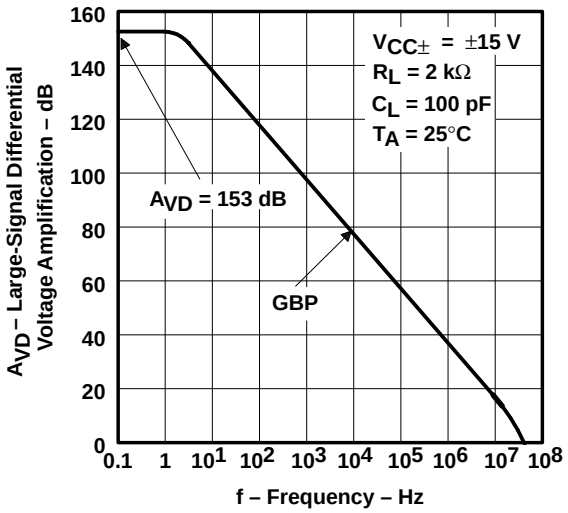
- **Outstanding Combination of DC Precision and AC Performance:**
  - **Gain-Bandwidth Product . . . 50 MHz Typ**
  - **V_n . . . 3.3 nV/$\sqrt{Hz}$ at f = 10 Hz Typ, 2.5 nV/$\sqrt{Hz}$ at f = 1 kHz Typ**
  - **V_{IO} . . . 25 μV Max at T_A = 25°C**
  - **A_{VD} . . . 45 V/μV Typ With R_L = 2 kΩ, 19 V/μV Typ With R_L = 600 Ω**
- **Available in Standard Pinout Small-Outline Package**
- **Output Features Saturation Recovery Circuitry**
- **Macromodels and Statistical information Included**

description

The TLE2037 and TLE2037A combine innovative circuit design expertise and high-quality process control techniques to produce a level of ac performance and dc precision previously unavailable in single operational amplifiers. Using the Texas Instruments state-of-the-art Excalibur process, these devices allow upgrades to systems that use lower-precision devices.

The TLE2037 and TLE2037A are decompensated versions of the TLE2027 and TLE2027A and are stable to a close-loop gain of 5. In the area of dc precision, these parts offer maximum offset voltages of 100 μV and 25 μV, respectively, common-mode rejection ratio of 131 dB (typ), supply voltage rejection ratio of 144 dB (typ), and dc gain of 45 V/μV (typ).

LARGE-SIGNAL DIFFERENTIAL VOLTAGE AMPLIFICATION vs FREQUENCY



The ac performance is highlighted by a typical gain-bandwidth product specification of 50 MHz, 50° of phase margin, and noise voltage specifications of 3.3 nV/$\sqrt{Hz}$ and 2.5 nV/$\sqrt{Hz}$ at frequencies of 10 Hz and 1 kHz, respectively.

Both the TLE2037 and TLE2037A are available in a wide variety of packages, including the industry-standard 8-pin small-outline version for high-density system applications. The C-suffix devices are characterized for operation from 0°C to 70°C. The I-suffix devices are characterized for operation from – 40°C to 105°C. The M-suffix devices are characterized for operation over the full military temperature range of – 55°C to 125°C.

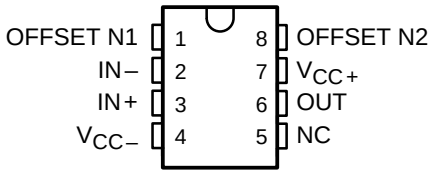
AVAILABLE OPTIONS

T_A	V_{IO}max AT 25°C	PACKAGED DEVICES				CHIP FORM (Y)
		SMALL OUTLINE (D)	CHIP CARRIER (FK)	CERAMIC DIP (JG)	PLASTIC DIP (P)	
0°C to 70°C	25 μV 100 μV	TLE2037ACD TLE2037CD	–	–	TLE2037ACP TLE2037CP	TLE2037Y –
–40°C to 105°C	25 μV 100 μV	TLE2037AID TLE2037ID	–	–	TLE2037AIP TLE2037IP	–
–55°C to 125°C	25 μV 100 μV	TLE2037AMD TLE2037MD	TLE2037AMFK TLE2037MFK	TLE2037AMJG TLE2037MJG	TLE2037AMP TLE2037MP	–

