

MM244 DATASHEET

LIGHT-SENSE – ON CHIP SENSOR

Three LED Brightness Variation Driver

Features

- On chip light sensor
- Wide battery operating voltage range: 2.4V to 5.1V
- Typical operating current : 60uA, Vdd = 3.0V
- LEDs brightness vary with environmental illumination
- Built-in three LED driver
- Adjustable maximum LED brightness level through external component
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General Description

AMOS Light-Sense with three LED brightness variation driver MM244 offers simplicity for applications on varying LED brightness by external illumination. The chip is a cost effective single chip solution with its on chip light sensor.

AMOS MM244 has three operating mode according to the external illumination level. LEDs are fully shut off when The AMOS MM244 is put under sufficiently bright environment and the LEDs saturate when the chip is put in sufficiently dark environment. In between, LEDs brightness varies with the illumination level. The shut off and saturation illumination level maybe be adjusted by Rrange and Rmin.

The built-in LED driver maximum brightness level are adjustable through external resistor RG1 and RG2. RG1 can decrease the maximum brightness level and RG2 can increase the maximum brightness level.

Pin Definition

Pin#	Pin Name	Function
1	LED3	connects to LED.
2	LED2	connects to LED.
3	LED1	connects to LED.
4	VSS	connects to negative terminal of power supply.
5	RRANGE	connects to Rrange.
6	RMIN	connects to Rmin.
7	RG1	connects to optional resistor RG1.
8	RG2	connects to optional resistor RG2.
9	SENIN	test pin.
10	VDD	connects to positive terminal of power supply.

Electrical Characteristics

Absolute Maximum Ratings

$V_{SS}=0V$, ambient temp. = 25 degree C

PARAMETER	SYMBOL	TEST CONDITIONS OR COMMENTS	LIMITS	UNIT
Supply Voltage	V_{DD}	-	5.1	V
Input Voltage	V_{IN}	-	-0.3 to $V_{DD} + 0.3$	V
Operation Temperature	T_{OP}	-	0 to 55	Deg C
Storage Temperature	T_{ST}	-	-25 to 125	Deg C

Absolute Maximum Rating are values beyond which the safety of the device cannot be guaranteed.

A.C. & D.C. Characteristics

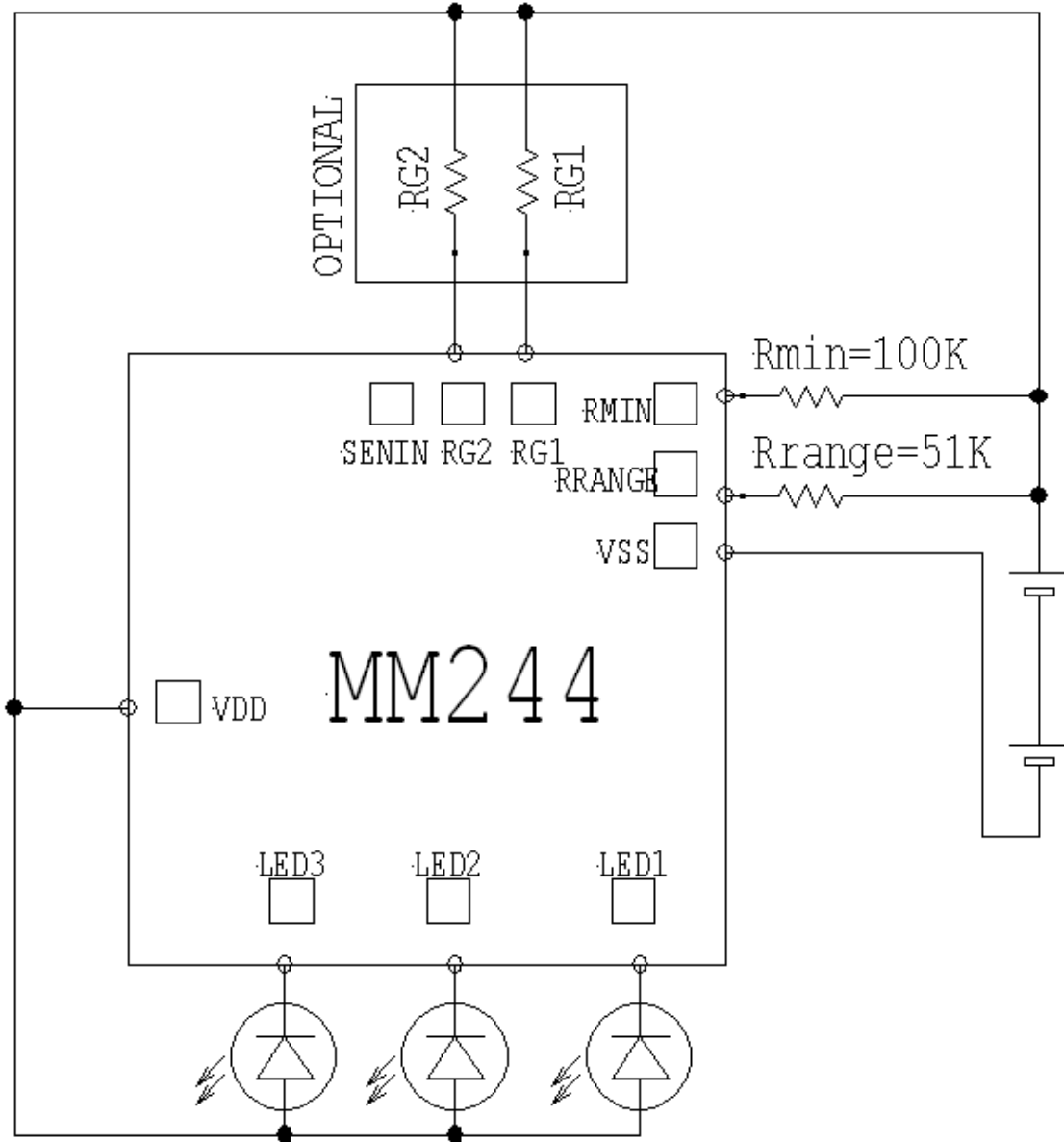
$V_{DD} = 3.0V$, $V_{SS} = 0V$, $R_{min}=100K\Omega$, $R_{range}=50K\Omega$, ambient temperature = 25 Degree C (unless otherwise specified).

PARAMETER	SYMBOL	TEST	LIMITS			
			MIN	TYP	MAX	
Operating Voltage	$V_{DD} - V_{SS}$	-	2.4	3.0	5.1	V
Operating Current (Max. Brightness)	I_{DD_BRIGHT}	No Load (1), $SENIN = V_{DD}$	-	60	100	μA
Operating Current (Fully Dark)	I_{DD_DARK}	No Load (1), $SENIN = V_{SS}$	-	350	-	μA
LED1/2/3 Output Low Current	$I_{OL(LED)}$	$V_{OL} = 0.5V$	-	8	-	mA

AMOS reserves the right to make changes in the circuitry and specification of the chip without notice, customers are advised to check AMOS on the latest information.

Note 1: Supply current is measured without resistor RG1 and RG2.

Typical Application Diagram



Remark : Substrate connects to Vdd.