

**Features**

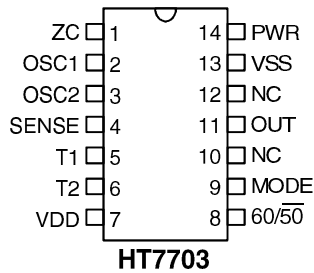
- Wide operating voltage: 8V~12V
- Provided brightness control of incandescent lamps without using mechanical switches
- Reducing the power dissipation
- Operating on 60/50 Hz line frequency
- Touch sensitive sensor input

**General Description**

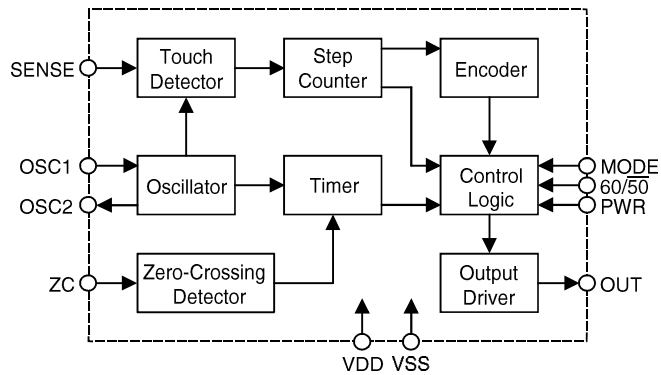
The HT7703 is a monolithic CMOS circuit designed for brightness control of incandescent lamps. The output of the HT7703 triggers a triac connected in series with the lamp. There

are four specified levels of brightness through which the output can be stepped. The stepping function may be selected to operate in one of two different modes by a MODE selector.

**Pin Assignment**



**Block Diagram**



**Pin Description**

Pin No.	Pin Name	Description
1	ZC	Zero crossing input
2	OSC1	Oscillator 1
3	OSC2	Oscillator 2
4	SENSE	Touch sense input
5	T1	Touch signal detector 1
6	T2	Touch signal detector 2
7	VDD	Positive power supply
8	60/50	60/50 Hz selection
9	MODE	Mode selection
10	NC	No connection
11	OUT	Trigger output
12	NC	No connection
13	VSS	Negative power supply
14	PWR	Power on reset

**Electrical Characteristics**

Symbol	Parameter	Test Condition		Min.	Typ.	Max.	Unit
		VDD	Condition				
V <sub>DD</sub>	Operation Voltage	—	—	8	10	12	V
I <sub>DD</sub>	Operation Current	10V	No load	—	0.5	1	mA
V <sub>IL</sub>	“Low” Input Voltage	10V	—	—	—	2	V
V <sub>IH</sub>	“High” Input Voltage	10V	—	8	—	—	V
R <sub>PU1</sub>	Pull-Up Resistance (60/50, MODE)	10V	V <sub>I</sub> =0V	400	600	800	KΩ
R <sub>PU2</sub>	Pull-Up Resistance (PWR)	10V	V <sub>I</sub> =0V	1	1.5	2	MΩ
I <sub>OL</sub>	Sink Current (OUT)	10V	V <sub>OUT</sub> =1V	25	80	—	mA
I <sub>OH</sub>	Source Current (OUT)	10V	V <sub>OUT</sub> =9V	-20	-60	—	μA
F <sub>CLK</sub>	Clock Frequency	10V	R <sub>osc</sub> =68K	—	180K	—	Hz

**Function Description**

The operating mode of the circuit is selected by a MODE input as follows:

MODE	Brightness Sequence
VSS	→ Off → Low → Medium → Maximum → Medium → Low →
Floating	→ Off → Low → Medium → Maximum →

After power on, the initial state stays off. Following that, whenever the sensor plate is touched, the output jumps to the next level of brightness.

**Application Circuit**

