

**IZ1517**

**FEATURES**

- Single 3V battery operation
- Random or sequence flash selection
- Low stand-by current
- Built in oscillator
- Oscillator's resistor internal or external (maskoption)
- Toggle ON/OFF control or one shot mode
- One shot duration is about 8 seconds (metal mask option)
- 1/10 ON/OFF duty cycle output
- Direct drive LEDs (open-drain output)

**PLAY MODE**

S1	S2	Mode
OPEN	OPEN	RANDOM, TOGGLE, ON/OFF
V <sub>SS</sub>	OPEN	RANDOM, ONE SHOT
OPEN	V <sub>DD</sub>	SEQUENCE, TOGGLE; ON/OFF
V <sub>SS</sub>	V <sub>DD</sub>	SEQUENCE, ONE SHOT

**ABSOLUTE MAXIMUM RATINGS**

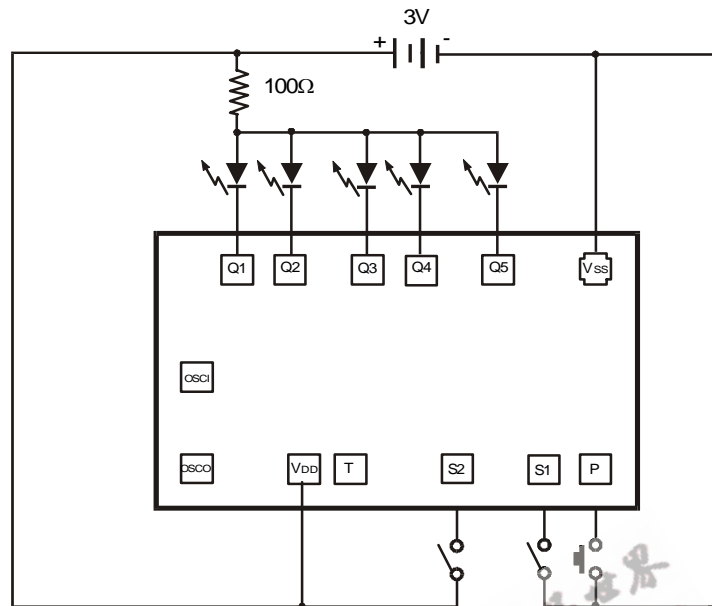
Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>DD</sub> - V <sub>SS</sub>	- 0.3 ~ + 5.0	V
Input Voltage	V <sub>IN</sub>	V <sub>SS</sub> - 0.2 ~ V <sub>DD</sub> + 0.2	V
Operating Temperature	T <sub>a</sub>	- 10 ~ + 60	°C
Storage Temperature	T <sub>stg</sub>	- 55 ~ + 125	°C

**ELECTRICAL CHARACTERISTICS**

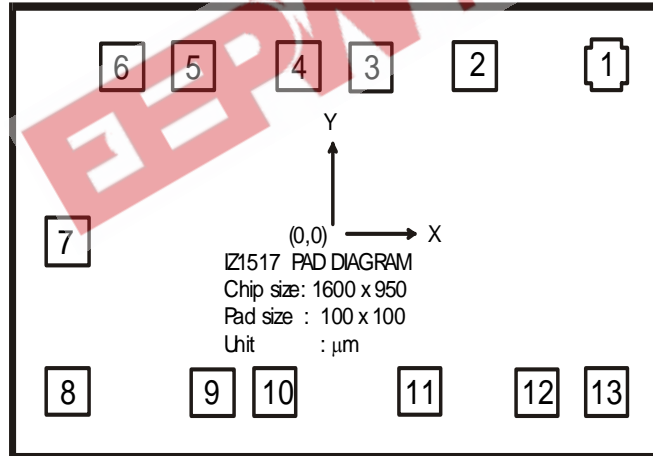
(T<sub>a</sub> = 25°C, V<sub>DD</sub> = 3.0V, V<sub>SS</sub> = 0V unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	V <sub>DD</sub>		2.4	3.0	3.6	V
Standby Current	I <sub>DD</sub>	No Playing S1, S2, P Open		0.1	2.5	μA
Operating Current		Playing Q1 - Q5 Open		50	100	μA
Input Current	S1	I <sub>IL</sub>	V <sub>IL</sub> = 0.5V	10	18	μA
	S2	I <sub>IH</sub>	V <sub>IH</sub> = 2.5V	10	18	
	P	I <sub>IL</sub>	V <sub>IL</sub> = 0.5V	10	18	
Output Current (Q1 - Q5)	I <sub>OL</sub>	V <sub>OL</sub> = 0.5V	5	8		mA
Oscillating Frequency	F <sub>OSC</sub>		70	100	130	KHz
Oscillating Start Voltage	V <sub>STR</sub>		2.4			V

TYPICAL APPLICATION CIRCUIT



PAD LAYOUT



PAD LOCATION

(Unit:  $\mu\text{m}$ )

No.	Pad Name	X	Y	No.	Pad Name	X	Y
1	V <sub>SS</sub>	674	349	8	OSCO	-666	-341
2	Q5	347	349	9	V <sub>DD</sub>	-306	-341
3	Q4	87	349	10	T	-145	-341
4	Q3	-90	349	11	S2	209	-341
5	Q2	-351	349	12	S1	500	-341
6	Q1	-528	349	13	P	674	-341
7	OSCI	-666	-22				

NOTE: The substrate is connected to V<sub>DD</sub>.