KK1503

FEATURES

- Single 3V battery operation
- Low stand-by current
- No external R-C component required for oscillation
- Direct drive LEDs (open-drain output)

FUNCTIONS

- One shot mode
- Flash Rate 4,7 Hz
- Duty Cycle 1/4
- Flash Duration 4.3 sec
- Alternative outputs

DESCRIPTION

The KK1503 is a CMOS LSI LEDs driver circuit.

An automatic cut off function is built in to lower the current consumption.

The metal mask can be modified in order to adjust the flashing rate, the duty cycle and the time of flash to a particular value.

Besides, two output LEDs can be flashed in phase or alternative by mask selection.

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{DD} - V_{SS}	- 0.3 ~ + 5.0	V
Input Voltage	V_{IN}	V_{SS} - 0.2 ~ V_{DD} + 0.2	V
Operating Temperature	T_a	- 10 ~ + 60	°C
Storage Temperature	T_{stg}	- 55 ~ + 125	°C

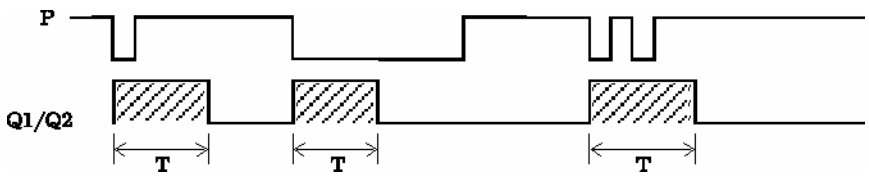
ELECTRICAL CHARACTERISTICS

(Ta = 25°C; V_{DD} = 3.0V; V_{SS} = 0V unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	V_{DD}		2.4	3.0	3.6	V
Standby	I_{DD1}	No Playing P Open		0.1	2.5	µA
Current Consumption	I_{DD2}	Playing Q1, Q2 Open		50	100	µA
Input Current (P)	I_{IL}	V_{IL} = 0.8V		10	50	µA
	I_{IH}	V_{IH} = 3.0V		0.5	1	µA
Output Current (Q1, Q2)	I_{OL}	V_{OL} = 0.5V	6	10		mA
Oscillating Frequency	F_{OSC}		54	76.8	100	KHz
Oscillating Start Voltage	V_{STR}		2.4			V

TIMING DIAGRAM

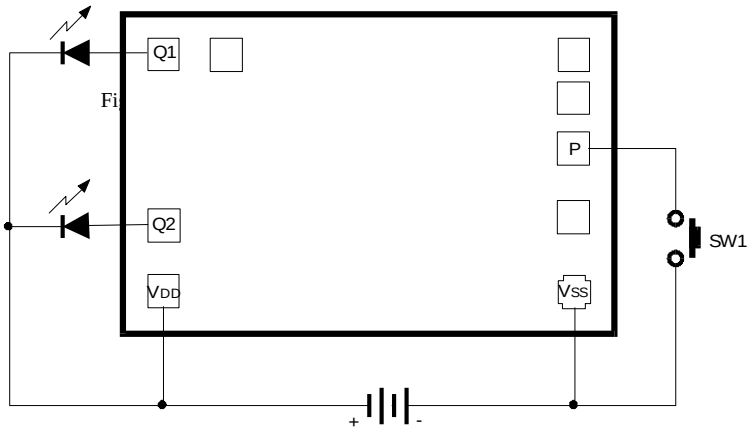
T = One Duration



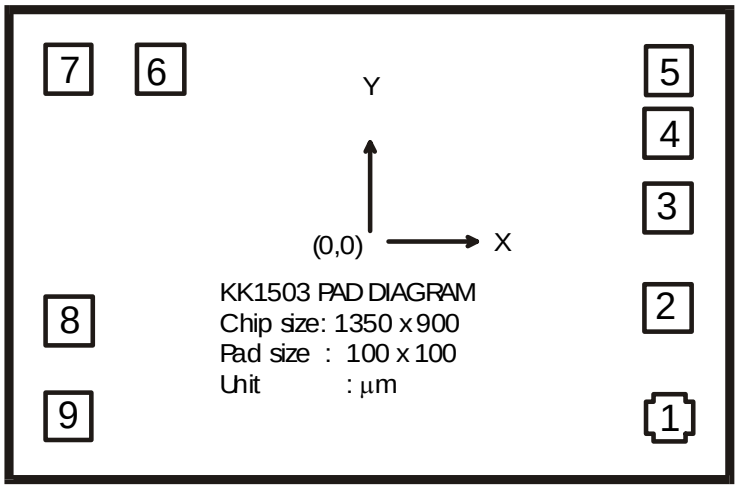
TYPICAL APPLICATION CIRCUIT

1. Connect the circuit as Fig.2

When the switch SW1 is pressed, the level mode I is selected and the LEDs will flash as in Fig.1



PAD LAYOUT



PAD LOCATION

(Unit: µm)

No.	Pad Name	X	Y	No.	Pad Name	X	Y
1	V_{SS}	543	-311	6	OSCO	-275	320
2	Not Connected	543	-151	7	Q1	-531	320
3	P	543	4	8	Q2	-531	-148
4	T1	543	164	9	V_{DD}	-531	-311
5	OSCI	543	324				

NOTE: The substrate is connected to V_{DD}.