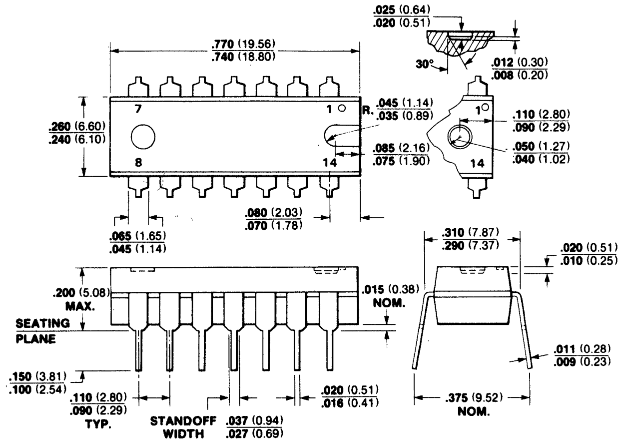
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020″ (0.508) diameter pin
Package weight is 2.0 grams

TO-96 OUTLINE



NOTES:
Kovar leads, gold plated
Hermetically sealed package
Package weight is 1.32 grams

TO-116 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300" (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

FSA2503M • FSA2503P • FSA2504M

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS

- **C. . .5.0 pF (MAX)**
- **ΔF. . .15 mV (MAX) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range (M Suffix)	−55°C to +200°C
(P Suffix)	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

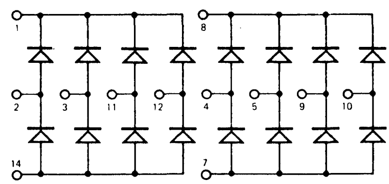
Power Dissipation (Note 2)

Maximum Dissipation per Junction at 25°C Ambient	400 mW
Maximum Dissipation per Package at 25°C Ambient	650 mW
Linear Derating Factor (from 25°C) Junction	3.2 mW/°C
Package	5.2 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	50 V
I_F	Continuous Forward Current	350 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width=1.0 s	1.0 A
	Pulse Width=1.0 μs	2.0 A

CONNECTION DIAGRAM



See Package Outlines

TO-116-2 (Ceramic)	FSA 2503M
TO-116 (Plastic)	FSA 2503P
TO-86	FSA 2504M

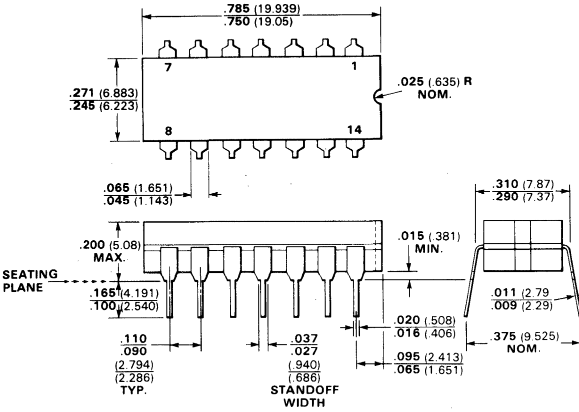
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 10 μA
V_F	Forward Voltage (Note 3)		1.0 1.1 1.5	V V V	I_F = 100 mA I_F = 200 mA I_F = 500 mA
ΔV_F	Forward Voltage Match (Note 6)		15	mV	I_F = 10 mA
I_R	Reverse Current (Note 4)		100 200	nA μA	V_R = 50 V V_R = 50 V, T_A = 125°C
C	Capacitance (Note 5)		5.0	pF	V_R = 0, f=1.0 MHz
t_{fr}	Forward Recovery Time (Note 6)		40	ns	I_f = 500 mA
t_{rr}	Reverse Recovery Time (Note 6)		10 50	ns ns	$I_f = I_r$ = 10 mA to 200 mA R_L = 100 Ω, I_{rr} = 0.1 I_R I_f = 500 mA, I_r = 50 mA R_L = 100 Ω, I_{rr} = 5.0 mA

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. The capacitance is measured from pin-to-pin across any one of the diodes. The interaction of other diodes is therefore included in the measured value.
6. For product family characteristics and test circuits, refer to Chapter 4, D15.

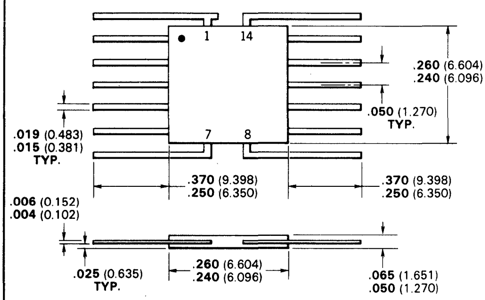
*DUAL 8-DIODE CORE DRIVER MATRIX

TO-116-2 OUTLINE



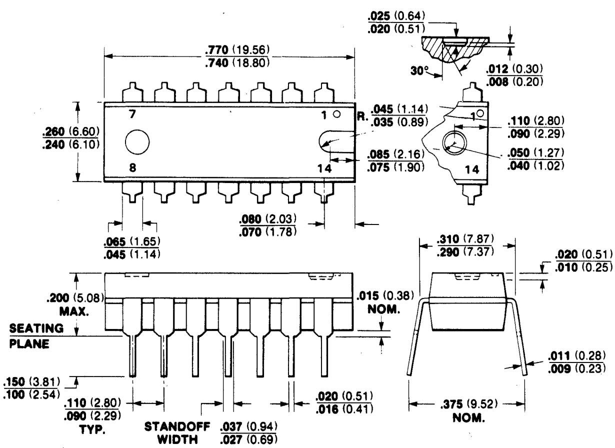
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020″ (0.508) diameter pin
Package weight is 2.0 grams

TO-86 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.27 gram

TO-116 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300″ (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

FSA2509M • FSA2509P • FSA2510M • FSA2510P

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS*

- **C. . . 5.0 pF (MAX)**
- **ΔV_F. . . 15 mV (MAX) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range (M Suffix)	−55°C to +200°C
(P Suffix)	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

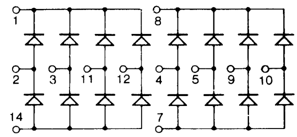
Maximum Dissipation per Junction at 25°C Ambient	400 mW
Maximum Dissipation per Package at 25°C Ambient	650 mW
Linear Derating factor (from 25°C) Junction	3.2 mW/°C
Package	5.2 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	40 V
I_F	Continuous Forward Current	350 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	2.0 A

CONNECTION DIAGRAM 5

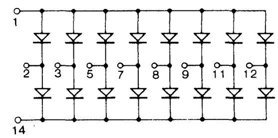
FSA2509M • FSA2509P



Package Outlines

TO-116-2 (Ceramic)	FSA2509M
TO-116 (Plastic)	FSA2509P

FSA2510M • FSA2510P



See Package Outlines

TO-116-2 (Ceramic)	FSA2510M
TO-116 (Plastic)	FSA2510P

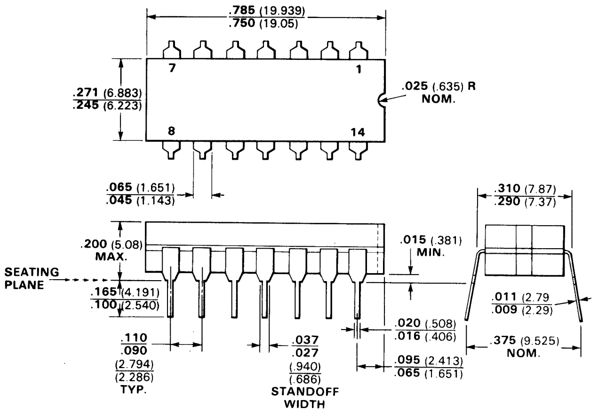
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 10 μA
V_F	Forward Voltage (Note 3)		1.0 1.1 1.3	V V V	I_F = 100 mA I_F = 200 mA I_F = 500 mA
ΔV_F	Forward Voltage Match (Note 6)		15	mV	I_F = 10 mA
I_R	Reverse Current (Note 4)		100 200	nA μA	V_R = 40 V V_R = 40 V, T_A = 150°C
C	Capacitance (Note 5)		5.0	pF	V_R = 0, f = 1.0 MHz
t_{fr}	Forward Recovery Time (Note 6)		40	ns	I_f = 500 mA
t_{rr}	Reverse Recovery Time (Note 6)		10 50	ns ns	I_f = I_r = 10 mA to 200 mA R_L = 100 Ω, I_{rr} = 0.1 I_R I_f = 500 mA, I_r = 50 mA R_L = 100 Ω, I_{rr} = 5.0 mA

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. The capacitance is measured from pin-to-pin across any one of the diodes. The interaction of other diodes is therefore included in the measured value.
6. For product family characteristic curves and test circuits, refer to Chapter 4, D15.

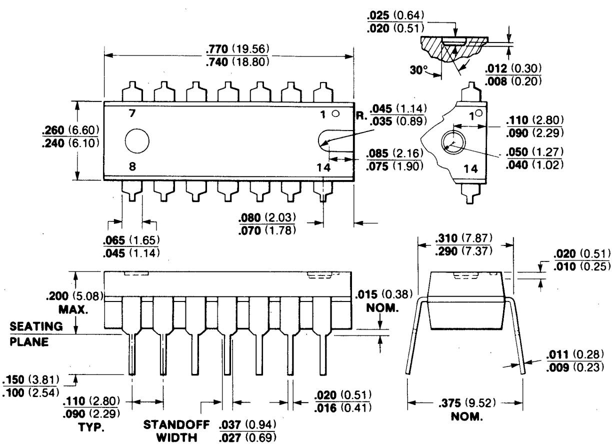
*DUAL 8-DIODE AND 16-DIODE CORE DRIVER MATRICES

TO-116-2 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300" (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020" (0.508) diameter pin
Package weight is 2.0 grams

TO-116 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300" (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

FSA2563M • FSA2563P • FSA2564M • FSA2564P
FSA2565M • FSA2565P • FSA2566M • FSA2566P
PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS

- **C. . .3.0 pf (max)**
- **V_F. . . 15 mV (max) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range (M Suffix)	−55°C to +200°C
(P Suffix)	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

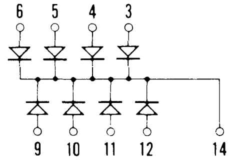
Power Dissipation (Note 2)

Maximum Dissipation per Junction at 25°C Ambient	400 mW
Maximum Dissipation per Package at 25°C Ambient	650 mW
Linear Derating Factor (from 25°C) Junction	3.2 mW/°C
Package	5.2 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	40 V
I_F	Continuous Forward Current	350 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	2.0 A

CONNECTION DIAGRAMS
FSA2563
8-Diode Common-Cathode



See Package Outlines

TO-116-2 (Ceramic)	FSA2563M
TO-116 (Plastic)	FSA2563P

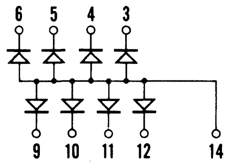
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 10 μA
V_F	Forward Voltage (Note 3)		1.0 1.1 1.3	V V V	I_F = 100 mA I_F = 200 mA I_F = 500 mA
I_R	Reverse Current (Note 4)		100 100	nA μA	V_R = 40 V V_R = 40 V, T_A = 125°C
C	Capacitance (Note 5)		3	pF	V_R = 0 V, f = 1 MHz
V_{FM}	Peak Forward Voltage (Note 6)		4	V	I_F = 500 mA
t_{fr}	Forward Recovery Time (Note 6)		40	ns	I_f = 500 mA
t_{rr}	Reverse Recovery Time (Note 6)		10 50	ns ns	I_f = I_r = 10 mA to 200 mA R_L = 100Ω, I_{rr} = 0.1 I_r I_f = 500 mA, I_r = 50 mA R_L = 100Ω, I_{rr} = 5 mA
ΔV_F	Forward Voltage Match (Note 6)		15	mV	I_F = 10 mA

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 μs pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. The capacitance is measured from pin-to-pin across any one of the diodes. The interaction of other diodes is therefore included in the measured value.
6. For product family characteristic curves and test circuits, refer to Chapter 4, D15.

*COMMON ANODE, COMMON CATHODE

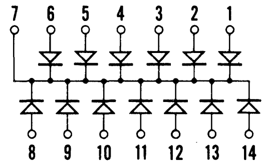
FSA2564
8-Diode Common-Anode



See Package Outlines

TO-116-2 (Ceramic) FSA2564M
TO-116 (Plastic) FSA2564P

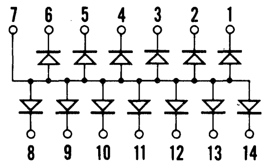
FSA2565
13-Diode Common-Cathode



See Package Outlines

6B (Ceramic DIP) FSA2565M
9B (Plastic DIP) FSA2565P

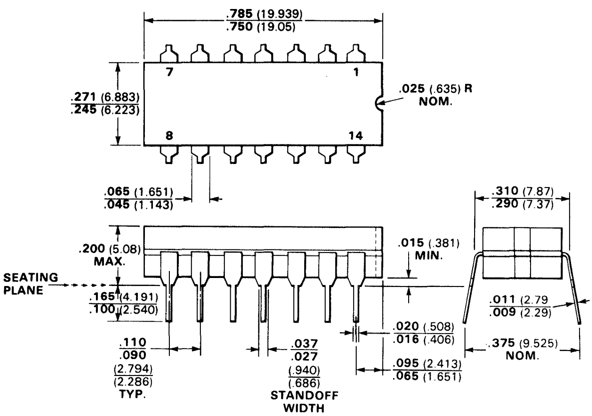
FSA2566
13-Diode Common-Anode



See Package Outlines

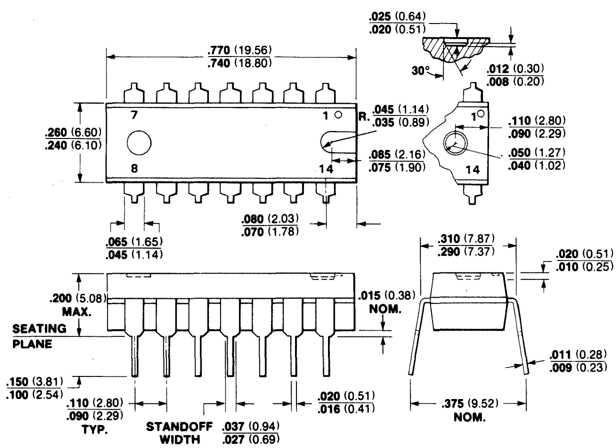
6B (Ceramic DIP) FSA2566M
9B (Plastic DIP) FSA2566P

TO-116-2 OUTLINE



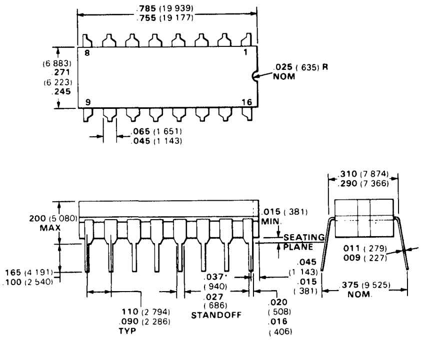
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020″ (0.508) diameter pin
Package weight is 2.0 grams

TO-116 OUTLINE



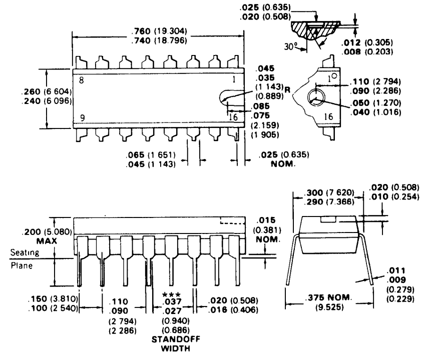
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300″ (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

6B OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ centers (7.62)
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch diameter pin (0.51)
Package weight is 2.0 grams
*The .037−.027 dimension does not apply to the corner pins

9B OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300″ (7.62) centers
Leads purposely have a "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch (0.51) diameter pin
***The .037−.027 (0.94−0.69) dimension does not apply to the corner pins

FSA2619M • FSA2619P • FSA2620M • FSA2620P
FSA2621M • FSA2719M • FSA2719P • FSA2720M
FSA2720P • FSA2721M

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS

- **C . . . 2.0 pF (MAX) FSA2719 Series**
- **ΔV_F . . . 15 mV (MAX) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Notes 1 and 5)

Temperatures

Storage Temperature Range (M Suffix)	−55° C to +200° C
(P Suffix)	−55° C to +150° C
Maximum Junction Operating Temperature	+150° C
Lead Temperature	+260° C

Power Dissipation (Note 2)

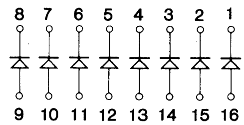
Maximum Dissipation per Junction at 25° C Ambient	400 mW
Maximum Dissipation per Package at 25° C Ambient	650 mW
Linear Derating factor (from 25° C) Junction	3.2 mW/°C
Package	5.2 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage FSA2619 (Note 5)	75 V
	FSA2719	50 V
I_F	Continuous Forward Current	350 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	2.0 A

CONNECTION DIAGRAMS

FSA2619 • FSA2719



See Package Outlines

6B (Ceramic DIP)	FSA2619M
	FSA2719M
9B (Plastic DIP)	FSA2619P
	FSA2719P

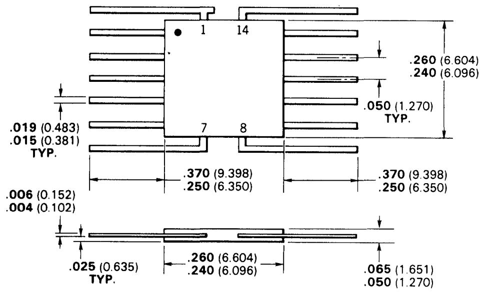
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage (Note 5)	FSA2719	75		V	I_R = 5.0 μA
		FSA2619	100		V	I_R = 100 μA
I_R	Reverse Current	FSA2619		5.0	μA	V_R = 75 V
				25	nA	V_R = 20 V
				50	μA	V_R = 20 V, T_A = 150° C
		FSA2719		100	nA	V_R = 50 V
				100	μA	V_R = 50 V, T_A = 150° C
V_F	Forward Voltage (Note 3)			1.0	V	I_F = 10 mA
t_{rr}	Reverse Recovery Time (Note 6)	FSA2619		5.0	ns	$I_f = I_r$ = 10 mA, I_{rr} = 1.0 mA
		FSA2719		6.0	ns	$I_f = I_r$ = 10 mA, I_{rr} = 1.0 mA
C	Capacitance (Note 6)	FSA2619		4.0	pF	V_R = 0
		FSA2719		2.0	pF	V_R = 0
ΔV_F	Forward Voltage Match (Note 6)			15	mV	I_F = 10 mA
t_{fr}	Forward Recovery Time (Note 6)	FSA2619		20	ns	50 mA Peak square wave, 0.1 μs Pulse Width, 5.0 kHz - 100 kHz
V_{FM}	Peak Forward Voltage (Note 6)	FSA2719		3.0	V	I_F = 100 mA, $t_r \leq$ 10 ns
RE	Rectification Efficiency		45		%	V_f = 2 V rms, f = 100 MHz

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted or applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. FSA2619 denotes series FSA2619M/P, FSA2620M/P and FSA2621M;
   FSA2719 denotes series FSA2719M/P, FSA2720M/P and FSA2721M.
6. For product family characteristics curves and test circuits, refer to Chapter 4, D15.

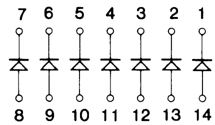
*UNCONNECTED

TO-86 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.27 gram

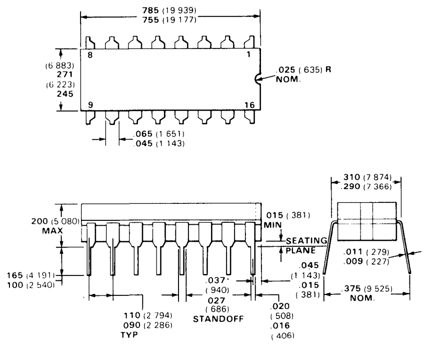
FSA2620 • FSA2621
FSA2720 • FSA2721



See Package Outlines

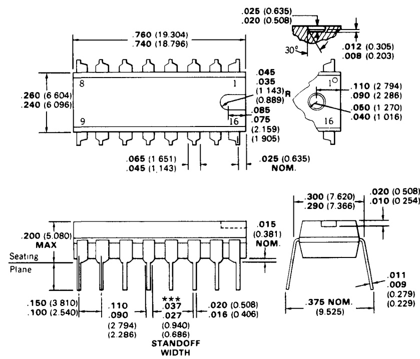
TO-116-2 (Ceramic)	FSA2620M FSA2720M
TO-116 (Plastic)	FSA2620P FSA2720P
TO-86	FSA2621M FSA2721M

6B OUTLINE



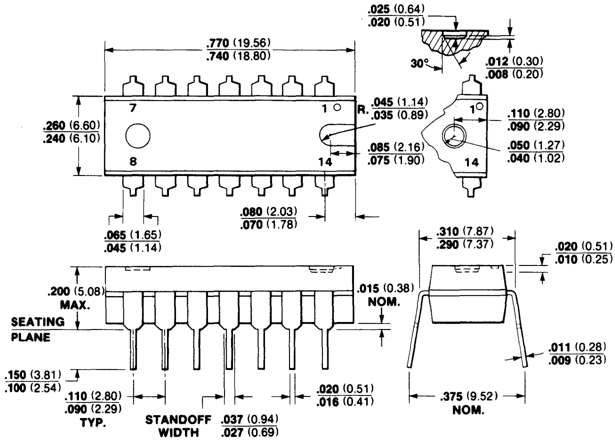
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ centers (7.62)
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch diameter pin (0.51)
Package weight is 2.0 grams
*The .037–.027 dimension does not apply to the corner pins

9B OUTLINE



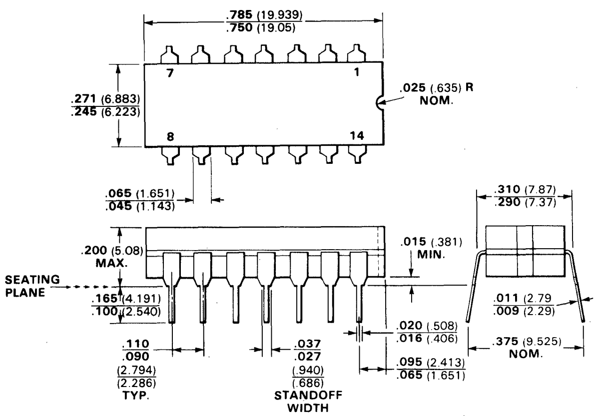
NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300″ (7.62) centers
Leads purposely have a "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch (0.51) diameter pin
***The .037–.027 (0.94–0.69) dimension does not apply to the corner pins

TO-116 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300″ (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

TO-116-2 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020″ (0.508) diameter pin
Package weight is 2.0 grams

FSA2702M • FSA2703M • FSA2704M • FSA2705M

PLANAR AIR-ISOLATED MONOLITHIC DIODE BRIDGE ARRAYS

- **ΔV_F...3 mV (MAX) FSA2702M, FSA2703M**
- **ΔI_R...1 μA (MAX) FSA2702M, FSA2703M**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−55°C to +200°C
Maximum Junction Operating Temperature	175°C
Lead Temperature	+260°C

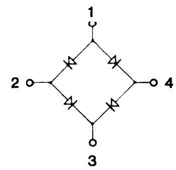
Power Dissipation (Note 2)

Maximum Dissipation	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	40 V
I_F	Continuous Forward Current	300 mA
i_f	Recurrent Peak Forward Current	600 mA
$i_{f\ (surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

CONNECTION DIAGRAM



See Package Outlines

TO-33	FSA2702M, FSA2704M
TO-72	FSA2703M, FSA2705M

3

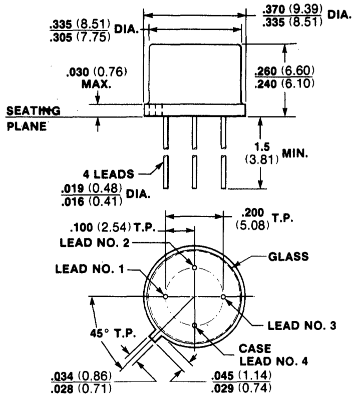
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 100 μA
I_R	Reverse Current (Note 4)		100 100	nA μA	V_R = 40 V V_R=40 V, T_A = 150°C
C	Capacitance (Note 5)		4.0	pF	V_R = 0
V_F	Forward Voltage (Note 3)		1.000 .920 .850 .780 .740 .700 .650 .620	V V V V V V V V	I_F = 200 mA I_F = 100 mA I_F = 50 mA I_F = 20 mA I_F = 10 mA I_F = 5.0 mA I_F = 2.0 mA I_F = 1.0 mA
t_{rr}	Reverse Recovery Time (Note 6)		6.0 8.0	ns ns	$I_f = I_r$ = 10 mA, I_{rr} = 1.0 mA $I_f = I_r$ = 200 mA, I_{rr} = 20 mA
ΔV_f	Forward Voltage Match (Note 6) FSA2702, FSA2703		3.0	mV	I_F = 10 μA to 10 mA T_A = −55°C to +100°C
ΔI_R	Reverse Current Match (Note 6) FSA2702, FSA2703		1.0	μA	V_R = 10 V, T_A = −55°C to +100°C

NOTES:

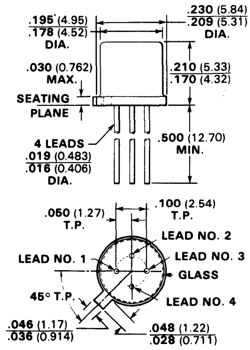
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. The capacitance is measured from pin-to-pin across any one of the diodes. The interaction of other diodes is therefore included in the measured value.
6. For product family characteristic curves and test circuits, refer to Chapter 4, D15.