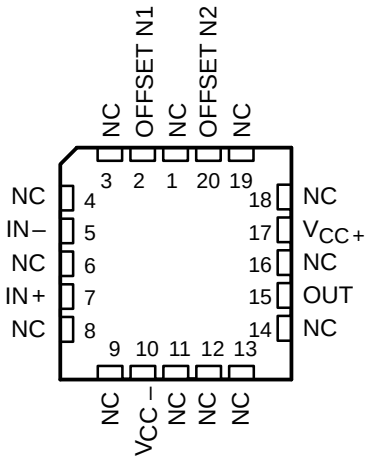
The D packages are available taped and reeled. Add R suffix to device type (e.g., TLE2037ACDR). Chips are tested at 25°C.

Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

D, JG, OR P PACKAGE
(TOP VIEW)

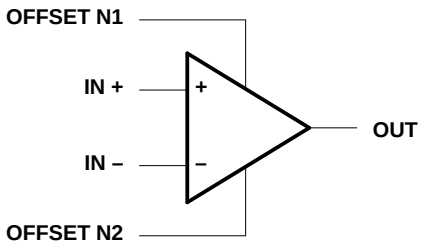


FK PACKAGE
(TOP VIEW)



NC – No internal connection

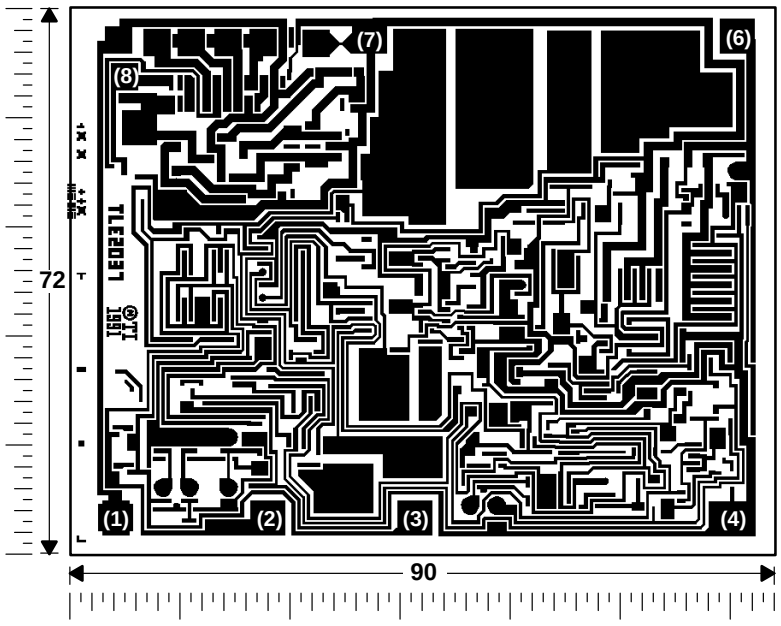
symbol

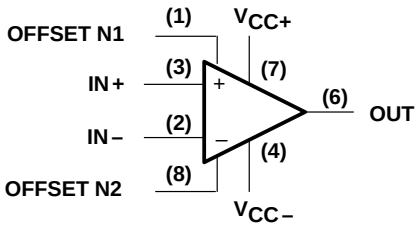


TLE2037 chip information

This chip, when properly assembled, displays characteristics similar to the TLE2037C. Thermal compression or ultrasonic bonding may be used on the doped-aluminum bonding pads. Chips may be mounted with conductive epoxy or a gold-silicon preform.

BONDING PAD ASSIGNMENTS





CHIP THICKNESS: 15 TYPICAL

BONDING PADS: 4 × 4 MILS MINIMUM

T_J max = 150°C

TOLERANCES ARE ±10%.

ALL DIMENSIONS ARE IN MILS.

PIN (4) IS INTERNALLY CONNECTED TO BACKSIDE OF CHIP.

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