HT2050
Five LAMP/LED Flash Driver

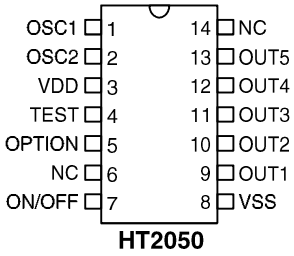
Features

- C-MOS Metal-Gate Process
- Operating voltage: 1.2V~4.5V
- Low stand-by current: 1μA at 3V
- A five lamp flash driver
- Random or sequence flash
- On/Off toggle control
- 1/10 duty cycle output
- A built-in oscillator
- Minimum external components

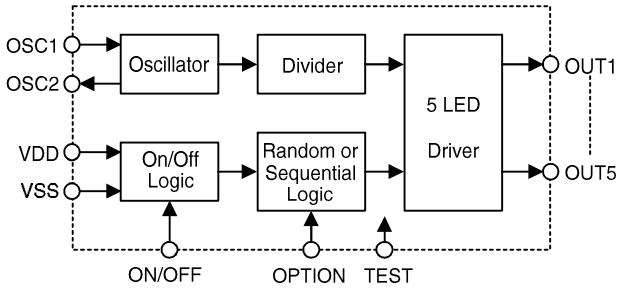
General Description

The HT2050 is a low cost, low-power CMOS fabricated LSI chip designed for lamp and LED flash drivers. It contains five flash outputs. Each flash output is with a 10mA capability that can implement random or sequential flashing controlled by a single option pin. The chip requires only one external resistor for normal applications. It is very suitable for use in products that require flashing lights, such as gift cards, Christmas decoration, etc.

Pin Assignment

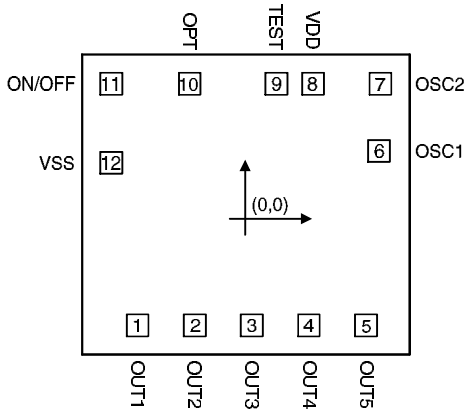


Block Diagram



Pad Coordinates

Unit: mil



Pad No.	X	Y	Pad No.	X	Y
1	–21.09	–20.9	7	26.55	26.5
2	–9.89	–20.9	8	13.35	26.5
3	1.31	–20.9	9	6.15	26.5
4	12.51	–20.9	10	–10.89	26.5
5	23.71	–20.9	11	–26.25	26.5
6	26.23	13.3	12	–26.25	10.98

Chip size: 64×59 (mil)^2

* The IC substrate should be connected to VDD in the PCB layout artwork.

Pad Description

Pad No.	Pad Name	I/O	Description
1	OUT1	O	Lamp/LED flash drive output
2	OUT2	O	Lamp/LED flash drive output
3	OUT3	O	Lamp/LED flash drive output
4	OUT4	O	Lamp/LED flash drive output
5	OUT5	O	Lamp/LED flash drive output
6	OSC1	I	Oscillator input
7	OSC2	O	Oscillator output
8	VDD	I	Positive power supply
9	TEST	I/O	For IC test only
10	OPTION	I	Random or sequence function selection
11	ON/OFF	I	Toggle ON/OFF control
12	VSS	I	Negative power supply, GND

Note: OPTION=VDD → Sequential Mode
OPTION=Open → Random Mode

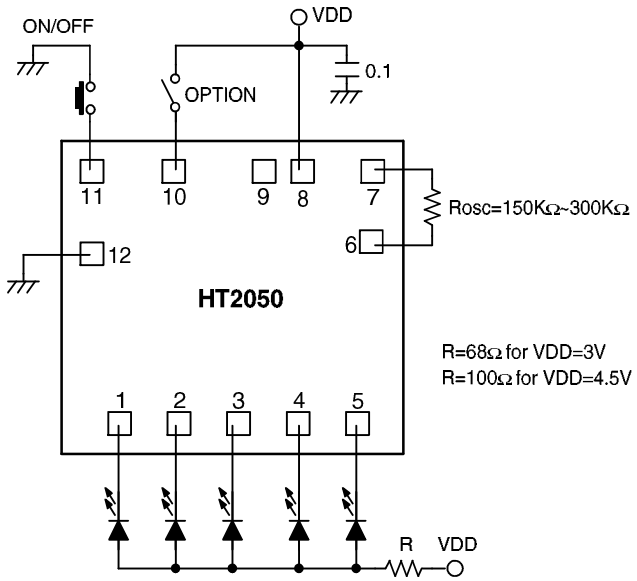
Absolute Maximum Ratings

Supply Voltage ..... –0.3V to 5V
Input/Output Voltage ... V_{SS}–0.3V to V_{DD}+0.3V
Storage Temperature..... –50°C to 125°C
Operating Temperature..... 0°C to 70°C

Electrical Characteristics

Symbol	Parameter	Test Condition		Min.	Typ.	Max.	Unit
		V_{DD}	Condition				
V_{DD}	Operating Voltage	—	—	1.2	3	4.5	V
I_{STB}	Stand-by Current	3V	—	—	1	2	μA
I_{DD}	Operating Current	3V	No load	—	200	500	μA
I_{OL}	Output Sink Current	1.5V	V_{OL}=0.5V	5	8	—	mA
		3V	V_{OL}=0.5V	10	15	—	mA
F_{OSC}	Oscillator Frequency	—	R=150K~300KΩ	—	64K	—	Hz

Application Circuit



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