JEDEC TO-33 OUTLINE



NOTES:
Kovar leads, gold plated
Hermetically sealed package
Package weight is 1.22 grams

TO-72 OUTLINE



NOTES:
Kovar leads, gold plated
Hermetically sealed package
Package weight is 0.36 gram

RF400 • RF401

AFC DIODES

SILICON PLANAR EPITAXIAL

- C_3/C_{20}. . . 2.0 (MIN)
- Q. . . 350 (MIN)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

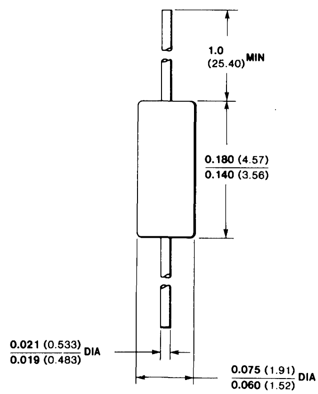
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	350 mW
Linear Power Derating Factor	2.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	30 V
I_F	Continuous Forward Current	250 mA

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage		35			V	I_R = 10 μA
I_R	Reverse Current			3.0 5.0	30 50	nA μA	V_R = 30 V V_R = 30 V, T_A = 150°C
Q	Figure of Merit		350				V_R = 4.0 V, f = 50 MHz
C	Capacitance	RF400 RF401		10 7.0		pF pF	V_R = 4.0 V, f = 1 MHz V_R = 4.0 V f = 1 MHz
$C_{0.1}/C_4$	Capacitance Ratio		2.0				V_R = 0.1V ($C_{0.1}$), V_R = 4.0 V (C_4), f = 1 MHz
C_3/C_{20}	Capacitance Ratio		2.0				V_R = 3.0 V (C_3), V_R = 20 V (C_{20}), f = 1 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D8.

RF500

DUAL FM VARACTOR

DIFFUSED SILICON PLANAR DIODE

- **C. . .38–42 pF**
- **Q. . . 125 (MIN)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

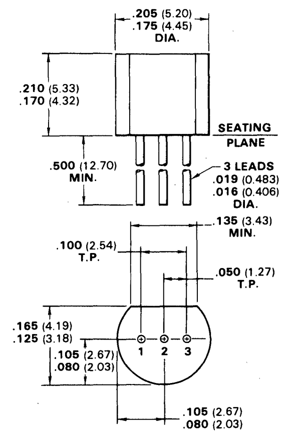
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	280 mW
Linear Power Derating Factor	2.24 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	30 V
I_F	Continuous Forward Current	200 mA

TO-92 OUTLINE



NOTES:
Copper leads, tin plated
Transfer moulded thermosetting plastic package
Package weight is 0.25 gram
Pins 1 and 3 are anode conections and pin 2 is common cathode connection

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	35			V	$I_R = 10\ \mu A$
I_R	Reverse Current		5.0 50	50 500	nA nA	$V_R = 30$ V $V_R = 30$ V, $T_A = 60°C$
C	Capacitance	38	40	42	pF	$V_R = 3$ V, f = 1 MHz
C3/C30	Capacitance Ratio	2.5	2.65	2.8		$V_R = 3/30$ V, f = 1 MHz
L_S	Series Inductance		6.0		nH	f = 250 MHz, 1.5 m/m leads
R_D	Dynamic Resistance		0.2	0.4	Ω	V_R @ 38 pF, f = 100 MHz
C_C	Case Capacitance		0.18		pF	f = 1 MHz, 1.5 m/m leads
TC_C	Capacitance Temperature Coefficient		280	400	ppm/°C	
Q	Figure of Merit	125	150			$V_R = 3$ V, f = 100 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factor should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D9.

ZPD3,3 – ZPD33

500 mW SILICON ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)

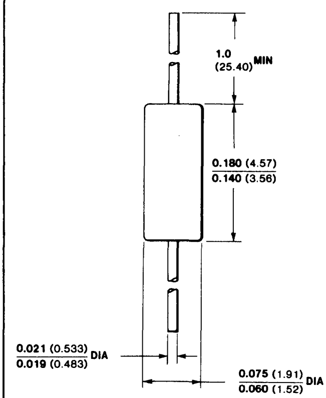
Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.3 mW/°C

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise listed)

SYMBOL	V_Z			Z_Z		V_R	I_{ZM}		TC	
Characteristic	Zener Voltage @I_Z = 5 mA			Max Zener I_Z = 5 mA f = 1 kHz	Impedance I_Z = 1 mA f = 1 kHz	Minimum Reverse Voltage @I_R = 100 nA	Maximum Zener Current		Temperature Coefficient of V_Z	
	MIN	NOM	MAX				25°C	45°C	MIN	MAX
UNIT	V	V	V	Ω	Ω	V	mA	mA	%/°C	%/°C
ZPD3,3	3.1	3.3	3.5	90	500	—	130	109	−0.080	−0.030
ZPD3,6	3.4	3.6	3.8	90	500	—	120	101	−0.080	−0.030
ZPD3,9	3.7	3.9	4.1	90	500	—	110	92	−0.070	−0.030
ZPD4,3	4.0	4.3	4.6	90	500	—	100	85	−0.060	−0.010
ZPD4,7	4.4	4.7	5.0	78	500	—	90	76	−0.050	+0.020
ZPD5,1	4.8	5.1	5.4	60	480	0.8	80	67	−0.030	+0.040
ZPD5,6	5.2	5.6	6.0	40	400	1.0	70	59	−0.020	+0.060
ZPD6,2	5.8	6.2	6.6	10	200	2.0	64	54	−0.010	+0.070
ZPD6,8	6.4	6.8	7.2	8.0	150	3.0	58	49	+0.020	+0.070
ZPD7,5	7.0	7.5	7.9	7.0	50	5.0	53	44	+0.030	+0.070
ZPD8,2	7.7	8.2	8.7	7.0	50	6.0	47	40	+0.040	+0.070
ZPD9,1	8.5	9.1	9.6	10	50	7.0	43	36	+0.050	+0.080
ZPD10	9.4	10.0	10.6	15	70	7.5	40	33	+0.050	+0.080
ZPD11	10.4	11.0	11.6	20	70	8.5	36	30	+0.050	+0.090
ZPD12	11.4	12.0	12.7	20	90	9.0	32	28	+0.060	+0.090
ZPD13	12.4	13.0	14.1	25	110	10.0	29	25	+0.070	+0.090

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F = 1.0 V (max) @I_F = 100 mA for all types.
4. For product family characteristic curves, refer to Chapter 4, D13.

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise listed)

SYMBOL	V_Z			Z_Z		V_R	I_{ZM}		TC	
Characteristic	Zener Voltage @I_Z = 5 mA			Max Zener I_Z = 5 mA f = 1 kHz	Impedance I_Z = 1 mA f = 1 kHz	Minimum Reverse Voltage @I_R = 100 nA	Maximum Zener Current		Temperature Coefficient of V_Z	
	MIN	NOM	MAX				25°C	45°C	MIN	MAX
UNIT	V	V	V	Ω	Ω	V	mA	mA	%/°C	%/°C
ZPD15	13.8	15.0	15.6	30	110	11.0	27	23	+0.070	+0.090
ZPD16	15.3	16.0	17.1	40	170	12.0	24	20	+0.080	+0.095
ZPD18	16.8	18.0	19.1	50	170	14.0	21	18	+0.080	+0.095
ZPD20	18.8	20.0	21.2	50	220	15.0	20	17	+0.080	+0.100
ZPD22	20.8	22.0	23.3	55	220	17.0	18	16	+0.080	+0.100
ZPD24	22.8	24.0	25.6	80	220	18.0	16	13	+0.080	+0.100
ZPD27	25.1	27.0	28.9	80	250	20.0	14	12	+0.080	+0.100
ZPD30	28.0	30.0	32.0	80	250	22.5	13	10	+0.080	+0.100
ZPD33	31.0	33.0	35.0	80	250	25.0	12	9	+0.080	+0.100

1N456/A • 1N457/A • 1N458/A • 1N459/A

LOW LEAKAGE DIODES

DIFFUSED SILICON PLANAR

- I_R...25 nA (MAX) @ WIV
- C...6.0 pF (MAX)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

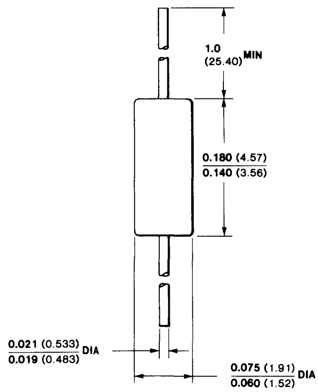
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (From 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**1N456/A**	**1N457/A**	**1N458/A**	**1N459/A**
WIV	Working Inverse Voltage	25 V	60 V	125 V	175 V
I_O	Average Rectified Current				200 mA
I_F	Continuous Forward Current				500 mA
i_f	Peak Repetitive Forward Current				600 mA
$i_{f(surge)}$	Peak Forward Surge Current				
	Pulse Width = 1 μs				4.0 A
	Pulse Width = 1 s				1.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	1N456A/7A/8A/9A		1.0	V	I_F = 100 mA
		1N456		1.0	V	I_F = 40 mA
		1N457		1.0	V	I_F = 20 mA
		1N458		1.0	V	I_F = 7 mA
		1N459		1.0	V	I_F = 3 mA
I_R	Reverse Current			25	nA	V_R = Rated WIV
				5.0	μA	V_R = Rated WIV, T_A = 150°C
BV	Breakdown Voltage	1N456/A	30		V	I_R = 100 μA
		1N457/A	70		V	I_R = 100 μA
		1N458/A	150		V	I_R = 100 μA
		1N459/A	200		V	I_R = 100 μA
C	Capacitance			6.0	pF	V_R = 0, f = 1 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D2.

IN461A • IN462A • IN463A • IN464A

GENERAL PURPOSE, HIGH CONDUCTANCE DIODES

DIFFUSED SILICON PLANAR

- **V_F . . . 1.0 V (MAX) @ 100 mA**
- **I_R . . . 500 nA (MAX) @ WIV**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

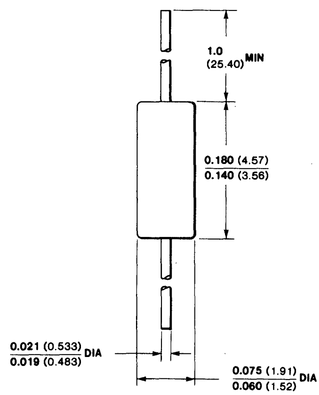
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**IN461A**	**IN462A**	**IN463A**	**IN464A**
WIV	Working Inverse Voltage	25 V	60 V	175 V	125 V
I_O	Average Rectified Current	200 mA	200 mA	200 mA	200 mA
I_F	Continuous Forward Current	500 mA	500 mA	500 mA	500 mA
i_f	Peak Repetitive Forward Current	600 mA	600 mA	600 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current				
	Pulse Width = 1 s	1.0 A	1.0 A	1.0 A	1.0 A
	Pulse Width = 1 μs	4.0 A	4.0 A	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage			1.0	V	I_f = 100 mA
I_R	Reverse Current			500	nA	V_R = Rated WIV
				30	μA	V_R = Rated WIV, T_A = 150°C
BV	Breakdown Voltage	IN461A	30		V	I_R = 100 μA
		IN462A	70		V	I_R = 100 μA
		IN463A	200		V	I_R = 100 μA
		IN464A	150		V	I_R = 100 μA

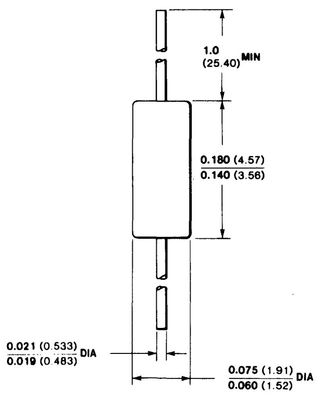
NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D2.

1N482B • 1N483B • 1N484B • 1N485B • 1N486B

GENERAL PURPOSE, LOW LEAKAGE DIODES

DIFFUSED SILICON PLANAR

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

- **V_F . . . 1.0 V (MAX) @ 100 mA**
- **I_R . . . 25 nA (MAX) @ WIV**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature (from 25°C)	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**IN482B**	**IN483B**	**IN484B**	**IN485B**	**IN486B**
WIV	Working Inverse Voltage	36 V	70 V	130 V	180 V	225 V
I_O	Average Rectified Current					200 mA
I_F	Continuous Forward Current					500 mA
i_f	Peak Repetitive Forward Current					600 mA
$i_{f(surge)}$	Peak Forward Surge Current					
	Pulse Width = 1 s					1.0
	Pulse Width = 1 μs					4.0

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage			1.0	V	I_F = 100 mA
I_R	Reverse Current	1N482B − 1N485B		25	nA	V_R = Rated WIV
				5.0	μA	V_R = Rated WIV, T_A = 150°C
		1N486B		50	nA	V_R = 225 V
				10	μA	V_R = 225 V, T_A = 150°C
BV	Breakdown Voltage	1N482B	40		V	I_R = 100 μA
		1N483B	80		V	I_R = 100 μA
		1N484B	150		V	I_R = 100 μA
		1N485B	200		V	I_R = 100 μA
		1N486B	250		V	I_R = 100 μA

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D2.

1N625 through 1N629

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- **V_F . . . 1.5 V (MAX) @ 4.0 mA**
- **I_R . . . 1.0 μA (MAX) @ WIV**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

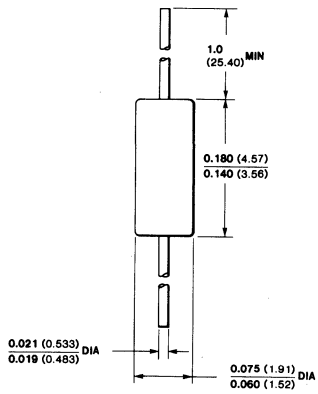
Storage Temperature Range	−65°C to +200°C
Maximum Operating Junction Temperature	175°C
Lead Temperatures	260°C

Power Dissipation (Notes 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**1N625**	**1N626**	**1N627**	**1N628**	**1N629**
WIV	Working Inverse Voltage	20 V	35 V	75 V	125 V	175 V
I_O	Average Rectified Current	175 mA	175 mA	175 mA	175 mA	175 mA
I_F	Forward Current Steady State	400 mA	400 mA	400 mA	400 mA	400 mA
$i_{f(surge)}$	Peak Forward Surge Current					
	Pulse Width = 1.0 s	1.0 A	1.0 A	1.0 A	1.0 A	1.0 A
	Pulse Width = 1.0 μs	4.0 A	4.0 A	4.0 A	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage			1.5	V	I_F = 4.0 mA
I_R	Reverse Current			1.0	μA	V_R = rated WIV
				30	μA	V_R = rated WIV, T_A = 100°C
BV	Breakdown Voltage	1N625	30		V	I_R = 100 μA
		1N626	50		V	I_R = 100 μA
		1N627	100		V	I_R = 100 μA
		1N628	150		V	I_R = 100 μA
		1N629	200		V	I_R = 100 μA
t_{rr}	Reverse Recovery Time			1.0	μs	I_f = 30 mA, V_r = 35 V, Recovery to 400 kΩ

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For product family characteristic curves, refer to Chapter 4, D1.

1N658

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR EPITAXIAL

- **BV . . . 120 V (MIN) @ 100 μA**
- **V_F . . . 1.0 V (MAX) @ 100 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Operating Junction Temperature	+175°C
Lead Temperature	+200°C

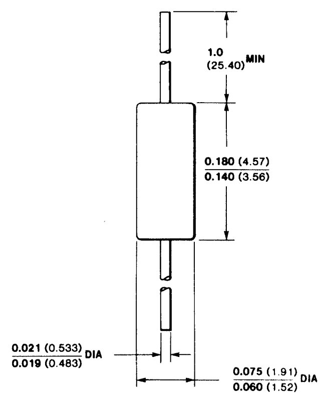
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	100 V
I_O	Average Rectified Current	200 mA
I_F	Forward Current Steady State	500 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		1.0	V	I_F = 100 mA
I_R	Reverse Current		50 25	nA μA	V_r = 50 V V_R = 50 V, T_A = 150°C
BV	Breakdown Voltage	120		V	I_R = 100 μA
t_{rr}	Reverse Recovery Time		300	ns	V_R = 40 V, I_f = 5.0 mA, R_L = 2.0 kΩ, C_L = 10 pF, Recovery to 80 kΩ

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For product family characteristic curves, refer to Chapter 4, D1.

1N659 • 1N660 • 1N661

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- **V_F . . . 1.0 V (MAX) @ 6.0 mA**
- **t_{rr} . . .300 ns (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

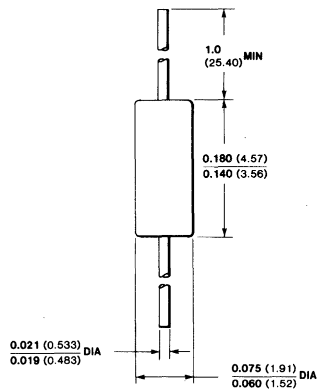
Storage Temperature Range	−65°C to +200°C
Maximum Operating Junction Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Notes 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents		**1N659**	**1N660**	**1N661**
WIV	Working Inverse Voltage	50 V	100 V	200 V
I_O	Average Rectified Current	200 mA	200 mA	200 mA
I_F	Forward Current Steady State	500 mA	500 mA	500 mA
$i_{f(surge)}$	Peak Forward Surge Current			
	Pulse Width = 1.0 s	1.0 A	1.0 A	1.0 A
	Pulse Width = 1.0 μs	4.0 A	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	1N659 MIN	1N659 MAX	1N660 MIN	1N660 MAX	1N661 MIN	1N661 MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		1.0		1.0		1.0	V	I_F = 6.0 mA
I_R	Reverse Current		5.0					μA	V_R = 50 V
					5.0			μA	V_R = 100 V
							10	μA	V_R = 200 V
			25					μA	V_R = 50 V, T_A = 100°C
					50			μA	V_R = 100 V, T_A = 100°C
							100	μA	V_R = 200 V, T_A = 100°C
BV	Breakdown Voltage	60		120		240		V	I_R = 100 μA
t_{rr}	Reverse Recovery Time		300		300		300	ns	V_r = 35 V, I_f = 30 mA, R_L = 2.0 kΩ, C_L = 10 pF, Recovery to 400 kΩ

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. For product family characteristic curves, refer to Chapter 4, D4 for 1N659, 4, D1 for 1N660 and 1N661.

1N746 – 1N759

500 mW SILICON ZENER DIODES

3

ABSOLUTE MAXIMUM RATINGS (Note 1)

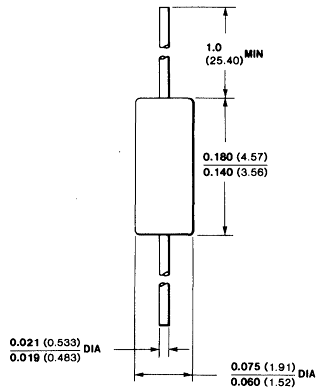
Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise noted)

SYMBOL	Z_Z	V_Z	I_R		TC
CHARACTERISTIC	Maximum Zener Impedance (Note 4) (I_Z = 20 mA)	Nominal Zener Voltage (Note 3) (I_Z = 20 mA)	Maximum Reverse Current (V_R = 1.0V) @25°C	@150°C	Typical Temperature Coefficient of V_Z
UNIT	Ω	V	μA	μA	%/°C
IN746	28.0	3.3	10.0	30.0	−0.070
IN747	24.0	3.6	10.0	30.0	−0.065
IN748	23.0	3.9	10.0	30.0	−0.060
IN749	22.0	4.3	2.0	30.0	−0.055
IN750	19.0	4.7	2.0	30.0	−0.043
IN751	17.0	5.1	1.0	20.0	±0.030
IN752	11.0	5.6	1.0	20.0	±0.028
IN753	7.0	6.2	0.1	20.0	+0.045
IN754	5.0	6.8	0.1	20.0	+0.050
IN755	6.0	7.5	0.1	20.0	+0.058
IN756	8.0	8.2	0.1	20.0	+0.062
IN757	10.0	9.1	0.1	20.0	+0.068
IN758	17.0	10.0	0.1	20.0	+0.075
IN759	30.0	12.0	0.1	20.0	+0.077

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Type numbers without suffix have ±10% tolerance on nominal V_Z.
   Type numbers with suffix A have ±5% tolerance on nominal V_Z.
4. The Zener impedance Z_Z is derived by superimposing a 60 Hz 2 mA (rms) signal on the 20 mA I_Z test current.
5. For product family characteristic curves, refer to Chapter 4, D13.

1N914/A/B• 1N916/A/B• 1N4148/9• 1N4446-1N4449

HIGH CONDUCTANCE ULTRA FAST SWITCHING DIODES

DIFFUSED SILICON PLANAR

- **t_{rr} . . . 4.0 ns (MAX)**
- **BV . . . 100 V (MIN)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65° to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C

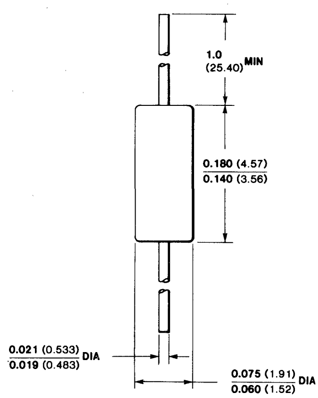
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	75 V
I_O	Average Rectified Current	200 mA
I_f	DC Forward Current	300 mA
i_f	Recurrent Peak Forward Current	400 mA
i_f(surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage		100		V	I_R = 100 μA
			75		V	I_R = 5.0 μA
I_R	Reverse Current			25	nA	V_R = 20 V
				50	μA	V_R = 20 V, T_A = 150°C
				5.0	μA	V_R = 75 V
V_F	Forward Voltage	1N914B, 1N4448	0.62	0.72	V	I_F = 5.0 mA
		1N916B, 1N4449	0.63	0.73	V	I_F = 5.0 mA
		1N914, 1N916 1N4148, 1N4149		1.0	V	I_F = 10 mA
		1N914A, 1N916A 1N4446, 1N4447		1.0	V	I_F = 20 mA
		1N916B, 1N4449		1.0	V	I_F = 30 mA
		1N914B, 1N4448		1.0	V	I_F = 100 mA
t_{rr}	Reverse Recovery Time			4.0	ns	I_f = 10 mA, V_r = 6.0 V, R_L = 100 Ω Rec. to 1.0 mA
C	Capacitance	1N914, 1N914A 1N914B, 1N4148 1N4446, 1N4447		4.0	pF	V_R = 0, f = 1 MHz
		1N916, 1N916A 1N916B, 1N4149 1N4448, 1N4449		2.0	pF	V_R = 0, f = 1 MHz
V_{fr}	Peak Forward Recovery Voltage	1N914, 1N916 1N914B, 1N916B 1N4448, 1N4449		2.5	V	50 mA Peak Square Wave, 0.1 μs pulse width, 5 kHz - 100 kHz rep. rate
RE	Rectification Efficiency	1N914A, 1N914B 1N916A, 1N916B	45		%	2.0 V rms, f = 100 MHz

NOTES:
1. Maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For family characteristic curves, refer to Chapter 4, D4.

