

# LSI

# *LS3010*

*LED 4-bit MCU*

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## **Features**

- \* 5 LED direct drive.
- \* 4KHz/2KHz buzzer output.
- \* 6 input.
- \* 256 word program control.
- \* 16 x 4 bit RAM.
- \* Low power consumption
- \* 32768 Crystal oscillator/RC oscillator
- \* 1.5V or 3.0V operation.

## **General Description**

The LS3010 is a simple micro-controller for LED application. Internal ROM of 256x12, RAM 16x4. It has 5 direct LED output. Oscillator is RC/Crystal selected bonding option. Direct buzzer output.

## Pin Assignment

DESIGNATION	TYPE	DESCRIPTION
B0, B1	OUTPUT	Buzzer output
T1, T2,	INPUT	TEST pin
RO/OO	OUTPUT	RC / 32KHz oscillator output (mask option)
RI/OI	INPUT	RC / 32KHz oscillator input (mask option)
VDD	POWER	+3.0V power supply
GND	POWER	Ground
I[0:5]	INPUT(PL)	Input key
PB	INPUT(PH)	Power up reset
S[1:5]	OUTPUT	LED output

Note: (PH) - pull high; (OD) – open drain;

## D.C. Characteristic

(GND = 0V, Vdd = 3.0V, Ta = 25°C unless otherwise specified)

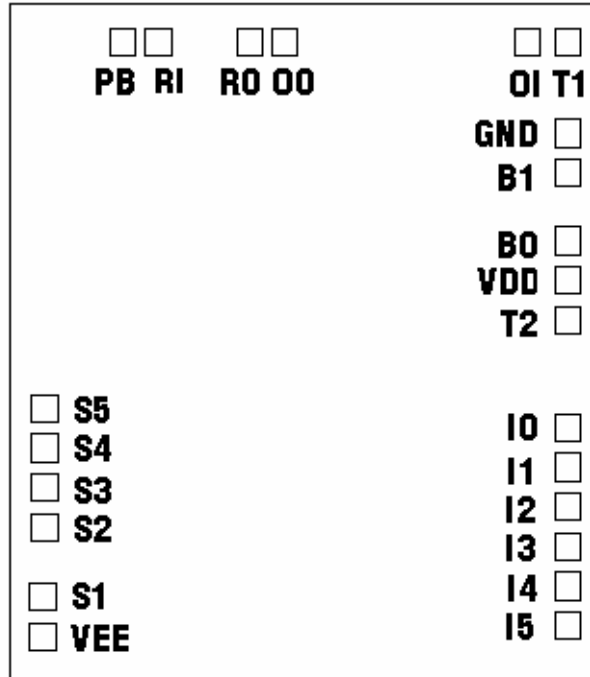
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Supply Voltage	Vdd	1.2	3.0	3.6	V	
Standby current	Istby			2	μA	Osc. stop
Operating current	Idd	-	20	50	μA	No load
OSC. built-in cap	Cd	-	20	-	pF	
OSC. Trimmer cap	Ctrim	5	-	35	pF	
Frequency stability	$\Delta f/f$	-	-	10	ppM	Vdd=3.0
Buzzer output current	Ib	500	-	-	μA	Vbd-Vss=0.5
LED current	Iled	15.0	-	-	mA	VLED=1.5V

**Pad Coordinate**

<b>PIN</b>	<b>X</b>	<b>Y</b>
S5	-1101	-159
S4	-1101	-300
S3	-1101	-438
S2	-1101	-576
S1	-1101	-839
VEE	-1101	-989
I5	1204	-947.5
I4	1204	-809.5
I3	1204	-671.5
I2	1204	-533.5
I1	1204	-395.5
I0	1204	-257.5
T2	1196.5	146
VDD	1195.5	284
B0	1195	430
B1	1195	737
GND	1193	890.5
T1	1194	1090.5
OI	1053	1089
O0	-127.5	1100
R0	-278	1100
RI	-643	1100
PB	-782	1100

**Pad Coordinate**

Note : Substrate connected to VDD, Chip Size : 2500um x 2600 um



**Application Circuit**