1N957 - 1N973

500 mW SILICON PLANAR ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)

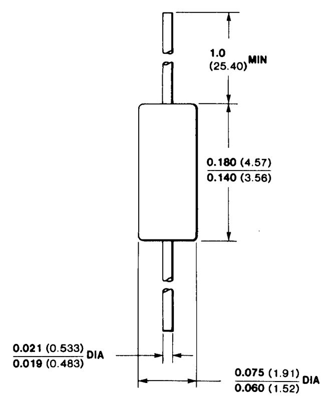
Temperatures

Storage Temperture Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	V_Z	Z_Z	I_{ZT}	Z_{ZK}	I_{ZK}	I_R	V_{RT}			TC	I_{ZM}
CHARAC-TERISTICS	Nominal Zener Voltage (Note 3) @I_{ZT}	Maximum Zener Impedance (Note 4) @I_{ZT}	Test Current	Maximum Zener Knee Impedance (Note 4) @I_{ZK}	Test Current	Maximum Reverse Current @V_{RT}	Test Voltage ±20% V_Z Tolerance	±10% V_Z Tolerance	±5% V_Z Tolerance	Typical Temperature Coefficient of V_Z	Maximum Zener Current (Note 5)
UNIT	V	Ω	mA	Ω	mA	μA	V	V	V	%/°C	mA
IN957	6.8	4.5	18.5	700	1.0	150	4.4	4.9	5.2	+0.050	47
IN958	7.5	5.5	16.5	700	0.5	75	4.8	5.4	5.7	+0.058	42
IN959	8.2	6.5	15.0	700	0.5	50	5.2	5.9	6.2	+0.062	38
IN960	9.1	7.5	14.0	700	0.5	25	5.8	6.6	6.9	+0.068	35
IN961	10.0	8.5	12.5	700	0.25	10	6.4	7.2	7.6	+0.072	32
IN962	11.0	9.5	11.5	700	0.25	5.0	7.0	8.0	8.4	+0.073	28
IN963	12.0	11.5	10.5	700	0.25	5.0	7.6	8.6	9.1	+0.076	26
IN964	13.0	13.0	9.5	700	0.25	5.0	8.3	9.4	9.9	+0.079	24
IN965	15.0	16.0	8.5	700	0.25	5.0	9.6	10.8	11.4	+0.082	21
IN966	16.0	17.0	7.8	700	0.25	5.0	10.2	11.5	12.2	+0.083	19
IN967	18.0	21.0	7.0	750	0.25	5.0	11.5	13.0	13.7	+0.085	17
IN968	20.0	25.0	6.2	750	0.25	5.0	12.8	14.4	15.2	+0.086	15
IN969	22.0	29.0	5.6	750	0.25	5.0	14.0	15.8	16.7	+0.087	14
IN970	24.0	33.0	5.2	750	0.25	5.0	15.4	17.3	18.2	+0.088	13
IN971	27.0	41.0	4.6	750	0.25	5.0	17.2	19.4	20.6	+0.090	11
IN972	30.0	49.0	4.2	1000	0.25	5.0	19.2	21.6	22.8	+0.091	10
IN973	33.0	58.0	3.8	1000	0.25	5.0	21.1	23.8	25.1	±0.092	9.2

NOTES:

1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Type numbers without suffix have ±20% tolerance on nominal V_Z.
   Type numbers with suffix A have ±10% tolerance on nominal V_Z.
   Type numbers with suffix B have ±5% tolerance on nominal V_Z.
4. The Zener impedances Z_Z and Z_{ZK} are derived by superimposing a 60 Hz signal on test currents I_{ZT} and I_{ZK}, having an RMS value of 10% of the d.c. value of I_{ZT} and I_{ZK} respectively.
5. Maximum Zener Curent (I_{ZM}) is based on the maximum Zener voltage of a 20% tolerance unit.
6. For product family characteristic curves, refer to Chapter 4, D13.

1N3064 • 1N4305 • 1N4454

ULTRA FAST LOW CAPACITANCE DIODES

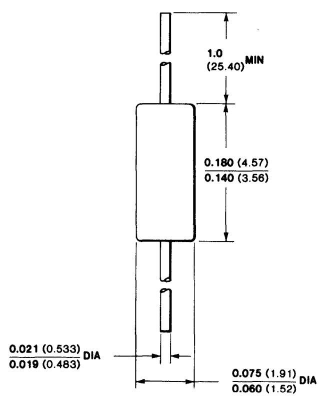
DIFFUSED SILICON PLANAR

- **C...2.0 pF @ V_R = 0, f = 1.0 MHz**
- **t_{rr}...4.0 ns @ I_f = 10 mA, I_r = 10 mA, V_r = 1.0 V**
- **BV...75 V (MIN)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures	
Storage Temperature Range	−65°C to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C
Power Dissipation (Note 2)	
Maximum Total Dissipation at 25°C	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C
Maximum Voltages and Currents	
WIV Working Inverse Voltage	50 V
I_O Average Rectified Current	100 mA
I_F Forward Current Steady State	300 mA
i_f Recurrent Peak Forward Current	400 mA
i_f (surge) Peak Forward Surge Current	
Pulse Width = 1.0 s	1.0 A
Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.610	0.710	V	I_F = 2.0 mA
		0.550	0.650	V	I_F = 1.0 mA
		0.505	0.575	V	I_F = 250 μA
	1N3064, 1N4454		1.0	V	I_F = 10 mA
	1N4305	0.70	0.85	V	I_F = 10 mA
I_R	Reverse Current		0.1	μA	V_R = 50 V
			100	μA	V_R = 50 V, T_A = 150°C
BV	Breakdown Voltage	75		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time (Note 3) 1N4305		2.0	ns	I_f = 10 mA, V_r = 6.0 V, R_L = 100 Ω
	1N3064, 1N4305, 1N4454		4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100 Ω, V_r = 1.0 V
C	Capacitance		2.0	pF	V_R = 0, f = 1.0 MHz
RE	Rectification Efficiency (Note 4)	45		%	f = 1.0 MHz
$\Delta V_F/°C$	Forward Voltage Temperature Coefficient (Note 5)		3.0	mV/°C	

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 1.0 mA.
4. Rectification efficiency is defined as the ratio of dc load voltage to peak rf input voltage to the detector circuit, measured with 2.0 V rms input to the circuit. Load resistance 5.0 Ω, load capacitance 20 pF
5. This value for $\Delta V_F/°C$ is a typical value not a minimum or maximum.
6. For product family characteristic curves, refer to Chapter 4, D4.

1N3070 • 1N4938

HIGH SPEED HIGH CONDUCTANCE DIODES

DIFFUSED SILICON PLANAR

3

- **BV. . . 200 V (MIN)**
- **I_R. . . 100 nA (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C

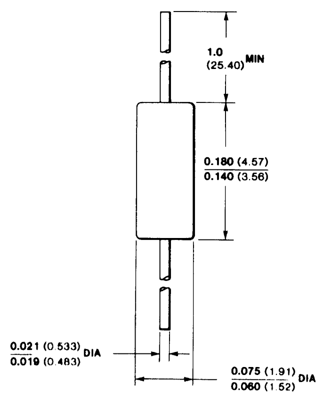
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	175 V
I_O	Average Rectified Current	200 mA
I_F	Forward Current Steady State DC	500 mA
i_f	Recurrent Peak Forward Current	600 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
I_R	Reverse Current		100 100	nA μA	V_R = 175 V V_R = 175 V, T_A = 150°C
BV	Breakdown Voltage	200		V	I_R = 100 μA
V_F	Forward Voltage		1.0	V	I_F = 100 mA
C	Capacitance		5.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time (Note 3)		50	ns	$I_f = I_r$ = 30 mA, R_L = 100 Ω
RE	Rectification Efficiency (Note 4)	35		%	f = 100 MHz

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 1.0 mA.
4. Rectification efficiency is defined as the ratio of dc load voltage to peak rf input voltage to the detector circuit, measured with 2.0 V rms input to the circuit. Load resistance: 5.0 kΩ, load capacitance 20 pF.
5. 1N3070 and IN4938 are electrically and mechanically identical.
6. For product family characteristic curves, refer to Chapter 4, D1.

1N3595 • IN6099

HIGH CONDUCTANCE LOW LEAKAGE DIODES

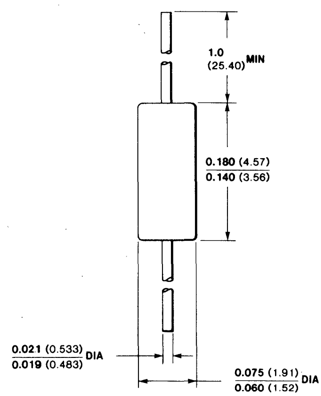
DIFFUSED SILICON PLANAR

- **BV...150 V (MIN) @ 100 μA**
- **V_F...1.0 V @ 200 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures		
Storage Temperature Range		−65°C to +200°C
Max Junction Operating Temperature		+175°C
Lead Temperature		+260°C
Power Dissipation (Note 2)		
Maximum Total Dissipation at 25°C Ambient		500 mW
Linear Derating Factor (From 25°C)		3.33 mW/°C
Maximum Voltage and Currents		
WIV	Working Inverse Voltage	125 V
I_O	Average Rectified Current	200 mA
I_F	Forward Current Steady State	500 mA
i_f	Peak Repetitive Forward Current	600 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.83	1.0	V	I_F = 200 mA
		0.79	0.92	V	I_F = 100 mA
		0.75	0.88	V	I_F = 50 mA
		0.65	0.80	V	I_F = 10 mA
		0.60	0.75	V	I_F = 5.0 mA
		0.52	0.68	V	I_F = 1.0 mA
I_R	Reverse Current		1.0	nA	V_R = 125 V
			300	nA	V_R = 30 V, T_A = 125°C
			500	nA	V_R = 125 V, T_A = 125°C
			3.0	μA	V_R = 125 V, T_A = 150°C
t_{rr}	Reverse Recovery Time		3.0	μs	I_F = 10 mA, V_r = 3.5 V, R_L = 1.0 kΩ
C	Capacitance		8.0	pF	V_R = 0, f = 1.0 MHz
BV	Breakdown Voltage	150		V	I_R = 100 μA

NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. 1N3595 and IN6099 are electrically and mechanically identical.
4. For product family characteristic curves, refer to Chapter 4, D2.

1N3600 • 1N4150 • 1N4450

HIGH CONDUCTANCE ULTRA FAST DIODES

DIFFUSED SILICON PLANAR EPITAXIAL

- **t_{rr} . . . 4.0 ns (MAX)**
- **V_F . . . 1.0 V (MAX) @ 200 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

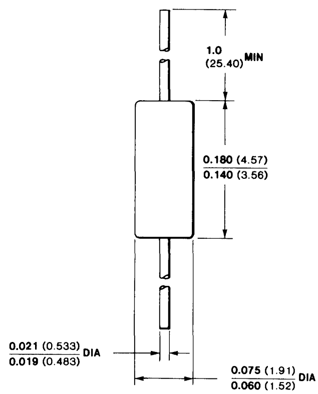
Storage Temperature Range	−65°C to +200°C
Max Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Max Total Power Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltages and Currents		**1N3600**	**1N4150**	**1N4450**
WIV	Working Inverse Voltage	50 V	50 V	30 V
I_O	Average Rectified Current	200 mA	200 mA	200 mA
I_F	DC Forward Current	400 mA	400 mA	400 mA
i_f	Recurrent Peak Forward Current	600 mA	600 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current			
	Pulse Width = 1.0 s	1.0 A	1.0 A	1.0 A
	Pulse Width = 1.0 µs	4.0 A	4.0 A	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	1N3600 1N4150 MIN	1N3600 1N4150 MAX	1N4450 MIN	1N4450 MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	75				V	I_R = 5.0 µA
				40		V	I_R = 5.0 µA
I_R	Reverse Current		100			nA	V_R = 50 V
					50	nA	V_R = 30 V
			100			µA	V_R = 50 V, T_A = 150°C
					50	µA	V_R = 30 V, T_A = 150°C
V_F	Forward Voltage			0.42	0.54	V	I_F = 0.1 mA
		0.54	0.62	0.52	0.64	V	I_F = 1.0 mA
		0.66	0.74	0.64	0.76	V	I_F = 10 mA
		0.76	0.86			V	I_F = 50 mA
		0.82	0.92	0.80	0.92	V	I_F = 100 mA
		0.87	1.0		1.0	V	I_F = 200 mA
C	Capacitance		2.5		4.0	pF	V_R = 0, f = 1.0 MHz
t_{rr}	Reverse Recovery Time (Note 3)		4.0			ns	$I_f = I_r$ = 10 mA to 200 mA, R_L = 100 Ω
					4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100 Ω
			6.0			ns	$I_f = I_r$ = 200 mA to 400 mA, R_L = 100 Ω
t_{fr}	Forward Recovery Time		10			ns	I_f = 200 mA, t_r = 0.4 ns, V_{fr} = 1.0 V

NOTES:
1. Maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 0.1 I_f.
4. For family characteristic curves, refer to Chapter 4, D4.

1N4001 • 1N4007

1 A SILICON RECTIFIERS

- **GLASS PACKAGE**
- **1000 V RATING (1N4007)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

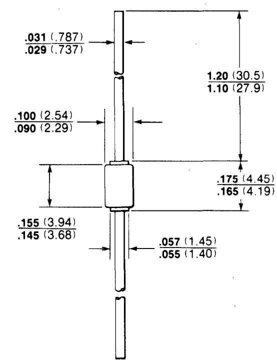
Temperatures

Storage Temperature Range	−65°C to +175°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Maximum Voltages and Currents

V_{RRM}	Peak Repetitive Reverse Voltage	1N4001	50 V
V_{RWM}	Working Peak Reverse Voltage	1N4002	100 V
V_R	DC Blocking Voltage	1N4003	200 V
		1N4004	400 V
		1N4005	600 V
		1N4006	800 V
		1N4007	1000 V
		1N4001	35 V
		1N4002	70 V
		1N4003	140 V
$V_{R(rms)}$	rms Reverse Voltage	1N4004	280 V
		1N4005	420 V
		1N4006	560 V
		1N4007	700 V
I_O	Average Rectified Forward Current (Note 2)		1 A
I_{FSM}	Peak Forward Surge Current		30 A

DO-41 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.30 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.95	1.10	V	I_O = 1.0 A, T_A = 75°C
$V_{F(AV)}$	Average Forward Voltage	0.75	0.80	V	I_F = 1 A
V_{FM}	Peak Forward Voltage	1.40	1.60	V	I_O = 1.0 A
I_R	Reverse Current	0.05 0.5	10.0 50	μA μA	Rated dc Voltage Rated dc Voltage, T_A = 100°C
$I_{R(AV)}$	Average Reverse Current	1.0	30	μA	Rated V_R, I_O = 1.0 A
t_{rr}	Reverse Recovery Time (Note 3)	1.0		μs	I_f = 1.0 A, V_r = 30 V

NOTES:
1. These are limiting values above which the serviceability of the rectifier may be impaired.
2. Derate Linearly above T_A = 75°C (Note 3).
3. For product family characteristic curves and test circuit, refer to Chapter 4, D16.

1N4009

ULTRA HIGH SPEED DIODE

DIFFUSED SILICON PLANAR

- **t_{rr}...2 ns (MAX)**
- **BV...35 V (MIN) @ 5 μA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

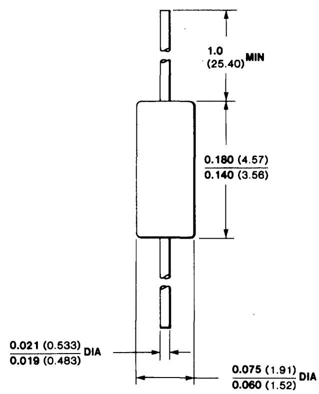
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.33 mW/°C

Maximum Voltage and Current

WIV	Working Inverse Voltage	25 V
I_O	Average Rectified Current	100 mA
I_F	Continuous Forward Current	300 mA
i_f	Peak Repetitive Forward Current	400 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1 s	1.0 A
	Pulse Width = 1 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		1.0	V	I_F = 30 mA
I_R	Reverse Current		0.1 100	μA μA	V_R = 25 V V_R = 25 V, T_A = 150°C
BV	Breakdown Voltage	35		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time		4.0 2.0	ns ns	$I_f = I_r$ = 10 mA (Note 3) I_f = 10 mA, V_r = 6.0 V, R_L = 100 Ω
C	Capacitance		4.0	pF	V_R = 0,f = 1.0 MHz

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 1.0 mA.
4. For product family characteristic curves, refer to Chapter 4, D4

1N4099 – 1N4121 · 1N4620 – 1N4627

500 mW SILICON ZENER DIODES

- **250μA TEST CURRENT**
- **MAXIMUM NOISE DENSITY SPECIFIED**

ABSOLUTE MAXIMUM RATINGS (Note 1)

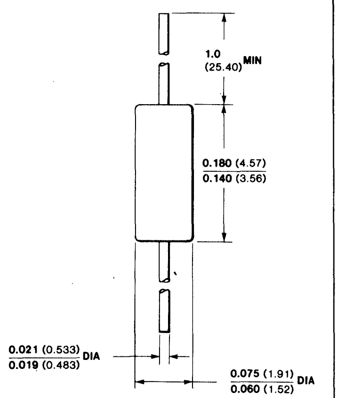
Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	2.85 mW/°C

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (at 25°C Ambient)

SYMBOL	V_Z	Z_Z	I_R	V_{RT}	N_D	I_{ZM}
CHARACTERISTIC	Nominal Zener Voltage @I_Z = 250 μA (Note 3)	Maximum Zener Impedance @I_Z = 250 μA	Maximum Reverse Current @V_{RT}	Test Voltage	Maximum Noise Density @I_Z = 250 μA (Note 5)	Maximum Zener Current (Note 4)
UNIT	V	Ω	μA	V	$\mu V/\sqrt{Hz}$	mA
IN4620	3.3	1650	7.5	1.5	1.0	130
IN4621	3.6	1700	7.5	2.0	1.0	119
IN4622	3.9	1650	5.0	2.0	1.0	110
IN4623	4.3	1600	4.0	2.0	1.0	99
IN4624	4.7	1550	10.0	3.0	1.0	91
IN4625	5.1	1500	10.0	3.0	2.0	84
IN4626	5.6	1400	10.0	4.0	4.0	76
IN4627	6.2	1200	10.0	5.0	5.0	68

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady-state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Tolerance on the nominal Zener voltage is ±5%.
4. Maximum Zener current rating is based on the maximum Zener voltage, taking account of Zener impedance and tolerance.
5. V_F = 1.0 V max at I_F = 200 mA for all types.
6. For product family characteristic curves, refer to Chapter 4, D13.

ELECTRICAL CHARACTERISTICS (at 25°C Ambient)

SYMBOL	V_Z	Z_Z	I_R	V_{RT}	N_D	I_{ZM}
CHARACTERISTICS	Nominal Zener Voltage $@I_Z = 250\ \mu A$ (Note 3)	Maximum Zener Impedance $@I_Z = 250\ \mu A$	Maximum Reverse Current $@V_{RT}$	Test Voltage	Maximum Noise Density $@I_Z = 250\ \mu A$ (Note 5)	Maximum Zener Current (Note 4)
UNIT	V	Ω	μA	V	$\mu V/\sqrt{Hz}$	mA
IN4099	6.8	200	10.0	5.2	40	63
IN4100	7.5	200	10.0	5.7	40	57
IN4101	8.2	200	1.0	6.3	40	52
IN4102	8.7	200	1.0	6.7	40	49
IN4103	9.1	200	1.0	7.0	40	47
IN4104	10.0	200	1.0	7.6	40	42
IN4105	11.0	200	0.05	8.5	40	39
IN4106	12.0	200	0.05	9.2	40	35
IN4107	13.0	200	0.05	9.9	40	32
IN4108	14.0	1650	0.05	10.7	40	31
IN4109	15.0	1700	0.05	11.4	40	28
IN4110	16.0	1650	0.05	12.2	40	26
IN4111	17.0	1600	0.05	13.0	40	25
IN4112	18.0	1550	0.05	13.7	40	23
IN4113	19.0	1500	0.05	14.5	40	22
IN4114	20.0	1400	0.01	15.2	40	21
IN4115	22.0	1200	0.01	16.8	40	19
IN4116	24.0	200	0.01	18.3	40	17
IN4117	25.0	200	0.01	19.0	40	16
IN4118	27.0	200	0.01	20.5	40	15
IN4119	28.0	200	0.01	21.3	40	14
IN4120	30.0	200	0.01	22.8	40	13
IN4121	33.0	200	0.01	25.1	40	13

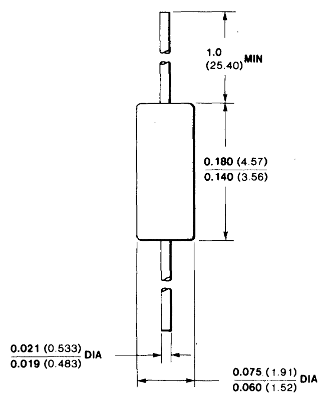
3

1N4151 · 1N4152 · 1N4153 · 1N4154

HIGH SPEED DIODES

SILICON PLANAR EPITAXIAL

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

- **C . . . 4 pF (MAX)**
- **t_{rr} . . . 2 nS (MAX) @ 10 mA, −6 V, 100 Ω.**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	1N4151 50 V	1N4153 50 V
		1N4152 30 V	1N4154 25 V
I_O	Average Rectified Current		100 mA
I_F	Continuous Forward Current		300 mA
i_f	Peak Repetitive Forward Current		400 mA
$i_{f\,(surge)}$	Peak Forward Surge Current		
	Pulse Width = 1 s		1.0 A
	Pulse Width = 1 μs		4.0 A

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	1N4154		1.0	V	I_F = 30 mA
		1N4151		1.0	V	I_F = 50 mA
		1N4152 & 1N4153	0.49	0.55	V	I_F = 0.1 mA
			0.53	0.59	V	I_F = 0.25 mA
			0.59	0.67	V	I_F = 1.0 mA
			0.62	0.70	V	I_F = 2.0 mA
			0.70	0.81	V	I_F = 10 mA
			0.74	0.88	V	I_F = 20 mA
I_R	Reverse Current	1N4154		0.1	μA	V_R = 25 V
				100	μA	V_R = 25 V, T_A = 150°C
		1N4153, 1N4151		0.05	μA	V_R = 50 V
				50	μA	V_R = 50 V, T_A = 150°C
		1N4152		0.05	μA	V_R = 30 V
				50	μA	V_R = 30 V, T_A = 150°C
BV	Breakdown Voltage	1N4154	35		V	I_R = 5.0 μA
		1N4153, 1N4151	75		V	I_R = 5.0 μA
		1N4152	40		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time			4.0	ns	I_f = 10 mA, I_r = 10 mA (Note 3)
				2.0	ns	I_f = 10 mA V_r = −6.0 V, R_L = 100 Ω
C	Capacitance			4.0	pF	V_R = 0, f = 1.0 MHz

NOTES:
1. The maximum ratings are limiting values above which satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted in applications involving pulsed or low duty cycle operation.
3. Recovery to 1.0 mA.
4. For product family characteristic curves, refer to Chapter 4, D4.

1N4306 • 1N4307

PAIR AND QUAD ASSEMBLIES DIODES

OF SILICON PLANAR EPITAXIAL

- ΔV_F . . . 10 mV (MAX)
- C . . . 2.0 pF (MAX)

GENERAL DESCRIPTION
The 1N4306 and 1N4307 are epoxy encapsulated assemblies of two and four glass diodes respectively. They feature tightly matched forward voltages over broad current and temperature ranges.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

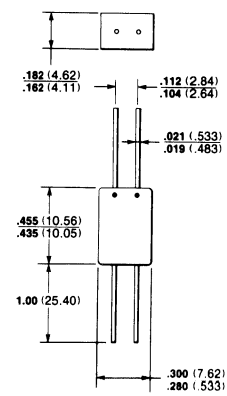
Maximum Total Power Dissipation at 25°C Ambient	
Each Diode	250 mW
Encapsulated Package	500 mW
Linear Derating Factor (from 25°C)	
Each Diode	2.0 mW/°C
Encapsulated Package	4.0 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	50 V
I_O	Average Rectified Current	200 mA
I_F	Continuous Forward Current	300 mA
i_f	Recurrent Peak Forward Current	600 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

PACKAGE OUTLINE 308

1N4306



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 0.95 gram

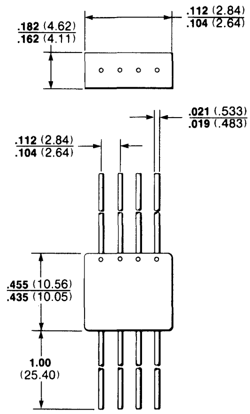
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	75		V	I_R = 5.0 mA
I_R	Reverse Current		50	nA	V_R = 50 V
			50	nA	V_R = 50 V, TA = 150°C
V_F	Forward Voltage	0.75	1.00	V	I_F = 50 mA
		0.67	0.81	V	I_F = 10 mA
		0.56	0.67	V	I_F = 1.0 mA
		0.44	0.55	V	I_F = 100 μA
C	Capacitance		2.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time		4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100Ω Recovery to 1 mA
ΔV_F	Forward Voltage Match (Note 4)		10	mV	I_F = 0.1 to 10 mA T_A = −55°C to +125°C
			20	mV	I_F = 10 to 50 mA T_A = −55°C to +125°C

NOTES:
1. These are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4.
4. For test circuits, refer to Chapter 4, D18.

PACKAGE OUTLINES 310

1N4307



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 1.5 grams

IN4728 – IN4752

1 W SILICON ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)

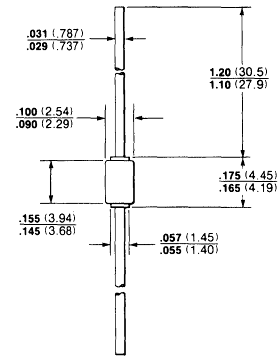
Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Dissipation at 50°C Ambient	1 W
Linear Power Derating Factor (from 50°C)	6.67 mW/°C
Maximum Surge Power (Note 8)	10 W

DO-41 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.30 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	V_Z	Z_Z	I_{ZT}	Z_{ZK}	I_{ZK}	I_R	V_{RT}	I_{ZM}	i_Z (surge)
CHARACTERISTICS	Nominal Zener Voltage (Note 4) @I_{ZT}	Maximum Zener Impedance (Note 5) @I_{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @I_{ZK}	Test Current	Maximum Reverse Current @V_{RT}	Test Voltage	Maximum Zener Current (Note 6)	Maximum Zener Surge Current (Note 3)
UNIT	V	Ω	mA	Ω	mA	μA	V	mA	mA
IN4728	3.3	10.0	76.0	400	1.0	100	1.0	276	1380
IN4729	3.6	10.0	69.0	400	1.0	100	1.0	252	1260
IN4730	3.9	9.0	64.0	400	1.0	50	1.0	234	1190
IN4731	4.3	9.0	58.0	400	1.0	10	1.0	217	1070
IN4732	4.7	8.0	53.0	500	1.0	10	1.0	193	970
IN4733	5.1	7.0	49.0	550	1.0	10	1.0	178	890
IN4734	5.6	5.0	45.0	600	1.0	10	2.0	162	810
IN4735	6.2	2.0	41.0	700	1.0	10	3.0	146	730
IN4736	6.8	3.5	37.0	700	1.0	10	4.0	133	660
IN4737	7.5	4.0	34.0	700	0.5	10	5.0	121	605
IN4738	8.2	4.5	31.0	700	0.5	10	6.0	110	550
IN4739	9.1	5.0	28.0	700	0.5	10	7.0	100	500
IN4740	10.0	7.0	25.0	700	0.25	10	7.6	91	454

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Non-recurrent square wave, PW = 8.3 ms, superimposed on Zener test current, I_{ZT}.
4. Type numbers without suffix have ±10% tolerance on nominal V_Z. Type numbers with suffix A have ±5% tolerance on nominal V_Z.
5. The Zener impedances Z_Z and Z_{ZK} are derived by superimposing a 60 H_Z signal on test currents I_{ZT} and I_{ZK}, having an RMS value of 10% of the d.c. value of I_{ZT} and I_{ZK} respectively.
6. Maximum Zener Current (I_{ZM}) is based on the maximum Zener voltage of a 10% tolerance unit.
7. V_F = 1.2 V (max) @ I_F = 200 mA for all types. Non-recurrent square wave, PW = 8.3 ms, T_A = 55°C.
8. Non-recurrent square wave. PW = 8.3 ms, T_A = 55°C
9. For product family characteristic curves, refer to Chapter 4, D14.

ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	V_Z	Z_Z	I_{ZT}	Z_{ZK}	I_{ZK}	I_R	V_{RT}	I_{ZM}	i_Z (surge)
CHARACTERISTIC	Nominal Zener Voltage (Note 4) @I_{ZT}	Maximum Zener Impedance (Note 5) @I_{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @I_{ZK}	Test Current	Maximum Reverse Current @V_{RT}	Test Voltage	Maximum Zener Current (Note 6)	Maximum Zener Surge Current (Note 3)
UNIT	V	Ω	mA	Ω	mA	μA	V	mA	mA
IN4741	11.0	8.0	23.0	700	0.25	5.0	8.4	83	414
IN4742	12.0	9.0	21.0	700	0.25	5.0	9.1	76	380
IN4743	13.0	10.0	19.0	700	0.25	5.0	9.9	69	344
IN4744	15.0	14.0	17.0	700	0.25	5.0	11.4	61	304
IN4745	16.0	16.0	15.5	700	0.25	5.0	12.2	57	285
IN4746	18.0	20.0	14.0	750	0.25	5.0	13.7	50	250
IN4747	20.0	22.0	12.5	750	0.25	5.0	15.2	45	225
IN4748	22.0	23.0	11.5	750	0.25	5.0	16.7	41	205
IN4749	24.0	25.0	10.5	750	0.25	5.0	18.2	38	190
IN4750	27.0	35.0	9.5	750	0.25	5.0	20.6	34	170
IN4751	30.0	40.0	8.5	1000	0.25	5.0	22.8	30	150
IN4752	33.0	45.0	7.5	1000	0.25	5.0	25.1	27	135

1N4933 – 1N4937

FAST RECOVERY 1 A SILICON RECTIFIERS

- **t_{rr} . . . 200 ns (MAX)**
- **GLASS PACKAGE**

ABSOLUTE MAXIMUM RATINGS

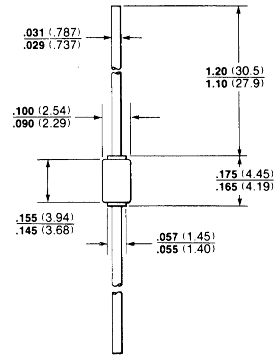
Temperatures

Storage Temperature Range	−65°C to +175°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Maximum Voltages and Currents

V_{RRM}	Peak Repetitive Reverse Voltage	1N4933	50 V
V_{RWM}	Working Peak Reverse Voltage	1N4934	100 V
V_R	DC Blocking Voltage	1N4935	200 V
		1N4936	400 V
		1N4937	600 V
		1N4933	35 V
		1N4934	70 V
$V_{R(rms)}$	rms Reverse Voltage	1N4935	140 V
		1N4936	280 V
		1N4937	420 V
I_O	Average Rectified Forward Current (Note 2)		1 A
I_{FSM}	Peak Forward Surge Current		30 A

DO-41 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.30 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	1.1	1.2	V	I_O = 1.0 A, T_A = 75°C
V_F	Instantaneous Forward Voltage	0.95	1.2	V	I_F = 1 A
I_R	Reverse Current	0.10	5.0	μA	Rated dc Voltage
		1.0	100	μA	Rated dc Voltage, T_A = 100°C
t_{rr}	Reverse Recovery Time (Note 3)	150	200	ns	I_f = 1.0 A, V_r = 30 V
I_{RM}	Reverse Recovery Current (Note 3)	1.5	2.0	A	I_f = 1.0 A, V_r = 30 V

NOTES:
1. These are limiting values above which the serviceability of the rectifier may be impaired.
2. Derate linearly above T_A = 75°C (Note 3).
3. For product family characteristic curves and test circuit, refer to Chapter 4, D17.

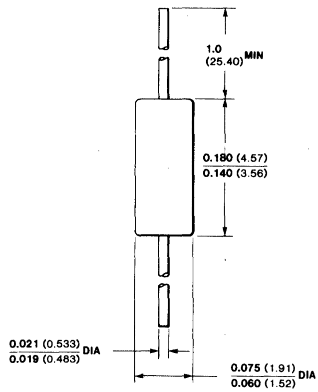
IN5226 • IN5257

500 mW SILICON ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures	
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C
Power Dissipation (Note 2)	
Maximum Total Power Dissipation at 75°C Ambient	500 mW
Linear Power Derating Factor (from 75°C)	4.0 mW/°C
Maximum Surge Power (Note 3)	10 W

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise noted)

SYMBOL	V_Z	Z_Z	I_{ZT}	Z_{ZK}	I_R		V_{RT}		TC
CHARACTERISTIC	Nominal Zener Voltage (Note 4) @I_{ZT}	Maximum Zener Impedance (Note 5) @I_{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @ I_{ZK} = 0.25 mA	Maximum Reverse Current @ V_{RT} ±20% V_ZTolerance	±10, 5, 2, 1% V_ZTolerance	Test Voltage ±20, 10% V_ZTolerance	±5, 2, 1% V_ZTolerance	Maximum Temperature Coefficient of V_Z (Note 6)
UNIT	V	Ω	mA	Ω	μA	μA	V	V	%/°C
IN5226	3.3	28	20	1600	100	25	0.95	1.0	−0.070
IN5227	3.6	24	20	1700	100	15	0.95	1.0	−0.065
IN5228	3.9	23	20	1900	75	10	0.95	1.0	−0.060
IN5229	4.3	22	20	2000	50	5.0	0.95	1.0	±0.055
IN5230	4.7	19	20	1900	50	5.0	1.9	2.0	±0.030
IN5231	5.1	17	20	1600	50	5.0	1.9	2.0	±0.030
IN5232	5.6	11	20	1600	50	5.0	2.9	3.0	+0.038
IN5233	6.0	7.0	20	1600	50	5.0	3.3	3.5	+0.038
IN5234	6.2	7.0	20	1000	50	5.0	3.8	4.0	+0.045
IN5235	6.8	5.0	20	750	30	3.0	4.8	5.0	+0.050
IN5236	7.5	6.0	20	500	30	3.0	5.7	6.0	+0.058
IN5237	8.2	8.0	20	500	30	3.0	6.2	6.5	+0.062
IN5238	8.7	8.0	20	600	30	3.0	6.2	6.5	+0.065
IN5239	9.1	10	20	600	30	3.0	6.7	7.0	+0.068
IN5240	10.0	17	20	600	30	3.0	7.6	8.0	+0.075
IN5241	11.0	22	20	600	30	2.0	8.0	8.4	+0.076

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise noted)

SYMBOL	V_Z	Z_Z	I_{ZT}	Z_{ZK}	I_R		V_{RT}		TC
CHARACTERISTIC	Nominal Zener Voltage (Note 4) @I_{ZT}	Maximum Zener Impedance (Note 5) @I_{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @ I_{ZK} = 0.25 mA	Maximum Reverse Current @ V_{RT} ±20% V_ZTolerance	±10, 5, 2, 1% V_ZTolerance	Test Voltage ±20, 10% V_ZTolerance	±5, 2, 1% V_ZTolerance	Maximum Temperature Coefficient of V_Z (Note 6)
UNIT	V	Ω	mA	Ω	μA	μA	V	V	%/°C
IN5242	12.0	30	20	600	10	1.0	8.7	9.1	+0.077
IN5243	13.0	13	9.5	600	10	0.5	9.4	9.9	+0.079
IN5244	14.0	15	9.0	600	10	0.1	9.5	10.0	+0.082
IN5245	15.0	16	8.5	600	10	0.1	10.5	11.0	+0.082
IN5246	16.0	17	7.8	600	10	0.1	11.4	12.0	+0.083
IN5247	17.0	19	7.4	600	10	0.1	12.4	13.0	+0.084
IN5248	18.0	21	7.0	600	10	0.1	13.3	14.0	+0.085
IN5249	19.0	23	6.6	600	10	0.1	13.3	14.0	+0.086
IN5250	20.0	25	6.2	600	10	0.1	14.3	15.0	+0.086
IN5251	22.0	29	5.6	600	10	0.1	16.2	17.0	+0.087
IN5252	24.0	33	5.2	600	10	0.1	17.1	18.0	+0.088
IN5253	25.0	35	5.0	600	10	0.1	18.1	19.0	+0.089
IN5254	27.0	41	4.6	600	10	0.1	20.0	21.0	+0.090
IN5255	28.0	44	4.5	600	10	0.1	20.0	21.0	+0.091
IN5256	30.0	49	4.2	600	10	0.1	22.0	23.0	+0.091
IN5257	33.0	58	3.8	700	10	0.1	24.0	25.0	+0.092

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Non-recurrent square wave, PW = 8.3 ms, T_A = 55°C.
4. Type numbers without suffix have ±20% tolerance on nominal V_Z.
   Type numbers with suffix A have ±10% tolerance on nominal V_Z.
   Type numbers with suffix B have ±5% tolerance on nominal V_Z.
   Type numbers with suffix C have ±2% tolerance on nominal V_Z.
   Type numbers with suffix D have ±1% tolerance on nominal V_Z.
5. The Zener impedances Z_Z and Z_{ZK} are derived by superimposing a 60 H_Z signal on test currents I_{ZT} and I_{ZK}, having an rms value of 10% of the dc value of I_{ZT} and I_{ZK} respectively.
6. Maximum temperature coefficients apply to 10, 5, 2 and 1% tolerance types only and are measured under the following conditions:
   IN5226A, B, C, D through IN5242A, B, C, D: I_Z = 7.5 mA, T_1 = 25°C, T_2 = 125°C.
   IN5242A, B, C, D through IN5257A, B, C, D: I_Z = I_{ZT}, T_1 = 25°C, T_2 = 125°C.
7. V_F = 1.1V (maximum) @ I_F = 200 mA for all types.
8. For product family characteristic curves, refer to Chapter 4, D13.

3

1N5282

HIGH CONDUCTANCE ULTRA FAST DIODE

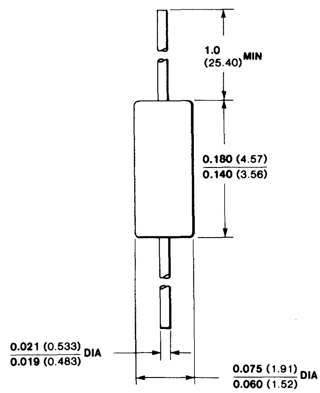
DIFFUSED SILICON PLANAR EPITAXIAL

- **BV. . .80 V (MIN) @ 5.0 μA**
- **C. . .2.5 pF @ V_R = 0 V,f = 1.0 MHz**
- **t_{rr}. . .4.0 ns @ $I_f = I_r$ = 10 mA to 200 mA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures	
Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C
Power Dissipation (Note 2)	
Maximum Total Dissipation at 25° Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C
Maximum Voltage and Currents	
WIV Working Inverse Voltage	55 V
I_O Average Rectified Current	200 mA
I_F Continuous Forward Current	300 mA
$i_{f(surge)}$ Peak Forward Surge Current	
Pulse Width = 1.0 s	1.0 A
Pulse Width = 1.0 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	1.05	1.30	V	I_F = 500 mA
		0.92	1.10	V	I_F = 300 mA
		0.80	0.90	V	I_F = 100 mA
		0.67	0.725	V	I_F = 10 mA
		0.55	0.60	V	I_F = 1.0 mA
		0.45	0.49	V	I_F = 0.1 mA
I_R	Reverse Current		100	nA	V_R = 55 V
			100	μA	V_R = 55 V, T_A = 150°C
BV	Breakdown Voltage	80		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time (Note 3)		4.0	ns	$I_f = I_r$ = 10 mA to 200 mA R_L = 100 Ω
t_{rr}	Reverse Recovery Time		2.0	ns	I_f = 10 mA, V_r = 6.0 V
t_{fr}	Forward Recovery Time		10	ns	I_f = 200 mA (Note 4)
V_{pk}	Peak Forward Voltage		2.0	V	I_f = 500 mA (Note 5)
C	Capacitance		2.5	pF	V_R = 0,f = 1.0 MHz

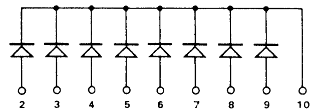
NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady-state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 0.1 I_r.
4. t_r = 0.4 ns, V_{fr} = 1.0 V, pulse width = 100 ns; duty cycle ≤ 1%.
5. t_r = 8.0 ns, pulse width = 1.0 μs; duty cycle ≤ 1%.
6. For product family characteristics curves, refer to Chapter 4, D4.

1N5768 • 1N5770 • 1N5772 • 1N5774

MONOLITHIC AIR ISOLATED DIODE ARRAYS

- **BV . . . 60 V @ 10 μA**
- **I_R . . . 100 nA @ 40 V**
- **V_R . . . 1 V @ 100 mA**

CONNECTION DIAGRAMS



1N5768
Package Outline To-85

3

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Junction Operating Temperature Range	−65°C to +200°C

Maximum Power Dissipation

Maximum Total Dissipation at T_A = 25°C	500 mW
Linear Derating Factor	4.0 mW/°C above 25°C

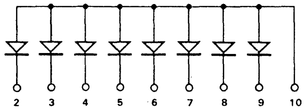
Maximum Currents

I_O	Average Rectified Current (each diode)	300 mA
	Linear Derating Factor	2.4 mA/°C above 25°C
I_{FSM}	Peak Forward Surge Current Pulse Width = 8.3 ms	500 mA

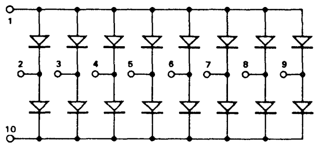
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I_R = 10 μA, Pulse Width = 100 μs, Duty Cycle ≤ 20%
V_F	Forward Voltage		1.0 1.5	V V	I_F = 100 mA I_F = 500 mA, Pulse Width = 300 ns, Duty Cycle = 2%
V_{FX}	Forward Voltage		1.0	V	I_F = 25 mA; I_F = 25 mA for each of the other Diodes in the Test Section (Note 3)
V_{FM}	Peak Forward Voltage		5.0	V	I_F = 500 mA, Pulse Width = 150 ns, Duty Cycle ≤2%
I_R	Reverse Current		100 50	nA μA	V_R = 40 V V_R = 40 V, T_A = +150°C
I_{RX}	Reverse Current		10	μA	V_R = 40 V, I_F = 25 mA for each of the other Diodes in the Test Section (Note 3)
I_{Ri}	Isolation Current 1N5772, 1N5774		0.8	μA	V_R = 40 V (Note 4)
C	Pin-to-Pin Capacitance (Note 2) 1N5768 1N5770, 1N5772, 1N5774		 4.0 8.0	 pF pF	 V_R = 0 V, f = 1.0 MHz V_R = 0 V, f = 1.0 MHz
t_{fr}	Forward Recovery Time (Note 5)		40	ns	I_f = 500 mA, R_S = 10 Ω, V_{fr} = 1.8 V, t_r = 15 ns Max
t_{rr}	Reverse Recovery Time (Note 5)		20	ns	I_f = 200 mA, I_r = 200 mA, R_L = 100 Ω, I_{rr} = 20 mA

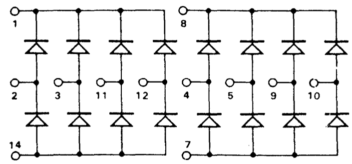
NOTES:
1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. This parameter is the total pin-to-pin capacitance measured across each diode. This does not necessarily represent actual diode capacitance since other diode interconnections can contribute additional capacitance.
3. Each common anode section and/or common cathode section tested separately.
4. The isolation current shall be measured between any two interconnect pins of adjacent parallel sets of diodes with all other pins open circuited.
5. For Product Family characteristic curves and Test Circuits, refer to Chapter 4, D15.



1N5770
Package Outline To-85

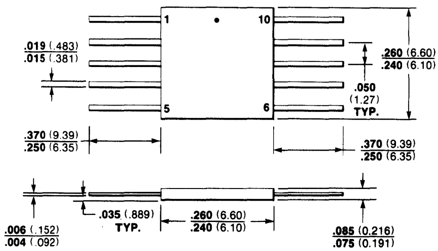


1N5772
Package Outline To-85



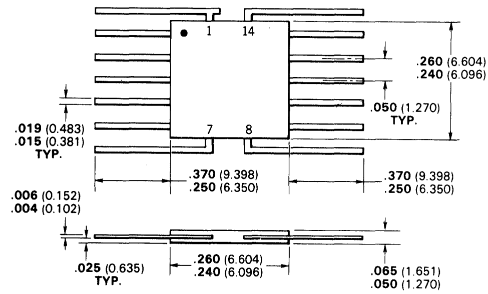
1N5774
Package Outline To-86

TO-85 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.26 gram

TO-86 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.27 gram

1N6100 • 1N6101

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS

- **C . . . 3.0 pF (MAX)**
- **ΔV_F . . . 10 mV (MAX) @ 10 μA**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−55°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

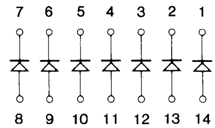
Power Dissipation (Note 2)

Maximum Dissipation per Junction at 25°C Ambient	400 mW
Maximum Dissipation per Package at 25°C Ambient	600 mW
Linear Derating Factor (from 25°C) Junction	2.67 mW/°C
Package	4.0 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	65 V
I_F	Continuous Forward Current	350 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	2.0 A

CONNECTION DIAGRAM



See Package Outlines

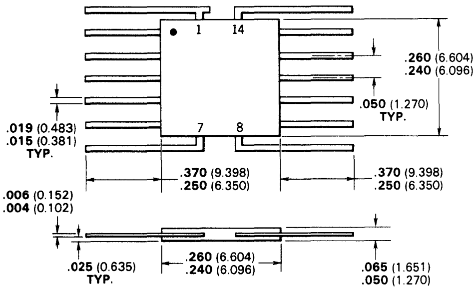
TO-86	1N6100
TO-116-2	1N6101

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	75		V	I_R = 5.0 μA
I_R	Reverse Current (Note 4)		25 50	nA μA	V_R = 20 V V_R = 20 V, T_A = 150°C
V_F	Forward Voltage (Note 3)		1.0	V	I_F = 100 mA
V_{FM}	Peak Forward Voltage		5.0	V	I_F = 100 μA, PW = 100 ns Duty Cycle $\leq$2%
I_{RX}	Reverse Current (Note 5)		10	μA	V_R = 40 V
V_{FX}	Forward Voltage (Note 5)		1.0	V	I_F = 25 mA
C	Capacitance		3.0	pF	V_R = 0, f = 1 MHz
t_{fr}	Forward Recovery Time (Note 6)		15	ns	I_f = 100 mA, R_S = 50 Ω V_{fr} = 1.1 V, $t_r \leq$ 10 ns
t_{rr}	Reverse Recovery Time (Note 6)		5.0	ns	I_f = I_r = 10 mA I_{rr} = 1.0 mA, R_L = 100 Ω
ΔV_F	Forward Voltage Match (Note 6)		10	mV	I_F = 10 mA

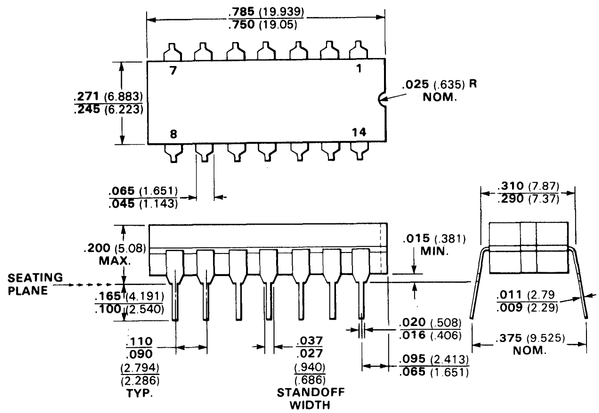
NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See Test circuits (Note 6) for measurement of reverse current of an individual diode.
5. I_F = 25 mA for each of the other diodes in the array.
6. For product family characteristic curves and test circuits, refer to **Chapter** 4, D15.

TO-86 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.27 gram

TO-116-2 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300″ (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020″ (0.508) diameter pin
Package weight is 2.0 grams

1S44

GENERAL PURPOSE SWITCHING DIODE

DIFFUSED SILICON PLANAR

- **BV . . . 50 V (MIN) @ 100 μA**
- **t_{rr} . . . 8.0 ns (MAX)**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

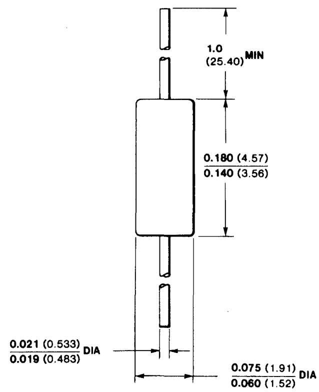
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	40 V
I_O	Average Rectified Current	100 mA
I_F	Continuous Forward Current	300 mA
i_f	Peak Repetitive Forward Current	400 mA
i_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1 s	1.0 A
	Pulse Width = 1 μs	4.0 A

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

3

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.65 0.70	1.00 1.20	V V	I_F = 10 mA I_F = 30 mA
I_R	Reverse Current		50	nA	V_R = 10 V
BV	Breakdown Voltage	50		V	I_R = 100 μA
C	Capacitance		4.0	pF	V_R = 0, f = 1 MHz
Q_s	Stored Charge		120	pC	I_F = 10 mA, V_R = 10 V
t_{rr}	Reverse Recovery Time		8.0	ns	I_f = I_r = 10 mA Recovery to 1 mA

NOTES:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D4

1S920 • 1S921 • 1S922 • 1S923

GENERAL PURPOSE DIODES

DIFFUSED SILICON PLANAR

- V_F . . . 1.2 (MAX) @ 200 mA
- I_R . . . 100 nA (MAX) @ RATED WIV

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	−65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

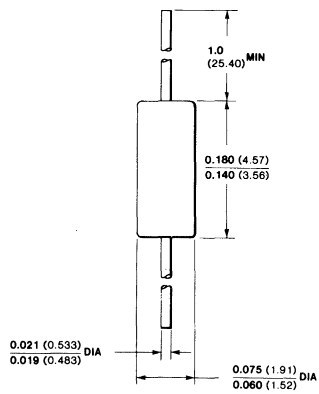
Power Dissipation (Note 2)

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW / °C

Maximum Voltage and Currents

		1S920	1S921	1S922	1S923
WIV	Working Inverse Voltage (−65°C to +100°C)	50 V	100 V	150 V	200 V
I_O	Average Forward Current	200 mA	200 mA	200 mA	200 mA
i_f	Recurent Peak Forward Current	600 mA	600 mA	600 mA	600 mA
$i_{f(surge)}$	Peak Forward Surge Current				
	Pulse Width = 1 s	1.0 A	1.0 A	1.0 A	1.0 A
	Pulse Width = 1 μs	4.0 A	4.0 A	4.0 A	4.0 A

DO-35 OUTLINE

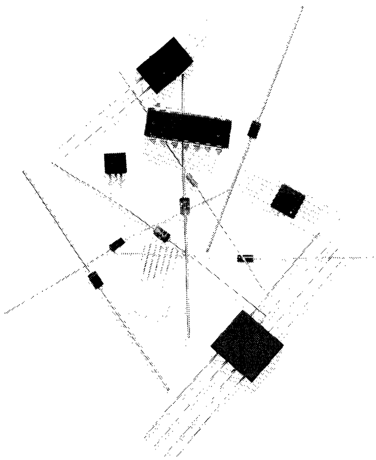


NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
I_R	Inverse Current		100 10	nA μA	V_R = rated WIV V_R = rated WIV, T_A = 100°C
V_F	Forward Voltage		1.2	V	I_F = 200 mA
C	Capacitance		6.5	pF	V_R = 0, f = 1 MHz
Q_S	Stored Charge		12	nC	I_F = 10 mA, V_R = 10 V

NOTES:
1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D1.



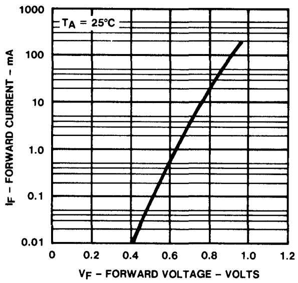
CURVE SET NUMBER D1

HIGH VOLTAGE SMALL SIGNAL DIODE

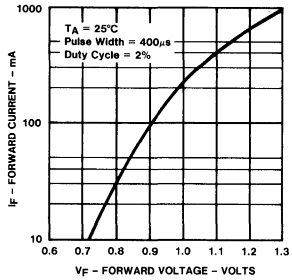
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

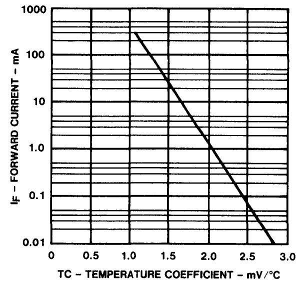
DC FORWARD CURRENT VERSUS FORWARD VOLTAGE



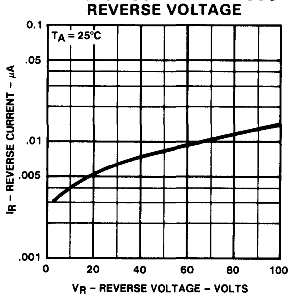
FORWARD CURRENT VERSUS FORWARD VOLTAGE (PULSE)



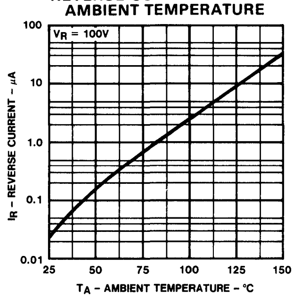
DC FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



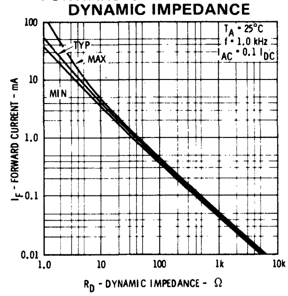
REVERSE CURRENT VERSUS REVERSE VOLTAGE



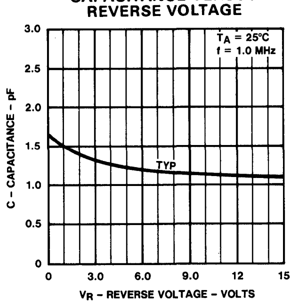
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



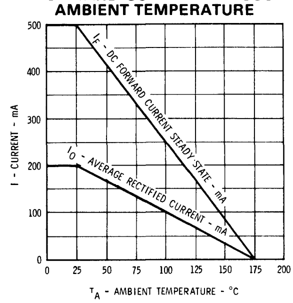
FORWARD CURRENT VERSUS DYNAMIC IMPEDANCE



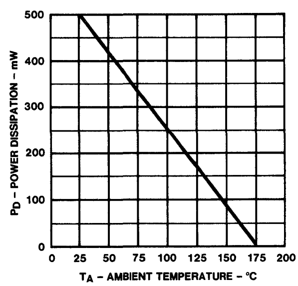
CAPACITANCE VERSUS REVERSE VOLTAGE



AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



POWER DERATING CURVE



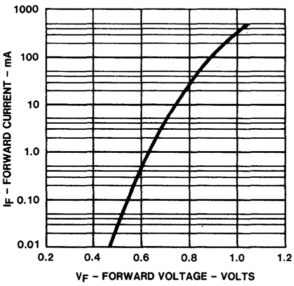
4

LOW LEAKAGE SMALL SIGNAL DIODE

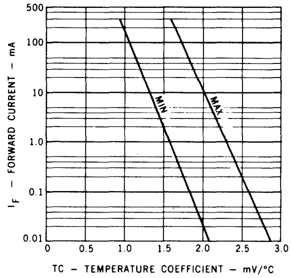
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

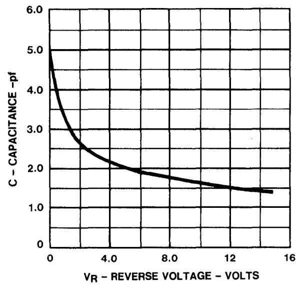
FORWARD VOLTAGE VERSUS FORWARD CURRENT



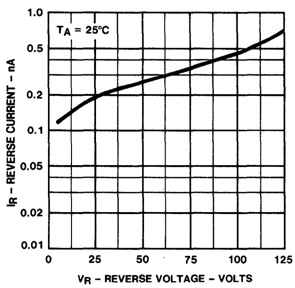
FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



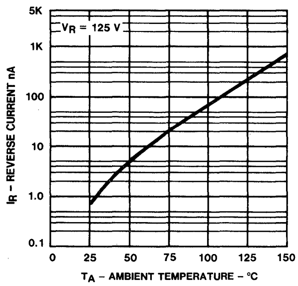
CAPACITANCE VERSUS REVERSE VOLTAGE



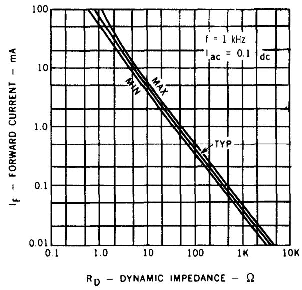
REVERSE VOLTAGE VERSUS REVERSE CURRENT



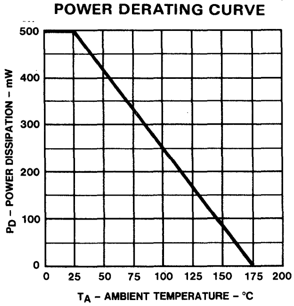
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



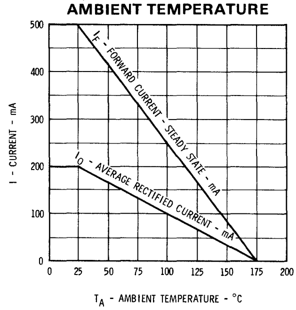
DYNAMIC IMPEDANCE VERSUS FORWARD CURRENT



POWER DERATING CURVE



AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



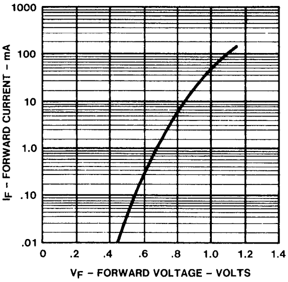
CURVE SET NUMBER D3

ULTRA-FAST SMALL SIGNAL DIODE

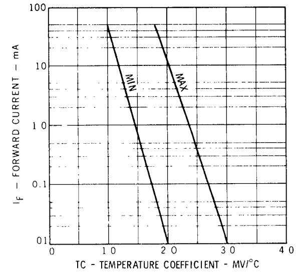
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

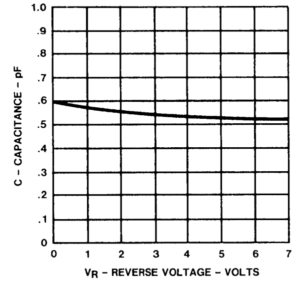
FORWARD VOLTAGE VERSUS FORWARD CURRENT



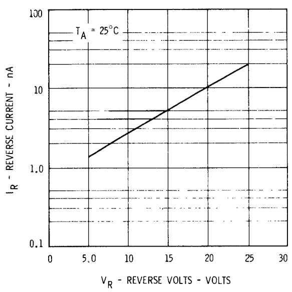
FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



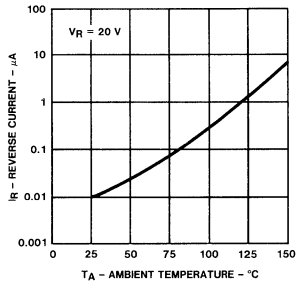
CAPACITANCE VERSUS REVERSE VOLTAGE



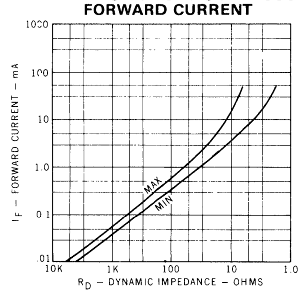
REVERSE VOLTAGE VERSUS REVERSE CURRENT



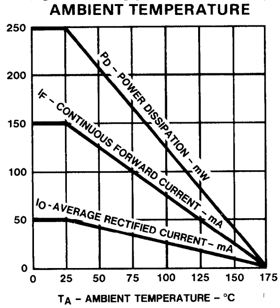
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



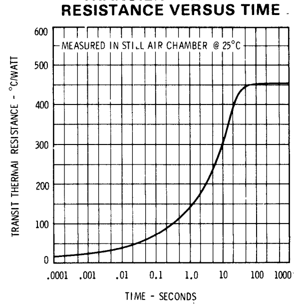
DYNAMIC IMPEDANCE VERSUS FORWARD CURRENT



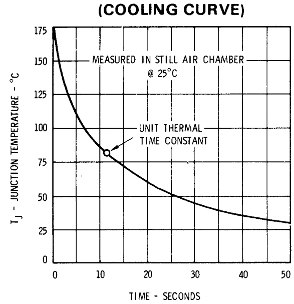
POWER DISSIPATION, AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



TRANSIENT THERMAL RESISTANCE VERSUS TIME



JUNCTION TEMPERATURE VERSUS TIME (COOLING CURVE)



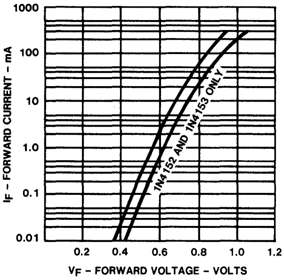
CURVE SET NUMBER D4

HIGH SPEED GENERAL PURPOSE SMALL SIGNAL DIODE

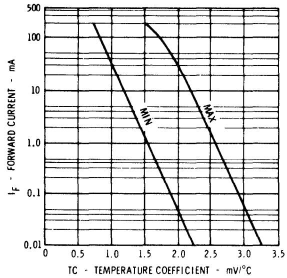
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

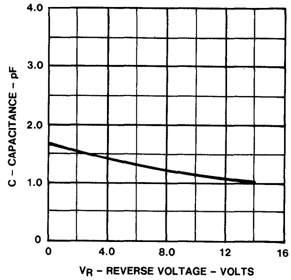
FORWARD VOLTAGE VERSUS FORWARD CURRENT



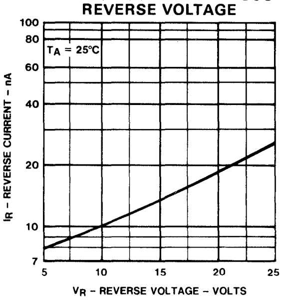
FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



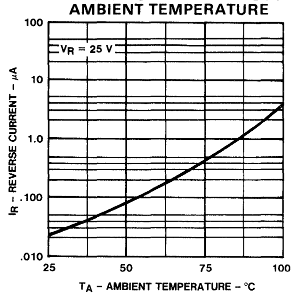
CAPACITANCE VERSUS REVERSE VOLTAGE



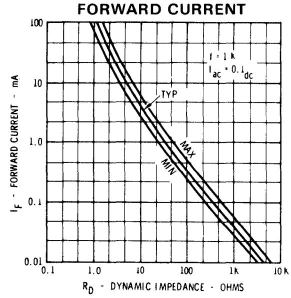
REVERSE CURRENT VERSUS REVERSE VOLTAGE



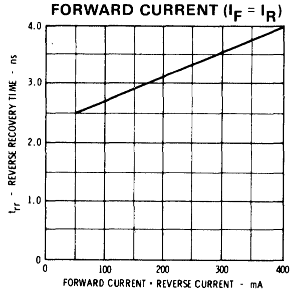
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



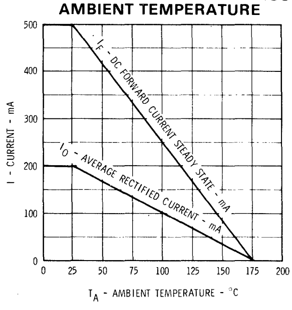
DYNAMIC IMPEDANCE VERSUS FORWARD CURRENT



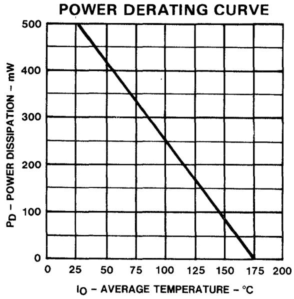
REVERSE RECOVERY TIME VERSUS FORWARD CURRENT ($I_F = I_R$)



AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



POWER DERATING CURVE



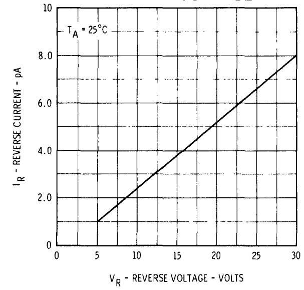
CURVE SET NUMBER D6

ULTRA-LOW LEAKAGE SMALL SIGNAL DIODE

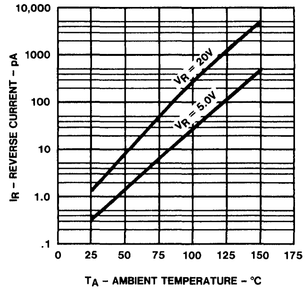
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

REVERSE CURRENT VERSUS REVERSE VOLTAGE

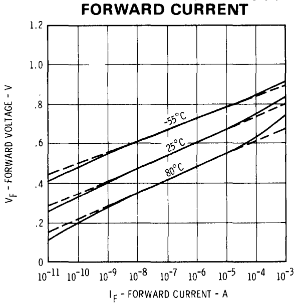


REVERSE CURRENT VERSUS TEMPERATURE

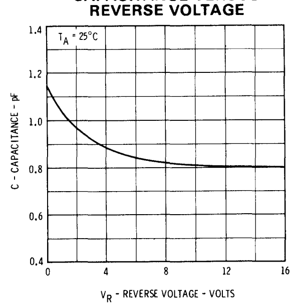


4

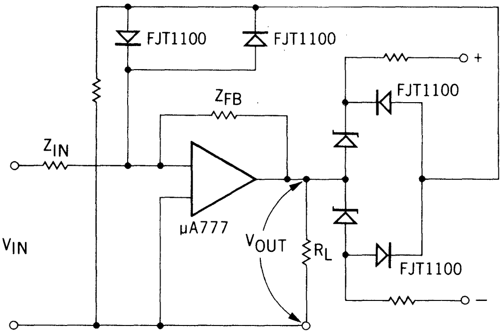
FORWARD VOLTAGE VERSUS FORWARD CURRENT



CAPACITANCE VERSUS REVERSE VOLTAGE

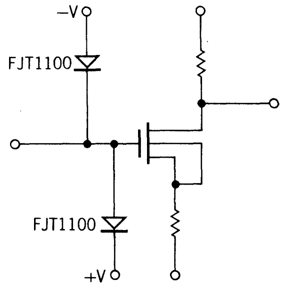


A BOUND CIRCUIT FOR OPERATIONAL AMPLIFIERS



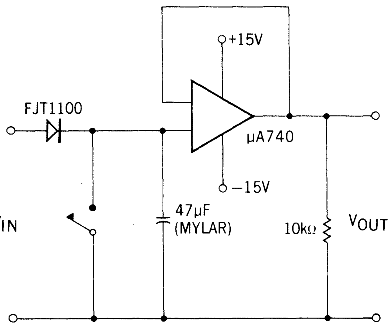
The bound circuit prevents overloading and saturation of operational amplifiers. The circuit has negligible effect on the operational amplifier until overload conditions occur. The use of the low leakage picoampere diode permits realization of extremely high input impedance for normal input voltages.

MOS FET PROTECTION CIRCUIT

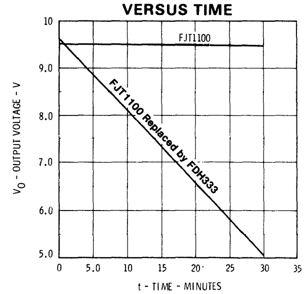


The picoampere diode affords excellent gate voltage protection while maintaining the DC input impedance at about one million megohms. In addition the very low capacity of the FJT1100 will have a relatively small effect on the circuit input capacity.

PEAK FOLLOWER CIRCUIT



OUTPUT VOLTAGE OF THE PEAK FOLLOWER CIRCUIT VERSUS TIME



A nearly constant voltage peak follower circuit is available by using a picoampere diode. A comparison between the use of the FJT1100 and a "low leakage" FDH333 diode in the circuit is shown in the curves of V_{OUT} vs Time.

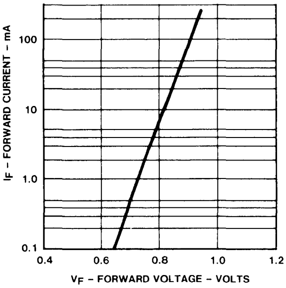
CURVE SET NUMBER D7

BANDSWITCH DIODE

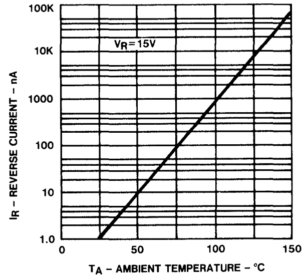
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

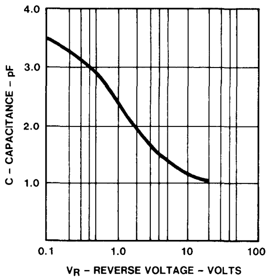
FORWARD CURRENT VERSUS FORWARD VOLTAGE



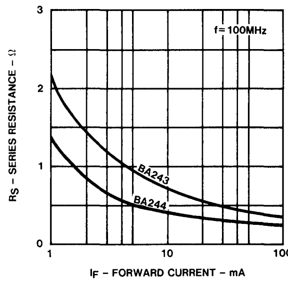
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



CAPACITANCE VERSUS REVERSE VOLTAGE



SERIES RESISTANCE VERSUS FORWARD CURRENT



4

TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

RF400

FIGURE OF MERIT VERSUS FREQUENCY

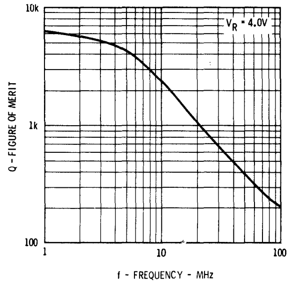
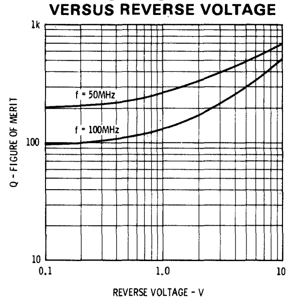
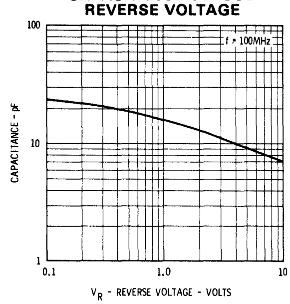


FIGURE OF MERIT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE



RF401

FIGURE OF MERIT VERSUS FREQUENCY

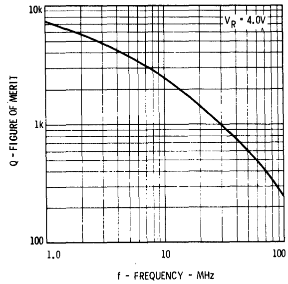
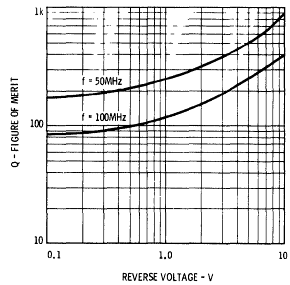
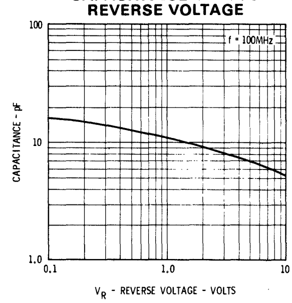


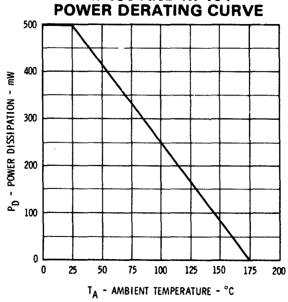
FIGURE OF MERIT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE



RF400 AND RF401 POWER DERATING CURVE

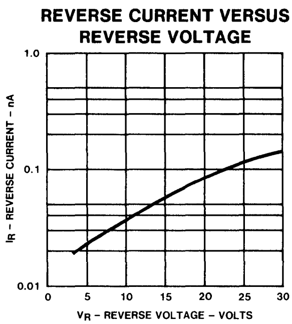


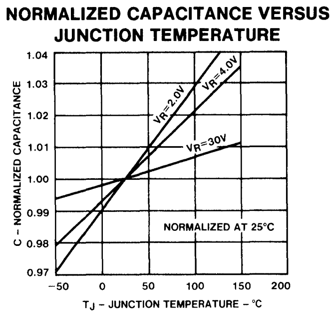
CURVE SET NUMBER D9

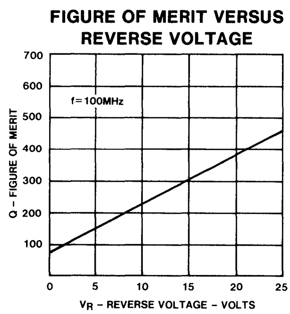
DUAL FM VARACTOR

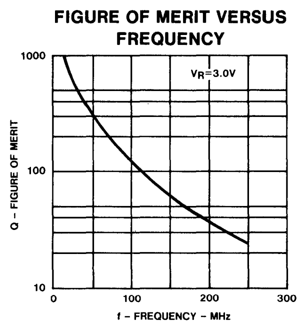
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED







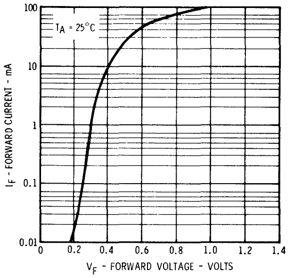


4

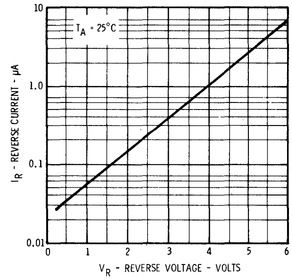
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

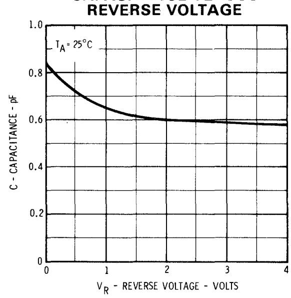
FORWARD CURRENT VERSUS FORWARD VOLTAGE

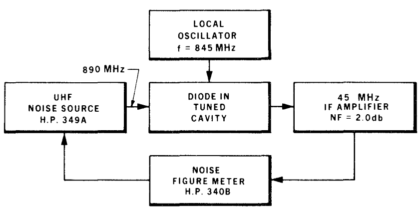


REVERSE CURRENT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE

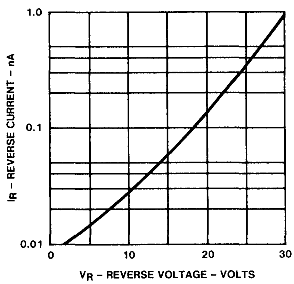




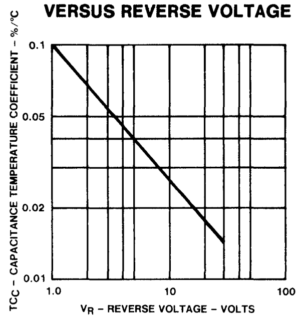
NOISE FIGURE TEST CIRCUIT

TYPICAL ELECTRICAL CHARACTERISTICS
AT 25°C AMBIENT TEMPERATURE

REVERSE CURRENT VERSUS REVERSE VOLTAGE



CAPACITANCE TEMPERATURE COEFFICIENT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE

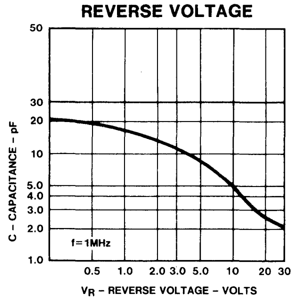
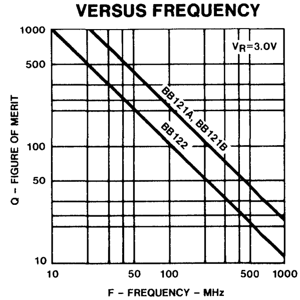


FIGURE OF MERIT VERSUS FREQUENCY

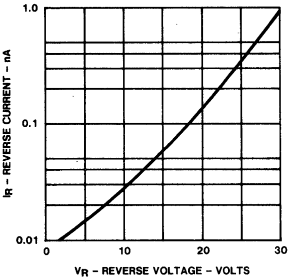


4

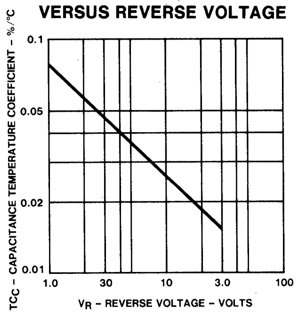
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE

REVERSE CURRENT VERSUS REVERSE VOLTAGE



CAPACITANCE TEMPERATURE COEFFICIENT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE

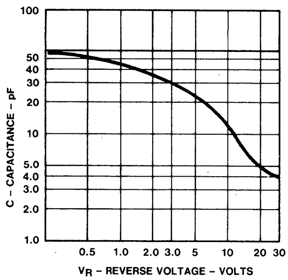
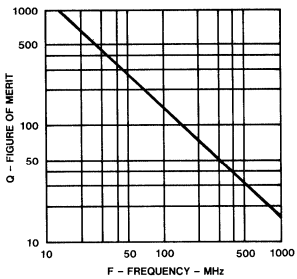


FIGURE OF MERIT VERSUS FREQUENCY



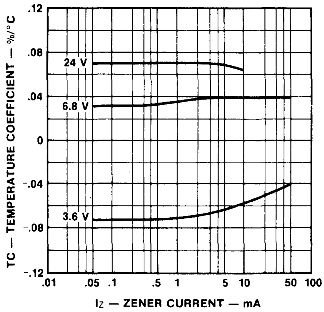
CURVE SET NUMBER D13

500 mW ZENER

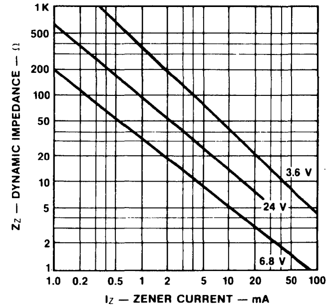
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE

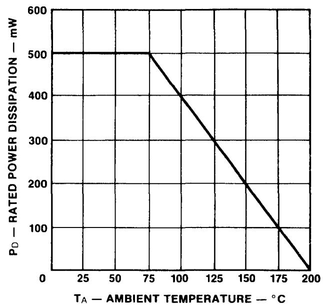
TEMPERATURE COEFFICIENT VERSUS ZENER CURRENT



DYNAMIC IMPEDANCE VERSUS ZENER CURRENT



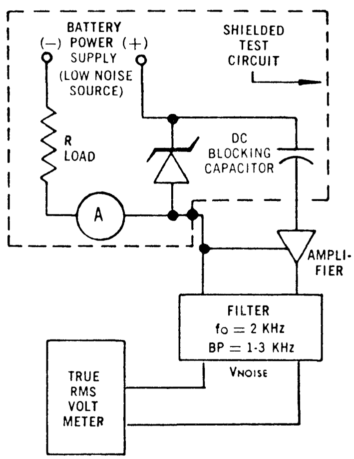
POWER DERATING VERSUS AMBIENT TEMPERATURE



NOISE DENSITY MEASUREMENT CIRCUIT

1N4099 - 1N4121

1N4620 - 1N4627



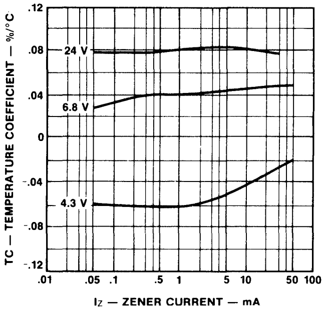
4

CURVE SET NUMBER D14

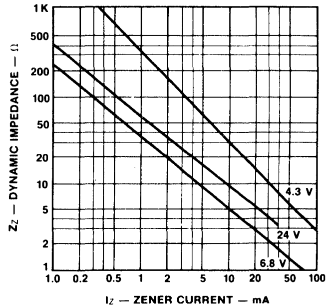
1 W ZENER

TYPICAL ELECTRICAL CHARACTERISTICS
AT 25°C AMBIENT TEMPERATURE

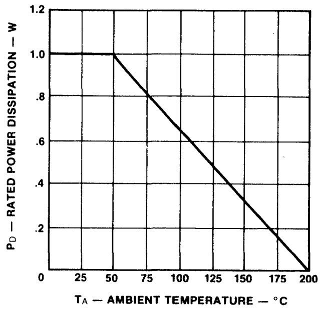
TEMPERATURE COEFFICIENT VERSUS ZENER CURRENT



DYNAMIC IMPEDANCE VERSUS ZENER CURRENT



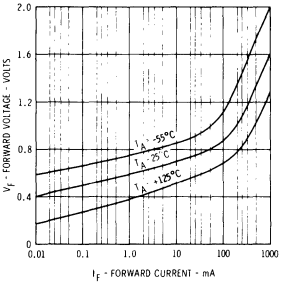
POWER DERATING VERSUS AMBIENT TEMPERATURE



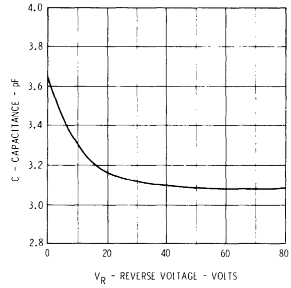
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

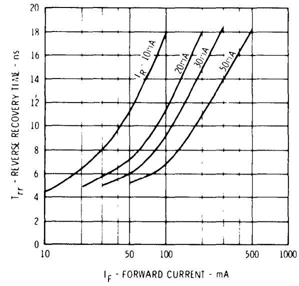
FORWARD VOLTAGE VERSUS FORWARD CURRENT



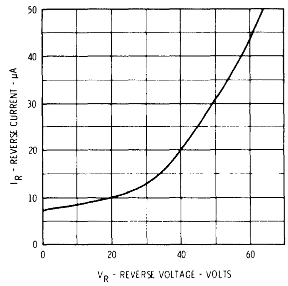
CAPACITANCE VERSUS REVERSE VOLTAGE



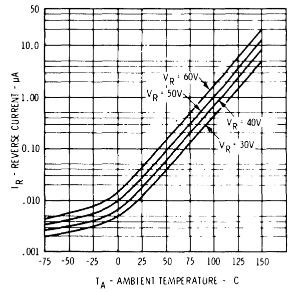
REVERSE RECOVER TIME VERSUS FORWARD CURRENT



REVERSE CURRENT VERSUS REVERSE VOLTAGE



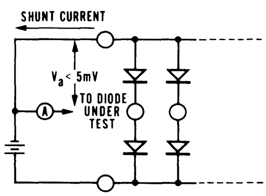
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



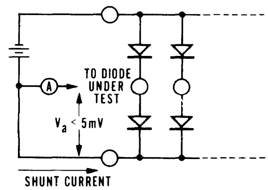
TEST CIRCUITS

To measure reverse current of an individual diode, the following test circuits are used:

COMMON CATHODE DIODES



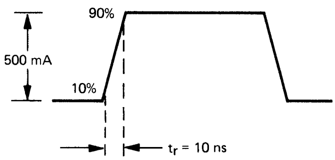
COMMON ANODE DIODES

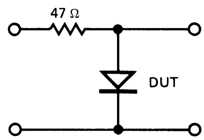


TEST CIRCUITS

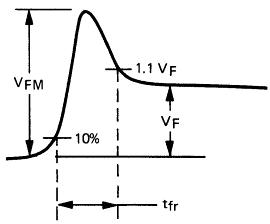
Test requirement for V_{FM} and t_{fr} is as shown below; all leads should be as short as possible.

INPUT CURRENT PULSE



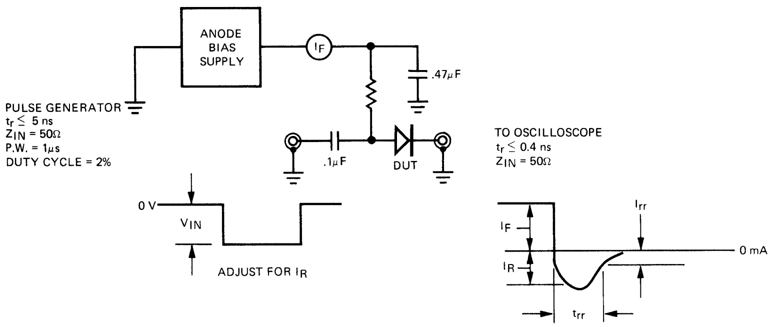


OUTPUT VOLTAGE PULSE

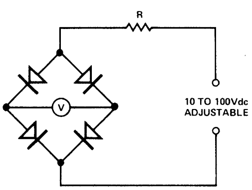


t_{rr} - REVERSE RECOVERY TIME TEST CIRCUIT

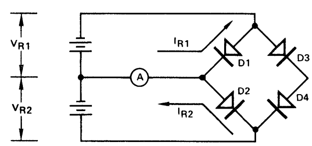
$I_f = I_r$, $I_{rr} = 0.1\ I_r$



ΔV_F BRIDGE MATCHING CIRCUIT



ΔI_R BRIDGE MATCHING CIRCUIT



NOTES:

1. R Varies depending on the current range. For the most often used current ranges, R is as follows:

Current Range (amperes)	R (ohms)
10^{-5} to 10^{-4}	10^6
10^{-4} to 10^{-3}	10^5
10^{-3} to 10^{-2}	10^4
or 10^{-n} to 10^{-n+1}	10^{n+1}

2. V indicates mismatch of assembly.

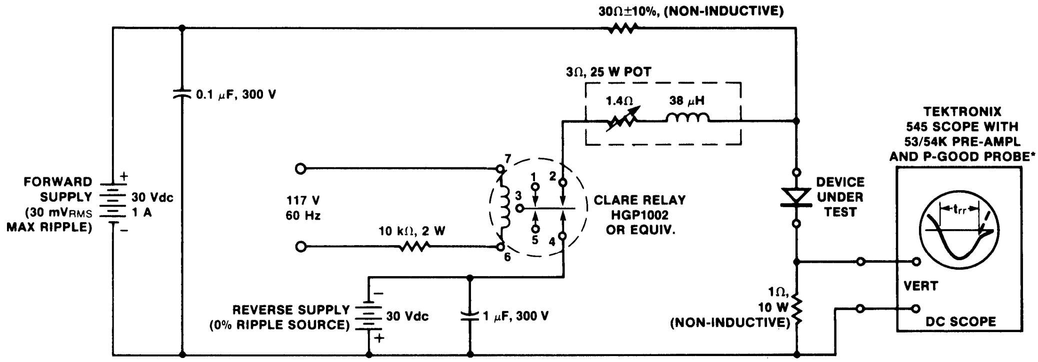
NOTES:

1. $V_{R2} = V_{R1}$ ±1%.
2. $I_{R2} - I_{R1} = \Delta I_R$ (difference in I_R between diodes D1 & D2). To measure diodes D3 & D4, reverse cathode-anodeterminal connections.
3. A is a center reading pico ammeter. ΔI_R indicated directly on A.

CURVE SET NUMBER D16

GENERAL PURPOSE 1 A RECTIFIER

REVERSE RECOVERY TIME TEST CIRCUIT

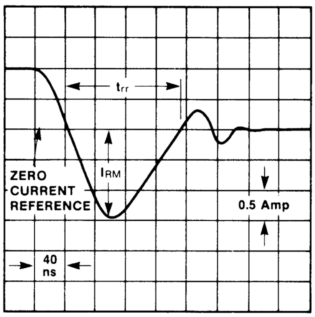


*OR EQUIVALENT

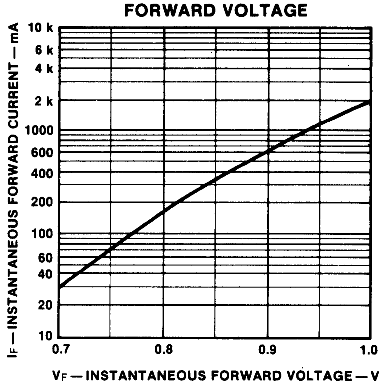
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

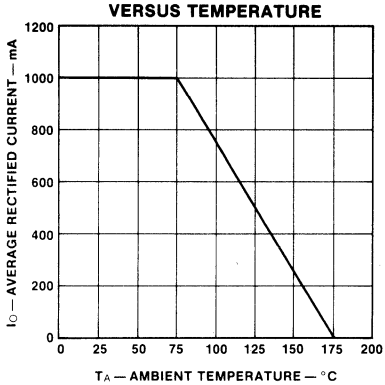
TYPICAL RECOVERY PATTERN



INSTANTANEOUS FORWARD CURRENT VERSUS INSTANTANEOUS FORWARD VOLTAGE



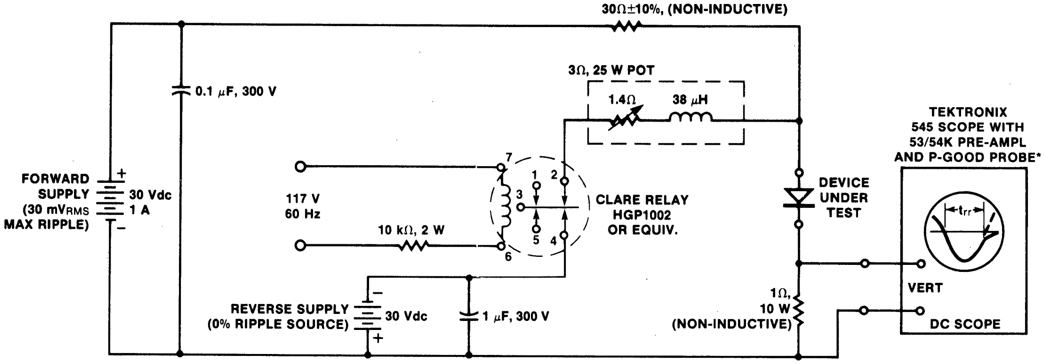
RECTIFIED FORWARD CURRENT VERSUS TEMPERATURE



4

FAST RECOVERY 1 A RECTIFIER

REVERSE RECOVERY TIME TEST CIRCUIT

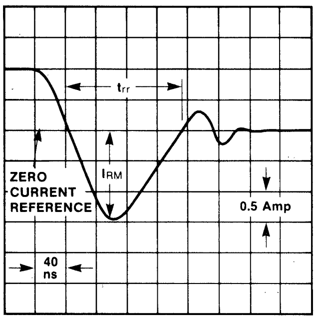


*OR EQUIVALENT

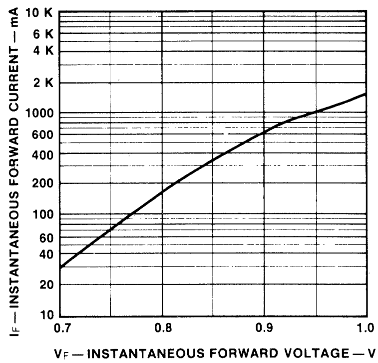
TYPICAL ELECTRICAL CHARACTERISTICS

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

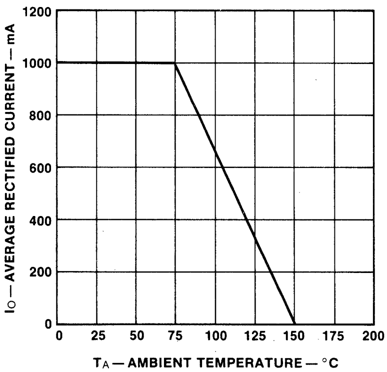
TYPICAL RECOVERY PATTERN



INSTANTANEOUS FORWARD CURRENT VERSUS INSTANTANEOUS FORWARD VOLTAGE



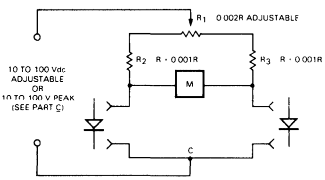
RECTIFIED FORWARD CURRENT VERSUS TEMPERATURE



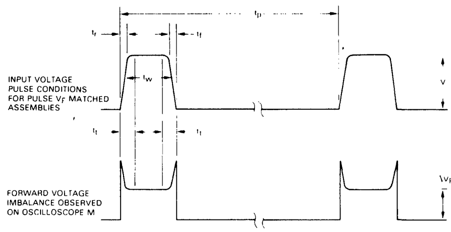
MATCHED DIODE ASSEMBLY

ΔV_F DIODE MATCHING CIRCUITS.

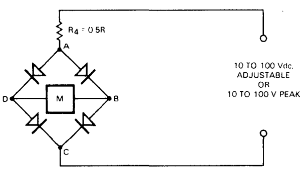
a.



b.



c.



t_r	Pulse Rise Time (10 to 90% Amplitude)	= 1.0 μs Max
t_f	Pulse Fall Time (90 to 10% Amplitude)	= 1.0 μs Max
t_w	Pulse Width (50% Amplitude)	= 10 ± 2.0 μs
t_t	Transient Time	= 1.0 μs Min
t_p	Period	= 1.0 ms
V	Voltage Input to Circuit "A or B"	= 10 to 100 V Adjustable
ΔV_F	Forward Voltage Difference Between Diodes (Measured Between Transient Times)	= As Specified

NOTES:

1. R varies depending on the current range. For the most often used current ranges, R is as follows:

Current Range (amperes)	R (ohms)
10^{-5} to 10^{-4}	10^6
10^{-4} to 10^{-3}	10^5
10^{-3} to 10^{-2}	10^4
or 10^{-n} to 10^{-n+1}	10^{n+1}

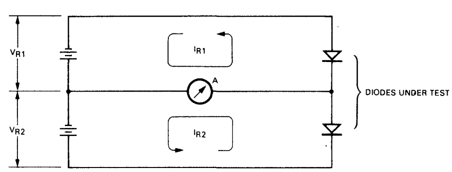
2. The input voltage pulse conditions shown above are employed at Fairchild in testing. The user may deviate from the specific conditions above with no variation in results providing the following general conditions are met:

   a. $\frac{tw}{tp} \leqslant 0.01$

   b. tw < 10 ms

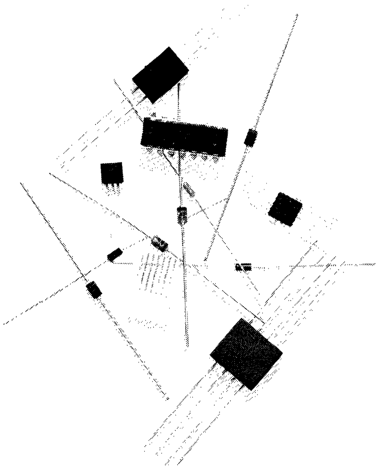
   c. Transients occuring during pulse rise and fall times are ignored in observing ΔV_F.

ΔI_R DIODE MATCHING CIRCUIT



NOTES:

1. $V_{R2} = -V_{R1} \pm 1\%$.
2. $I_{R2} - I_{R1} = \Delta I_R$ (difference in I_R between two diodes under test).
3. A is a center reading pico ammeter.



GLOSSARY OF SYMBOLS AND TERMS

BV Breakdown Voltage

Figure 1 shows the reverse characteristic of a typical silicon diode. Breakdown voltage is generally the reverse voltage at a point beyond the "knee" of the reverse characteristic. In Figure 1, the breakdown voltage is specified at a reverse current of I_{R2}.

C Capacitance

Diode capacitance is measured at a specified reverse voltage using an a.c. signal of specified frequency. When capacitance is measured at $V_R = 0$, this is sometimes denoted by the symbol C_O.

C_C Case Capacitance

This is that part of a diode's total capacitance which is attributable to the diode package.

f_O Series Resonant Frequency

The frequency of oscillation of the tuned circuit formed by the capacitance and inherent series inductance of the diode.

I_F Continuous Forward Current (Rating)

The maximum direct current that can be safely passed through a diode in the forward direction.

I_F Forward Current

The direct current passing through a diode in the forward direction.

I_f Forward Current

The forward current passing through a diode operated under switching conditions. See Figure 3.

i_f Peak Repetitive Forward Current

The maximum value of the peak point of a current that can safely be passed through a diode in the forward direction. This is a continuous (i.e. repetitive) rating.

$i_{f_{surge}}$ Peak Forward Surge Current

The maximum value of the peak point of a single cycle of current that can safely be passed through a diode in the forward direction. This is not a continuous rating.

I_{FSM} Peak Forward Surge Current

This rating is the same as $i_{f(surge)}$ but is more generally applied to rectifiers.

I_O Average Rectified Current

The average value of the forward current passing through a diode; as a rating, the maximum value of such current that can safely be passed.

I_R Reverse Current

The leakage current which flows in the reverse direction through a diode when a reverse voltage is applied to the diode. Referring to Figure 1, I_R is usually measured at a specified reverse voltage at a point below the "knee" on the reverse characteristic.

I_r Reverse Current

The peak value of reverse current which occurs immediately after switch-off. The value of I_r is limited by the circuit, which determines that rate at which stored charge can be dissipated. See Figure 3.

I_{rr} Reverse Current

The steady value of reverse current at equilibrium after switch-off. See Figure 3.

I_{RAV} Average Reverse Current

The average reverse current which flows when an a c voltage is applied across a diode.

I_{RM} Reverse Recovery Current

The peak value of reverse current which flows immediately after switching applied voltage from the forward to the reverse direction. I_{RM} is the same as I_r, generally used for rectifiers.

I_{RX} Reverse Current

I_{RX} is the symbol used to denote the reverse current of a single diode in an array at a time when all other diodes in the array are passing forward current. It is a measure of cross-talk between diodes.

I_Z Zener Current

The reverse current which flows in a zener diode at a point beyond the knee in the reverse characteristic. See Figure 2.

$i_{z_{surge}}$ Maximum Zener Surge Current

The maximum value of the peak point of a single cycle of current that can safely be passed through a zener diode in the reverse direction. This is not a continuous rating.

I_{ZM} Maximum Zener Current

The maximum value of direct current that can safely be passed through a zener diode in the reverse direction.

L_S Series Inductance

Series inductance that is inherent in the construction of a diode, normally measured between two specified points on the diode leads.

N_D Noise Density

A measurement of the noise generated within a zener diode, both due to zener breakdown and internal resistance. Noise density, measured in microvolts rms per square root cycle, can be used to calculate rms noise over any frequency range.

NF Noise Figure

This is a ratio used to measure the noise generated within a diode. The ratio used is total output noise compared to that part of output noise due to input noise. This ratio, when multiplied by $10\log_{10}$, is known as noise figure and is measured in decibels (dB)

GLOSSARY OF SYMBOLS AND TERMS

Q Figure of Merit

Generally used as a measure of the "quality" of varactor diodes, Q, the figure of merit, is defined as the ratio of energy stored to energy dissipated.

Q_S Stored Charge

The charge stored in a diode when passing current in the forward direction. Stored charge is usually measured by switching the diode off and measuring the area of the I versus t curve from switch-off to equilibrium. See Figure 3.

R_D Dynamic Resistance

Small signal resistance of a diode operating in the reverse direction determined by the small signal or a c values of reverse current and reverse voltage. This parameter is of particular importance in varactor diodes.

r_{diff} Differential Resistance

Small signal resistance of a diode operating in the forward direction. determined by the small signal or a c values of forward current and forward voltage.

RE Rectification Efficiency

The ratio of d c load voltage to peak r f input voltage to a detector.

R_S Series Resistance

Small signal resistance of a diode operating in the forward direction determined by the small signal or a c values of forward current and forward voltage. Same as r_{diff}.

TC Temperature Coefficient

A coefficient which determines the variation of various parameters (e.g. Capacitance, Zener voltage, forward voltage) with temperature. A subscript is often used to denote the parameter to which the temperature coefficient refers.

t_{fr} Forward Recovery Time

The time interval between the point at which a diode is turned on and the point at which the forward voltage comes to within 10% of its equilibrium level. See Figure 4.

t_{rr} Reverse Recovery Time

The time interval between the point at which a diode is turned off and the point at which the reverse current comes to within 10% of its equilibrium level. See Figure 3.

V_F Forward Voltage

The voltage applied across a diode in the forward direction (anode more positive than cathode).

V_{FAV} Average Forward Voltage

The average value of forward voltage when current is being passed through a diode in the forward direction.

V_{fr} Forward Recovery Voltage

The peak value of forward voltage reached immediately after switch-on. The value of V_{fr} is limited by the circuit in which the diode is operating.

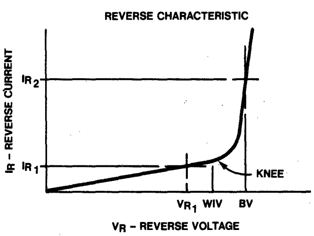


FIGURE 1

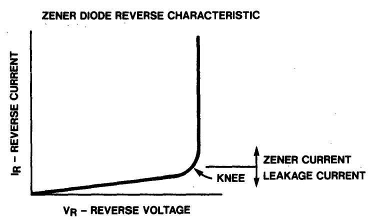


FIGURE 2

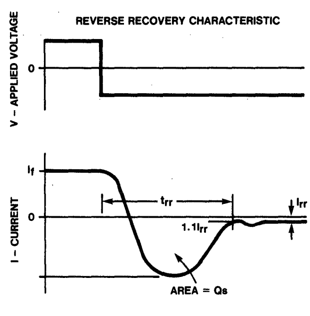


FIGURE 3

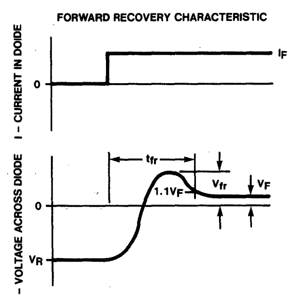


FIGURE 4

GLOSSARY OF SYMBOLS AND TERMS

V_{FX} Forward Voltage

V_{FX} is the symbol used to denote the forward voltage of a single diode in an array at a time when the condition of the other diodes in the array is defined. It can be used as a measure of cross-talk between diodes.

V_{PK} Peak Forward Voltage

The peak value of forward voltage reached immediately after switch-on. Same as V_{fr}.

V_R dc Blocking Voltage Rating

The continuous reverse voltage at which a rectifier can be safely operated without going beyond the "knee" in the reverse characteristic (Figure 1).

V_R Reverse Voltage

The voltage applied across a diode in the reverse direction (anode more negative than cathode).

V_{RRM} Peak Repetitive Reverse Voltage

The maximum value of the peak point of a reverse voltage that can be safely applied to a diode. This is a continuous (i.e. repetitive) rating and includes all repetitive transient voltages.

V_{Rrms} rms Reverse Voltage

The maximum rms value of a reverse voltage that can be safely applied to a diode.

V_{RWM} Working Peak Reverse Voltage

The maximum value of the peak point of a reverse voltage that can be safely applied to a diode. This is not a continuous rating and does not include transient voltages.

V_Z Zener Voltage

The reverse voltage across a zener diode at a point where zener current is flowing. See Figure 2.

WIV Working Inverse Voltage

The maximum reverse voltage at which a diode can be operated below the "knee" on the reverse characteristic. See Figure 1.

Z_Z Zener Impedance

The small signal impedance of a zener diode operating in the zener region, determined by the small signal or a c values of zener current and zener voltage.

Z_{ZK} Zener Knee Impedance

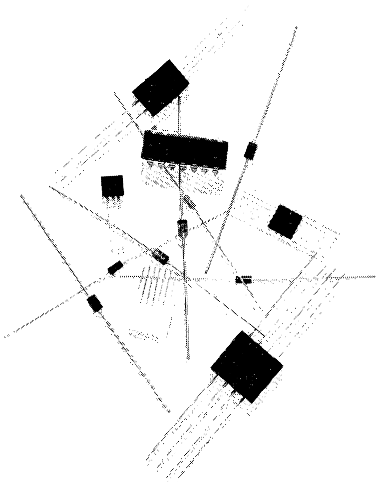
Zener impedance measured at a defined point on the "knee" of the zener characteristic (See Figure 2).

ΔI_R Reverse Current Match

The difference in reverse current between any two diodes measured under the same condition for each.

ΔV_F Forward Voltage Match

The difference in forward voltage between any two diodes measured under the same conditions for each.



FAIRCHILD FRANCHISED DISTRIBUTORS
UNITED STATES AND CANADA

ALABAMA
HALLMARK ELECTRONICS
4739 Commercial Drive
Huntsville, Alabama 35805
Tel: 205-837-8700 TWX: 810-726-2187

HAMILTON/AVNET ELECTRONICS
4692 Commercial Drive
Huntsville, Alabama 35805
Tel: 205-837-7210
Telex: None — use HAMAVLECB DAL 73-0511
(Regional Hq. in Dallas, Texas)

ARIZONA
HAMILTON/AVNET ELECTRONICS
2615 S. 21st Street
Phoenix, Arizona 85034
Tel: 602-275-7851 TWX: 910-951-1535

KIERULFF ELECTRONICS
4134 East Wood Street
Phoenix, Arizona 85040
Tel: 602-243-4101

LIBERTY ELECTRONICS
8155 North 24th Ave.
Phoenix, Arizona 85021
Tel: 602-249-2232 TWX: 910-951-4282

CALIFORNIA
AVNET ELECTRONICS
350 McCormick Avenue
Costa Mesa, California 92626
Tel: 714-754-6111 (Orange County)
213-558-2345 (Los Angeles)
TWX: 910-595-1928

BELL INDUSTRIES
Electronic Distributor Division
1161 N. Fair Oaks Avenue
Sunnyvale, California 94086
Tel: 408-734-8570 TWX: 910-339-9378

ELMAR ELECTRONICS
2288 Charleston Rd.
Mountain View, California 94042
Tel: 415-961-3611 TWX: 910-379-6437

HAMILTON ELECTRO SALES
10912 W. Washington Blvd.
Culver City, California 90230
Tel: 213-558-2121 TWX: 910-340-6364

HAMILTON/AVNET ELECTRONICS
575 E. Middlefield Road
Mountain View, California 94040
Tel: 415-961-7000 TWX: 910-379-6486

HAMILTON/AVNET ELECTRONICS
8917 Complex Drive
San Diego, California 92123
Tel: 714-279-2421
Telex: HAMAVELEC SDG 69-5415

INTERMARK ELECTRONICS INC.
4040 Sorrento Valley Blvd.
San Diego, California 92121
Tel: 714-279-5200

INTERMARK ELECTRONIC INC.
1802 East Carnegie Avenue
Santa Ana, California 92705
Tel: 714-540-1322

LIBERTY ELECTRONICS
124 Maryland Street
El Segundo, California 90245
Tel: 213-322-8100 TWX: 910-348-7111

LIBERTY ELECTRONICS/SAN DIEGO
8248 Mercury Court
San Diego, California 92111
Tel: 714-565-9171 TWX: 910-335-1590

COLORADO
CENTURY ELECTRONICS
8155 West 48th Avenue
Wheatridge, Colorado 80033
Tel: 303-424-1985 TWX: 910-938-0393

CRAMER ELECTRONICS
5465 East Evans Place at Hudson
Denver, Colorado 80222
Tel: 303-758-2100

ELMAR ELECTRONICS
6777 E. 50th Avenue
Commerce City, Colorado 80022
Tel: 303-287-9611 TWX: 910-936-0770

HAMILTON/AVNET ELECTRONICS
5921 N. Broadway
Denver, Colorado 80216
Tel: 303-534-1212 TWX: 910-931-0510

CONNECTICUT
CRAMER ELECTRONICS
35 Dodge Avenue
Wharton Brook Industrial Center
North Haven, Connecticut 06473
Tel: 203-239-5641

HAMILTON/AVNET ELECTRONICS
643 Danbury Road
Georgetown, Connecticut 06829
Tel: 203-762-0361
TWX: None — use 710-897-1405
(Regional Hq. in Mt. Laurel, N.J.)

HARVEY ELECTRONICS
112 Main Street
Norwalk, Connecticut 06851
Tel: 203-853-1515

SCHWEBER ELECTRONICS
Finance Drive
Commerce Industrial Park
Danbury, Connecticut 06810
Tel: 203-792-3500

FLORIDA
ARROW ELECTRONICS
1001 Northwest 62nd Street
Suite 402
Ft. Lauderdale, Florida 33309
Tel: 305-776-7790

ARROW ELECTRONICS
115 Palm Bay Road N.W.
Suite 10 Bldg. #200
Palm Bay, Florida 32905
Tel: 305-725-1408

CRAMER ELECTRONICS
345 North Graham Avenue
Orlando, Florida 32814
Tel: 305-894-1511

HALLMARK ELECTRONICS
1302 W. McNab Road
Ft. Lauderdale, Florida 33309
Tel: 305-971-9280 TWX: 510-956-3092

HALLMARK ELECTRONICS
7233 Lake Ellenor Drive
Orlando, Florida 32809
Tel: 305-855-4020 TWX: 810-850-0183

HAMILTON/AVNET ELECTRONICS
6800 N.W. 20th Avenue
Ft. Lauderdale, Florida 33309
Tel. 305-971-2900 TWX: 510-954-9808

HAMILTON/AVNET ELECTRONICS
3197 Tech Drive, North
St. Petersburg, Florida 33702

SCHWEBER ELECTRONICS
2830 North 28th Terrace
Hollywood, Florida 33020
Tel: 305-927-0511 TWX: 510-954-0304

GEORGIA
ARROW ELECTRONICS
3406 Oak Cliff Road
Doraville, Georgia 30340
Tel: 404-455-4054

HAMILTON/AVNET ELECTRONICS
6700 Interstate 85 Access Road, Suite 1E
Norcross, Georgia 30071
Tel: 404-448-0800
Telex: None — use HAMAVLECB DAL 73-0511
(Regional Hq. in Dallas, Texas)

LYKES ELECTRONICS CORP.
6447 Atlantic Blvd.
Norcross, Georgia 30071
Tel: 404-449-9400

ILLINOIS
HALLMARK ELECTRONICS INC.
180 Crossen Avenue
Elk Grove Village, Illinois 60007
Tel: 312-437-8800

HAMILTON/AVNET ELECTRONICS
3901 N. 25th Avenue
Schiller Park, Illinois 60176
Tel: 312-678-6310 TWX: 910-227-0060

KIERULFF ELECTRONICS
85 Gordon Street
Elk Grove Village, Illinois 60007
Tel: 312-640-0200 TWX: 910-227-3166

SCHWEBER ELECTRONICS, INC
1275 Bummel Avenue
Elk Grove Village, Illinois 60007
Tel: 312-593-2740 TWX: 910-222-3453

SEMICONDUCTOR SPECIALISTS, INC
(mailing address)
O'Hare International Airport
P.O. Box 66125
Chicago, Illinois 60666

(shipping address)
195 Spangler Avenue
Elmhurst Industrial Park
Elmhurst, Illinois 60126
Tel: 312-279-1000 TWX: 910-254-0169

INDIANA
GRAHAM ELECTRONICS SUPPLY, INC.
133 S. Pennsylvania St.
Indianapolis, Indiana 46204
Tel: 317-634-8486 TWX: 810-341-3481

KANSAS
HALLMARK ELECTRONICS, INC
11870 W. 91st Street
Shawnee Mission, Kansas 66214
Tel: 913-888-4746

HAMILTON/AVNET ELECTRONICS
9219 Guivira Road
Overland Park, Kansas 66215
Tel: 913-888-8900
Telex: None — use HAMAVLECB DAL 73-0511
(Regional Hq. in Dallas, Texas)

LOUISIANA
STERLING ELECTRONICS CORP
4613 Fairfield
Metairie, Louisiana 70002
Tel: 504-887-7610
Telex: STERLE LEC MRIE 58-328

MARYLAND
HALLMARK ELECTRONICS, INC
6655 Amberton Drive
Baltimore, Maryland 21227
Tel: 301-796-9300

HAMILTON/AVNET ELECTRONICS
(mailing address)
Friendship International Airport
P.O. Box 8647
Baltimore, Maryland 21240

(shipping address)
7235 Standard Drive
Hanover, Maryland 21076
Tel: 301-796-5000 TWX: 710-862-1861
Telex: HAMAVLECA HNVE 87-968

PIONEER WASHINGTON ELECTRONICS, INC
9100 Gaither Road
Gaithersburg, Maryland 20760
Tel: 301-948-0710 TWX: 710-828-9784

SCHWEBER ELECTRONICS
9218 Gaither Road
Gaithersburg, Maryland 20760
Tel: 301-840-5900 TWX: 710-828-0536

MASSACHUSETTS
CRAMER ELECTRONICS
85 Wells Avenue
Newton Centre, Massachusetts 02159
Tel: 617-964-4000

GERBER ELECTRONICS
852 Providence Highway
U.S. Route 1
Dedham, Massachusetts 02026
Tel: 617-329-2400

HAMILTON/AVNET ELECTRONICS
100 E. Commerce Way
Woburn, Massachusetts 01801
Tel: 617-933-8000 TWX: 710-332-1201

6

FAIRCHILD FRANCHISED DISTRIBUTORS (Cont'd)
UNITED STATES AND CANADA

HARVEY ELECTRONICS
44 Hartwell Avenue
Lexington, Massachusetts 02173
Tel: 617-861-9200 TWX: 710-326-6617

SCHWEBER ELECTRONICS
213 Third Avenue
Waltham, Massachusetts 02154
Tel: 617-890-8484

MICHIGAN
HAMILTON/AVNET ELECTRONICS
32487 Schoolcraft
Livonia, Michigan 48150
Tel: 313-522-4700 TWX: 810-242-8775

PIONEER/DETROIT
13485 Stamford
Livonia, Michigan 48150
Tel: 313-525-1800

R-M ELECTRONICS
4310 Roger B. Chaffee
Wyoming, Michigan 49508
Tel: 616-531-9300

SCHWEBER ELECTRONICS
33540 Schoolcraft
Livonia, Michigan 48150
Tel: 313-525-8100

SHERIDAN SALES CO.
24543 Indoplex Drive
Farmington, Michigan 48024
Tel: 313-477-3800

MINNESOTA
HAMILTON/AVNET ELECTRONICS
7449 Cahill Road
Edina, Minnesota 55435
Tel: 612-941-3801
TWX: None — use 910-227-0060
(Regional Hq. in Chicago, Ill.)

SCHWEBER ELECTRONICS
7402 Washington Avenue S.
Eden Prairie, Minnesota 55344
Tel: 612-941-5280

SEMICONDUCTOR SPECIALISTS, INC.
8030 Cedar Avenue S.
Minneapolis, Minnesota 55420
Tel: 612-854-8841 TWX: 910-576-2812

MISSOURI
HALLMARK ELECTRONICS, INC.
13789 Rider Trail
Earth City, Missouri 63045
Tel: 314-291-5350

HAMILTON/AVNET ELECTRONICS
396 Brookes Lane
Hazelwood, Missouri 63042
Tel: 314-731-1144 TWX: 910-762-0606

NEW JERSEY
HAMILTON/AVNET ELECTRONICS
218 Little Falls Road
Cedar Grove, New Jersey 07009
Tel: 201-239-0800 TWX: 710-994-5787

HAMILTON/AVNET ELECTRONICS
113 Gaither Drive
East Gate Industrial Park
Mt. Laurel, N.J. 08057
Tel: 609-234-2133 TWX: 710-897-1405

SCHWEBER ELECTRONICS
43 Belmont Drive
Somerset, N.J. 08873
Tel: 201-469-6008 TWX: 710-480-4733

STERLING ELECTRONICS
774 Pfeiffer Blvd.
Perth Amboy, N.J. 08861
Tel: 201-442-8000 Telex: 138-679

WILSHIRE ELECTRONICS
102 Gaither Drive
Mt. Laurel, N.J. 08057
Tel: 215-627-1920

WILSHIRE ELECTRONICS
1111 Paulison Avenue
Clifton, N.J. 07011
Tel: 201-365-2600 TWX: 710-989-7052

NEW MEXICO
CENTURY ELECTRONICS
11728 Linn Avenue
Albuquerque, New Mexico 87123
Tel: 505-292-2700 TWX: 910-989-0625

HAMILTON/AVNET ELECTRONICS
2450 Byalor Drive S.E.
Albuquerque, New Mexico 87119
Tel: 505-765-1500
TWX: None — use 910-379-6486
(Regional Hq. in Mt. View, Ca.

NEW YORK
ARROW ELECTRONICS
900 Broadhollow Road
Farmingdale, New York 11735
Tel: 516-694-6800

CRAMER ELECTRONICS
129 Oser Avenue
Hauppauge, New York 11787
Tel: 516-231-5682

CRAMER ELECTRONICS
6716 Joy Road
E. Syracuse, New York 13057
Tel: 315-437-6671

COMPONENTS PLUS, INC.
40 Oser Avenue
Hauppauge, L.I., New York 11787
Tel: 516-231-9200 TWX: 510-227-9869

HAMILTON/AVNET ELECTRONICS
167 Clay Road
Rochester, New York 14623
Tel: 716-442-7820
TWX: None — use 710-332-1201
(Regional Hq. in Burlington, Ma.)

HAMILTON/AVNET ELECTRONICS
6500 Joy Road
E. Syracuse, New York 13057
Tel: 315-437-2642 TWX: 710-541-0959

HAMILTON/AVNET ELECTRONICS
70 State Street
Westbury, L.I., New York 11590
Tel: 516-333-5800 TWX: 510-222-8237

ROCHESTER RADIO SUPPLY CO., INC.
140 W. Main Street
(P.O. Box 1971) Rochester, New York 14603
Tel: 716-454-7800

SCHWEBER ELECTRONICS
Jericho Turnpike
Westbury, L.I., New York 11590
Tel: 516-334-7474 TWX: 510-222-3660

SCHWEBER ELECTRONICS, INC.
2 Town Line Circle
Rochester, New York 14623
Tel: 716-461-4000

JACO ELECTRONICS, INC.
145 Oser Avenue
Hauppauge, L.I., New York 11787
Tel: 516-273-1234 TWX: 510-227-6232

SUMMIT DISTRIBUTORS, INC.
916 Main Street
Buffalo, New York 14202
Tel: 716-884-3450 TWX: 710-522-1692

NORTH CAROLINA
CRAMER ELECTRONICS
938 Burke Street
Winston Salem, North Carolina 27102
Tel: 919-725-8711

HAMILTON/AVNET
2803 Industrial Drive
Raleigh, North Carolina 27609
Tel: 919-829-8030

HALLMARK ELECTRONICS
1208 Front Street, Bldg. K
Raleigh, North Carolina 27609
Tel: 919-823-4465 TWX: 510-928-1831

RESCO
Highway 70 West
Rural Route 8, P.O. Box 116-B
Raleigh, North Carolina 27612
Tel: 919-781-5700

PIONEER/CAROLINA ELECTRONICS
103 Industrial Drive
Greensboro, North Carolina 27406
Tel: 919-273-4441

OHIO
HAMILTON/AVNET ELECTRONICS
761 Beta Drive, Suite E
Cleveland, Ohio 44143
Tel: 216-461-1400
TWX: None — use 910-227-0060
(Regional Hq. in Chicago, Ill.)

HAMILTON/AVNET ELECTRONICS
118 Westpark Road
Dayton, Ohio 45459
Tel: 513-433-0610 TWX: 810-450-2531

PIONEER/CLEVELAND
4800 E. 131st Street
Cleveland, Ohio 44105
Tel: 216-587-3600

PIONEER/DAYTON
1900 Troy Street
Dayton, Ohio 45404
Tel: 513-236-9900 TWX: 810-459-1622

SCHWEBER ELECTRONICS
23880 Commerce Park Road
Beachwood, Ohio 44122
Tel: 216-464-2970 TWX: 810-427-9441

SHERIDAN/CLEVELAND
Unit 28
Versaplex Bldg.
701 Beta Drive
Cleveland, Ohio 44143
Tel: 216-461-3300 TWX: 810-427-2957

SHERIDAN SALES CO.
(mailing address)
P.O. Box 37826
Cincinnati, Ohio 45222
(shipping address)
10 Knollcrest Drive
Reading, Ohio 45237
Tel: 513-761-5432 TWX: 810-461-2670

SHERIDAN SALES COMPANY
2501 Neff Road
Dayton, Ohio 45414
Tel: 513-223-3332 TWX: 810-459-1732

OKLAHOMA
HALLMARK ELECTRONICS
4846 S. 83rd East Avenue
Tulsa, Oklahoma 74145
Tel: 918-835-8458 TWX: 910-845-2290

RADIO INC. INDUSTRIAL ELECTRONICS
1000 S. Main
Tulsa, Oklahoma 74119
Tel: 918-587-9123

PENNSYLVANIA
HALLMARK ELECTRONICS, INC.
458 Pike Road
Huntingdon Valley, Pennsylvania 19006
Tel: 215-355-7300 TWX: 510-667-1727

PIONEER/DELEWARE VALLEY ELECTRONICS
141 Gibraltar Road
Horsham, Pennsylvania 19044
Tel: 215-674-4000 TWX: 510-665-6778

PIONEER ELECTRONICS, INC.
560 Alpha Drive
Pittsburgh, Pennsylvania 15238
Tel: 412-782-2300 TWX: 710-795-3122

SCHWEBER ELECTRONICS
101 Rock Road
Horsham, Pennsylvania 19044
Tel: 215-441-0600

SHERIDAN SALES COMPANY
4297 Greensburgh Pike
Suite 3114
Pittsburgh, Pennsylvania 15221
Tel: 412-351-4000

SOUTH CAROLINA
DIXIE ELECTRONICS, INC.
P.O. Box 408 (Zip Code 29202)
1900 Barnwell Street
Columbia, South Carolina 29201
Tel: 803-779-5332

TEXAS
ALLIED ELECTRONICS
401 E. 8th Street
Fort Worth, Texas 76102
Tel: 817-336-5401

CRAMER ELECTRONICS
13740 Midway Road, Suite 700
Dallas, Texas 75240
Tel: 214-661-9300

HALLMARK ELECTRONICS CORP.
10109 McKalla Place Suite F
Austin, Texas 78758
Tel: 512-837-2814

HALLMARK ELECTRONICS
9333 Forest Lane
Dallas, Texas 75231
Tel: 214-234-7300

HALLMARK ELECTRONICS, INC.
8000 Westglen
Houston, Texas 77063
Tel: 713-781-6100

HAMILTON/AVNET ELECTRONICS
4445 Sigma Road
Dallas, Texas 75240
Tel: 214-661-8661
Telex: HAMAVLECB DAL 73-0511

HAMILTON/AVNET ELECTRONICS
3939 Ann Arbor
Houston, Texas 77042
Tel: 713-780-1771
Telex: HAMAVLECB HOU 76-2589

SCHWEBER ELECTRONICS, INC.
14177 Proton Road
Dallas, Texas 75240
Tel: 214-661-5010 TWX: 910-860-5493

SCHWEBER ELECTRONICS, INC.
7420 Harwin Drive
Houston, Texas 77036
Tel: 713-784-3600 TWX: 910-881-1109

STERLING ELECTRONICS
4201 Southwest Freeway
Houston, Texas 77027
Tel: 713-627-9800 TWX: 901-881-5042
Telex: STELECO HOUA 77-5299

UTAH
CENTURY ELECTRONICS
2258 S. 2700 West
Salt Lake City, Utah 84119
Tel: 801-972-6969 TWX: 910-925-5686

HAMILTON/AVNET ELECTRONICS
1585 W. 2100 South
Salt Lake City, Utah 84119
Tel: 801-972-2800
TWX: None — use 910-379-6486
(Regional Hq. in Mt. View, Ca.)

WASHINGTON
HAMILTON/AVNET ELECTRONICS
13407 Northrup Way
Bellevue, Washington 98005
Tel: 206-746-8750 TWX: 910-443-2449

LIBERTY ELECTRONICS
1750 132nd Avenue N.E.
Bellevue, Washington 98005
Tel: 206-453-8300 TWX: 910-444-1379

RADAR ELECTRONIC CO., INC.
168 Western Avenue W.
Seattle, Washington 98119
Tel: 206-282-2511 TWX: 910-444-2052

WISCONSIN
HAMILTON/AVNET ELECTRONICS
2975 Moorland Road
New Berlin, Wisconsin 53151
Tel: 414-784-4510

MARSH ELECTRONICS, INC.
1563 S. 100 Street
Milwaukee, Wisconsin 53214
Tel: 414-475-6000

CANADA
CAM GARD SUPPLY LTD.
640 42nd Avenue S.E.
Calgary, Alberta, T2G 1Y6, Canada
Tel: 403-287-0520 Telex: 03-822811

CAM GARD SUPPLY LTD.
10505 111th Street
Edmonton, Alberta T5H 3E8, Canada
Tel: 403-426-1805 Telex: 03-72960

CAM GARD SUPPLY LTD.
4910 52nd Street
Red Deer, Alberta, T4N 2C8, Canada
Tel: 403-346-2088

CAM GARD SUPPLY LTD.
825 Notre Dame Drive
Kamloops, British Columbia, V2C 5N8, Canada
Tel: 604-372-3338

CAM GARD SUPPLY LTD.
1777 Ellice Avenue
Winnepeg, Manitoba, R3H 0W5, Canada
Tel: 204-786-8401 Telex: 07-57622

CAM GARD SUPPLY LTD
Rookwood Avenue
Fredericton, New Brunswick, E3B 4Y9, Canada
Tel: 506-455-8891

CAM GARD SUPPLY LTD.
15 Mount Royal Blvd.
Moncton, New Brunswick, E1C 8N6, Canada
Tel: 506-855-2200

CAM GARD SUPPLY LTD.
3065 Robie Street
Halifax, Nova Scotia, B3K 4P6, Canada
Tel: 902-454-8581 Telex: 01-921528

CAM GARD SUPPLY LTD.
1303 Scarth Street
Regina, Saskatchewan, S4R 2E7, Canada
Tel: 306-525-1317 Telex: 07-12667

CAM GARD SUPPLY LTD.
1501 Ontario Avenue
Saskatoon, Saskatchewan, S7K 1S7, Canada
Tel: 306-652-6424 Telex: 07-42825

ELECTRO SONIC INDUSTRIAL SALES
(TORONTO) LTD.
1100 Gordon Baker Rd.
Willowdale, Ontario, M2H 3B3, Canada
Tel: 416-494-1666
Telex: ESSCO TOR 06-22030

FUTURE ELECTRONICS CORPORATION
130 Albert Street
Ottawa, Ontario, K1P 5G4, Canada
Tel: 613-232-7757

FUTURE ELECTRONICS CORPORATION
44 Fasket Drive, Unit 24
Rexdale, Ontario, M9W 1K5, Canada
Tel: 416-677-7820

FUTURE ELECTRONICS CORPORATION
5647 Ferrier Street
Montreal, Quebec, H4P 2K5, Canada
Tel: 514-735-5775

HAMILTON/AVNET INTERNATIONAL
(CANADA) LTD.
6291 Dorman Rd., Unit 16
Mississauga, Ontario, L4V 1H2, Canada
Tel: 416-677-7432 TWX: 610-492-8867

HAMILTON/AVNET INTERNATIONAL
(CANADA) LTD.
1735 Courtwood Crescent
Ottawa, Ontario, K1Z 5L9, Canada
Tel: 613-226-1700

HAMILTON/AVNET INTERNATIONAL
(CANADA) LTD.
2670 Paulus Street
St. Laurent, Quebec, H4S 1G2, Canada
Tel: 514-331-6443 TWX: 610-421-3731

R.A.E. INDUSTRIAL ELECTRONICS, LTD.
1629 Main Street
Vancouver, British Columbia, V6A 2W5, Canada
Tel: 604-687-2621 TWX: 610-929-3065
Telex: RAE-VCR 04-54550

SEMAD ELECTRONICS LTD.
625 Marshall Ave., Suite 2
Dorval, Quebec, H9P 1E1, Canada
Tel: 514-636-4614 TWX: 610-422-3048

SEMAD ELECTRONICS LTD.
1111 Finch Avenue W., Suite 102
Downsview, Ontario, M3J 2E5, Canada
Tel: 416-635-9880 TWX: 610-492-2510

SEMAD ELECTRONICS LTD.
1485 Laperriere Avenue
Ottawa, Ontario, K1Z 7S8, Canada
Tel: 613-722-6571 TWX: 610-562-8966

FAIRCHILD SALES REPRESENTATIVES
UNITED STATES AND CANADA

ALABAMA
CARTWRIGHT & BEAN, INC
2400 Bob Wallace Ave., Suite 201
Huntsville, Alabama 35805
Tel 205-533-3509

CALIFORNIA
CELTEC COMPANY
18009 Sky Park Circle Suite B
Irvine, California 92715
Tel: 714-557-5021 TWX: 910-595-2512

CELTC COMPANY
7867 Convoy Court, Suite 312
San Diego, California 92111
Tel: 714-279-7961 TWX: 910-335-1512

MAGNA SALES, INC.
3333 Bowers Avenue
Suite 295
Santa Clara, California 95051
Tel: 408-985-1750 TWX: 910-338-0241

COLORADO
SIMPSON ASSOCIATES, INC.
2552 Ridge Road
Littleton, Colorado 80120
Tel: 303-794-8381 TWX: 910-935-0719

CONNECTICUT
PHOENIX SALES COMPANY
389 Main Street
Ridgefield, Connecticut 06877
Tel: 203-438-9644 TWX: 710-467-0662

FLORIDA
LECTROMECH, INC.
303 Whooping Loop
Altamonte Springs, Florida 32701
Tel: 305-831-1577 TWX: 810-853-0262

LECTROMECH, INC.
2741 North 29th Avenue, Suite 218
Hollywood, Florida 33020
Tel: 305-920-2291 TWX: 510-954-9793

LECTROMECH, INC.
2280 U.S. Highway 19 North
Suite 119 Bldg. L
Clearwater, Florida 33515
Tel: 813-726-0541

GEORGIA
CARTWRIGHT & BEAN, INC.
P.O. Box 52846 (Zip Code 30355)
90 W. Wieuca Square, Suite 155
Atlanta, Georgia 30342
Tel: 404-255-5262 TWX: 810-751-3220

ILLINOIS
MICRO SALES, INC.
2258-B Landmeir Road
Elk Grove Village, Illinois 60007
Tel: 312-956-1000 TWX: 910-222-1833

INDIANA
LESLIE M. DEVOE COMPANY
4215 E. 82nd Street Suite D
Indianapolis, Indiana 46250
Tel: 317-842-3245 TWX: 810-260-1435

KANSAS
B.C. ELECTRONIC SALES, INC.
P.O. Box 12485, Zip 66212
8190 Nieman Road
Shawnee Mission, Kansas 66214
Tel: 913-888-6680 TWX: 910-749-6414

B.C. ELECTRONIC SALES
6405 E. Kellogg
Suite 14
Wichita, Kansas 67207
Tel: 316-684-0051

MARYLAND
DELTA III ASSOCIATES
1000 Century Plaza Suite 225
Columbia, Maryland 21044
Tel: 301-730-1510 TWX: 710-826-9654

MASSACHUSETTS
SPECTRUM ASSOCIATES, INC.
888 Worcester Street
Wellesley, Massachusetts 02181
Tel: 617-237-2796 TWX: 710-348-0424

MICHIGAN
RATHSBURG ASSOCIATES
16621 E. Warren Avenue
Detroit, Michigan 48224
Tel: 313-882-1717 Telex: 23-5229

MINNESOTA
PSI COMPANY
720 W. 94th Street
Minneapolis, Minnesota 55420
Tel: 612-884-1777 TWX: 910-576-3483

MISSISSIPPI
CARTWRIGHT & BEAN, INC.
P.O. Box 16728
5150 Keele Street
Jackson, Mississippi 39206
Tel: 601-981-1368

MISSOURI
B.C. ELECTRONIC SALES, INC.
300 Brookes Drive, Suite 206
Hazelwood, Missouri 63042
Tel: 314-731-1255 TWX: 910-762-0600

NEW JERSEY
LORAC SALES, INC.
580 Valley Road
Wayne, New Jersey 07470
Tel: 201-696-8875 TWX: 710-988-5846

NEW YORK
LORAC SALES, INC.
550 Old Country Road, Room 410
Hicksville, New York 11801
Tel: 516-681-8746 TWX: 510-224-6480

TRI-TECH ELECTRONICS, INC.
3215 E. Main Street
Endwell, New York 13760
Tel: 607-754-1094 TWX: 510-252-0891

TRI-TECH ELECTRONICS, INC.
590 Perinton Hills Office Park
Fairport, New York 14450
Tel: 716-223-5720

TRI-TECH ELECTRONICS, INC.
6836 E. Genesee Street
Fayetteville, New York 13066
Tel: 315-446-2881 TWX: 710-541-0604

TRI-TECH ELECTRONICS, INC.
19 Davis Avenue
Poughkeepsie, New York 12603
Tel: 914-473-3880

NORTH CAROLINA
CARTWRIGHT & BEAN, INC.
1165 Commercial Ave.
Charlotte, North Carolina 28205
Tel: 704-377-5673

CARTWRIGHT & BEAN, INC.
P.O. Box 18465
3948 Browning Place
Raleigh, North Carolina 27609
Tel: 919-781-6560

OHIO
THE LYONS CORPORATION
4812 Frederick Road, Suite 105
Dayton, Ohio 45414
Tel: 513-278-0714

THE LYONS CORPORATION
6151 Wilson Mills Road, Suite 101
Highland Heights, Ohio 44143
Tel: 216-461-8288

OKLAHOMA
TECHNICAL MARKETING
9717 E. 42nd Street, Suite 221
Tulsa, Oklahoma 74101
Tel: 918-622-5984

OREGON
QUADRA CORPORATION
19145 S.W. Murphy Ct.
Aloha, Oregon 97005
Tel: 503-225-0350 TWX: 910-449-2592

PENNSYLVANIA
BGR ASSOCIATES
2500 Office Center
2500 Maryland Road
Willow Grove, Pennsylvania 19090
Tel: 215-657-3301

TENNESSEE
CARTWRIGHT & BEAN, INC.
P.O. Box 4760
560 S. Cooper Street
Memphis, Tennessee 38104
Tel: 901-276-4442

CARTWRIGHT & BEAN INC
8705 Unicorn Drive
Suite B120
Knoxville, Tennessee 37919
Tel 615-693-7450

TEXAS
TECHNICAL MARKETING
3320 Wiley Post Road
Charrollton, Texas 75220
Tel 214-387-3601 TWX 910-860-5158

TECHNICAL MARKETING
6430 Hillcroft, Suite 104
Houston, Texas 77036
Tel: 713-777-9228

UTAH
SIMPSON ASSOCIATES, INC
P.O. Box 151430
Salt Lake City, Utah 84115
Tel: 801-571-7877

WASHINGTON
QUADRA CORPORATION
14825 N.E. 40th Street
Suite 340
Redmond, Washington 98052
Tel: 206-883-3550 TWX: 910-449-2592

WISCONSIN
LARSEN ASSOCIATES
10855 West Potter Road
Wauwatosa, Wisconsin 53226
Tel: 414-258-0529 TWX: 910-262-3160

CANADA
R.N. LONGMAN SALES, INC. (L.S.I.)
1715 Neyerside Drive
Suite 1
Mississauga, Ontario, L5T 1C5 Canada
Tel: 416-625-6770 TWX: 610-492-8976

R.N. LONGMAN SALES, INC. (L.S.I.)
16891 Hymus Blvd.
Kirkland, Quebec
H9H 3L4 Canada
Tel: 514-694-3911
TWX: 610-422-3028

FAIRCHILD SALES OFFICES
UNITED STATES AND CANADA

ALABAMA
Huntsville Office
Executive Plaza
Suite 107
4717 University Drive, N.W.
Huntsville, Alabama 35805
Tel: 205-837-8906

ARIZONA
Phoenix Office
4414 N. 19th Avenue 85015
Suite G
Tel: 602-264-4948 TWX: 910-951-1544

CALIFORNIA
Los Angeles Office*
Crocker Bank Bldg.
15760 Ventura Blvd. Suite 1027
Encino 91436
Tel: 213-990-9800 TWX: 910-495-1776

Santa Ana Office*
2101 E. 4th Street 92705
Bldg. B, Suite 185
Tel: 714-558-1881 TWX: 910-595-1109

Santa Clara Office*
3333 Bowers Avenue
Suite 299
Santa Clara, 95051
Tel: 408-987-9530 TWX: 910-338-0241

FLORIDA
Ft. Lauderdale Office
Executive Plaza
Suite 300-B
1001 Northwest 62nd Street
Ft. Lauderdale, Florida 33309
Tel: 305-771-0320 TWX: 510-955-4098

Orlando Office*
Crane's Roost Office Park
303 Whooping Loop
Altamonte Springs 32701
Tel: 305-834-7000 TWX: 810-850-0152

ILLINOIS
Chicago Office
The Tower - Suite 610
Rolling Meadows 60008
Tel: 312-640-1000

INDIANA
Ft. Wayne Office
2118 Inwood Drive 46805
Suite 111
Tel: 219-483-6453 TWX: 810-332-1507

Indianapolis Office
Room 205
7202 N. Shadeland 46250
Tel: 317-849-5412 TWX: 810-260-1793

KANSAS
Kansas City Office
Corporate Woods
10875 Grandview, Suite 2255
Overland Park 66210
Tel: 913-649-3974

MARYLAND
Columbia Office*
1000 Century Plaza
Suite 225
Columbia, Maryland 21044
Tel: 301-730-1510 TWX: 710-826-9654

MASSACHUSETTS
Boston Office*
888 Worcester Street
Wellesley Hills 02181
Tel: 617-237-3400 TWX: 710-348-0424

MICHIGAN
Detroit Office*
Johnston Building, Suite 24
20793 Farmington Road
Farmington Hills 48024
Tel: 313-478-7400 TWX: 810-242-2973

MINNESOTA
Minneapolis Office*
7600 Parklawn Avenue
Room 251
Edina 55435
Tel: 612-835-3322 TWX: 910-576-2944

NEW JERSEY
Wayne Office*
580 Valley Road 07490
Suite 1
Tel: 201-696-7070 TWX: 710-988-5846

NEW MEXICO
Alburquerque Office
2403 San Mateo N.E. 87110
Plaza 13
Tel: 505-265-5601 TWX: 910-379-6435

NEW YORK
Melville Office
275 Broadhollow Road 11746
Tel: 516-293-2900 TWX: 510-224-6480

Poughkeepsie Office
19 Davis Avenue 12603
Tel: 914-473-5730 TWX: 510-248-0030

Fairport Office
260 Perinton Hills Office Park
Fairport 14450
Tel: 716-223-7700

OHIO
Dayton Office
4812 Frederick Road 45414
Suite 105
Tel: 513-278-8278 TWX: 810-459-180[illegible]

PENNSYLVANIA
Philadelphia Office
2500 Office Center
2500 Maryland Road
Willow Grove, Pennsylvania 19090
Tel: 215-657-2711

TEXAS
Dallas Office
13771 N. Central Expressway 75231
Suite 809
Tel: 214-234-3391 TWX: 910-867-4757

Houston Office
6430 Hillcroft 77081
Suite 102
Tel: 713-771-3547 TWX: 910-881-8278

CANADA
Toronto Regional Office
Fairchild Semiconductor
1590 Matheson Blvd., Unit 26
Mississauga, Ontario L4W 1J1, Canada
Tel: 416-625-7070 TWX: 610-492-4311

6

*Field Application Engineer

FAIRCHILD SALES OFFICES INTERNATIONAL

AUSTRALIA
Fairchild Australia Pty Ltd.
72 Whiting Street
Artarmon 2064
New South Wales
Australia
Tel: Sydney (02)-438-2733

(mailing address)
P.O. Box 450
North Sydney 2060
New South Wales
Australia

AUSTRIA AND EASTERN EUROPE
Fairchild Electronics
A-1010 Wien
Schwedenplatz 2
Tel: 0222 635821 Telex: 75096

BRAZIL
Fairchild Semicondutores Ltda
Caixa Postal 30407
Rua Alagoas, 663
01242 Sao Paulo, Brazil
Tel: 66-9092 Telex: 011-23831
Cable: FAIRLEC

FRANCE
Fairchild Camera & Instrument S.A.
121, Avenue d'Italie
75013 Paris, France
Tel: 331-584-55 66
Telex: 0042 200614 or 260937

GERMANY
Fairchild Camera and Instrument (Deutschland)
Daimlerstr 15
8046 Garching Hochbruck
Munich, Germany
Tel: (089) 320031 Telex: 52 4831 fair d

Fairchild Camera and Instrument (Deutschland)
Koenigsworther Strasse 23
3000 Hannover
W-Germany
Tel: 0511 17844 Telex: 09 22922

Fairchild Camera and Instrument (Deutschland)
Postrstrasse 37
7251 Leonberg
W-Germany
Tel: 07152 41026 Telex: 07 245711

Fairchild Camera and Instrument (Deutschland)
Waldluststrasse 1
8500 Nuernberg
W-Germany
Tel: 0911 407005 Telex: 06 23665

HONG KONG
Fairchild Semiconductor (HK) Ltd.
135 Hoi Bun Road
Kwun Tong
Kowloon, Hong Kong
Tel: K-890271 Telex: HKG-531

ITALY
Fairchild Semiconduttori, S.P.A.
Via Flamenia Vecchia 653
00191 Roma, Italy
Tel: 06 327 4006 Telex: 63046 (FAIR ROM)

Fairchild Semiconduttori S.P.A.
Via Rosellini, 12
20124 Milano, Italy
Tel: 02 6 88 74 51 Telex: 36522

JAPAN
Fairchild Japan Corporation
Pola Bldg.
1-15-21, Shibuya
Shibuya-Ku, Tokyo 150
Japan
Tel: 03 400 8351 Telex: 242173

KOREA
Fairchild Semikor Ltd.
K2 219-6 Gari Bong Dong
Young Dung Po-Ku
Seoul 150-06, Korea
Tel: 85-0067 Telex: FAIRKOR 22705

(mailing address)
Central P.O. Box 2806

MEXICO
Fairchild Mexicana S.A.
Blvd. Adolofo Lopez Mateos No. 163
Mexico 19, D.F.
Tel: 905-563-5411 Telex: 017-71-038

SCANDINAVIA
Fairchild Semiconductor AB
Svartengsgatan 6
S-11620 Stockholm
Sweden
Tel: 8-449255 Telex: 17759

SINGAPORE
Fairchild Semiconductor Pty Ltd.
No. 11, Lorong 3
Toa Payoh
Singapore 12
Tel: 531-066 Telex: FAIRSIN-RS 21376

TAIWAN
Fairchild Semiconductor (Taiwan) Ltd.
Hsietsu Bldg., Room 502
47 Chung Shan North Road
Sec. 3 Taipei, Taiwan
Tel: 573205 thru 573207

BENELUX
Fairchild Semiconductor
Paradijslaan 39
Eindhoven, Holland
Tel: 00-31-40-446909 Telex: 00-1451024

UNITED KINGDOM
Fairchild Camera and Instrument (UK) Ltd.
Semiconductor Division
230 High Street
Potters Bar
Hertfordshire EN6 5BU
England
Tel: 0707 51111 Telex: 262835

Fairchild Semiconductor Ltd.
17 Victoria Street
Craigshill
Livingston
West Lothian, Scotland - EH54 5BG
Tel: Livingston 0506 32891 Telex: 72629

FAIRCHILD

Fairchild reserves the right to make changes in the circuitry or specifications in this book at any time without notice.
Manufactured under one of the following U.S. Patents: 2981877, 3015048, 3064167, 3108359, 3117260; other patents pending.
Fairchild cannot assume responsibility for use of any circuitry described other than circuitry entirely embodied in a Fairchild product.
No other circuit patent licenses are implied.
Printed in U.S.A./282-12-0001-078 25M September 1978