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SPECIFICATION

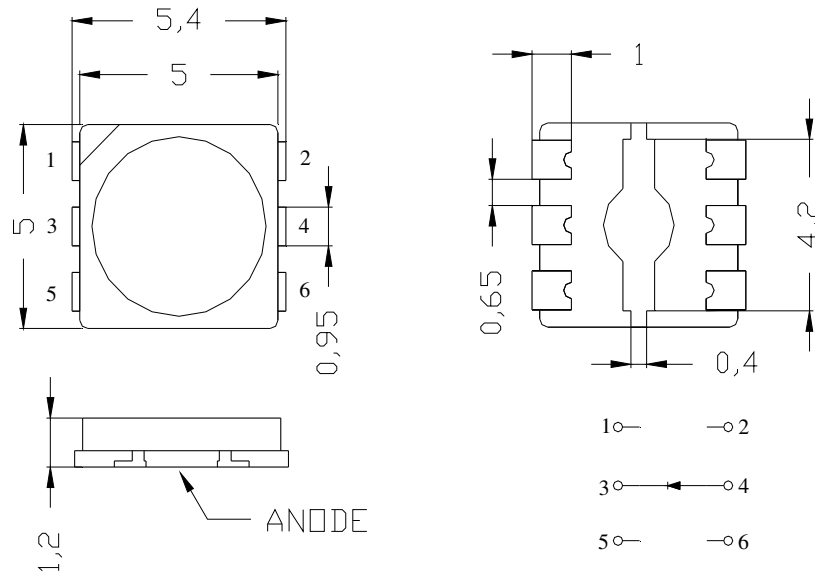
PART NO. : LPHMNR-HM-UDR3-S02

5.0 x 5.0mm SMD TYPE



Approved by	Checked by	Prepared by
王方波	王耀毅	蘇智良

Package Dimensions



Notes:

1. All dimensions are in mm.
2. Tolerance is ± 0.25 mm unless otherwise noted.

Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
LTHMNR-HM-UDR3-S02	InGaN/Metal Alloy	Warm White	Yellow Diffused

Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Rating	Unit
Power Dissipation	P _d	1330	mW
Reverse Voltage	V _r	5	V
D.C. Forward Current	I _f	350	mA
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	I _f (Peak)	700	mA
Operating Temperature Range	T _{opr.}	-40 to +85	°C
Storage Temperature Range	T _{stg.}	-40 to +100	°C
Soldering Temperature	T _{sl.}	Reflow Soldering: 260°C for 10 sec. Hand Soldering: 350°C for 3 sec.	
Electric Static Discharge Threshold (HBM) ★	ESD	6000	V

Electrical and Optical Characteristics:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	Φ _v	I _f =350mA	55	65		lm
Luminous Intensity	I _v	I _f =350mA		21		cd
Efficiency	η	I _f =350mA		56		lm/W
Forward Voltage	V _f	I _f =350mA		3.3	3.8	V
CIE Chromaticity Coordinates: X Axis	X	I _f =350mA		0.4578		
CIE Chromaticity Coordinates: Y Axis	Y	I _f =350mA		0.4101		
Correlated Colour Temperature	CCT	I _f =350mA	2600	-	2900	°K
Color Rendering Index	CRI	I _f =350mA		72		R _a
Reverse Current	I _r	V _r =5V	-	-	100	μA
Viewing Angle	2 θ 1/2	I _f =350mA		120		deg
Thermal Resistance Junction to Case	Rθ _{J-C}	I _f =350mA		15		°C/W

Notes: 1.The datas tested by IS tester.

2. Customer's special requirements are also welcome.

Specifications for Bin Grading: (IF=350mA.Ta=25°C)

lm		
Bin	Min	Max
Rank T1	55	63
Rank T2	63	72
Rank U1	72	83
Rank U2	83	96

Specifications for Vf Group: (IF=350mA.Ta=25°C)

Vf(V)		
Bin	Min	Max
3	3.0	3.2
4	3.2	3.4
5	3.4	3.6
6	3.6	3.8

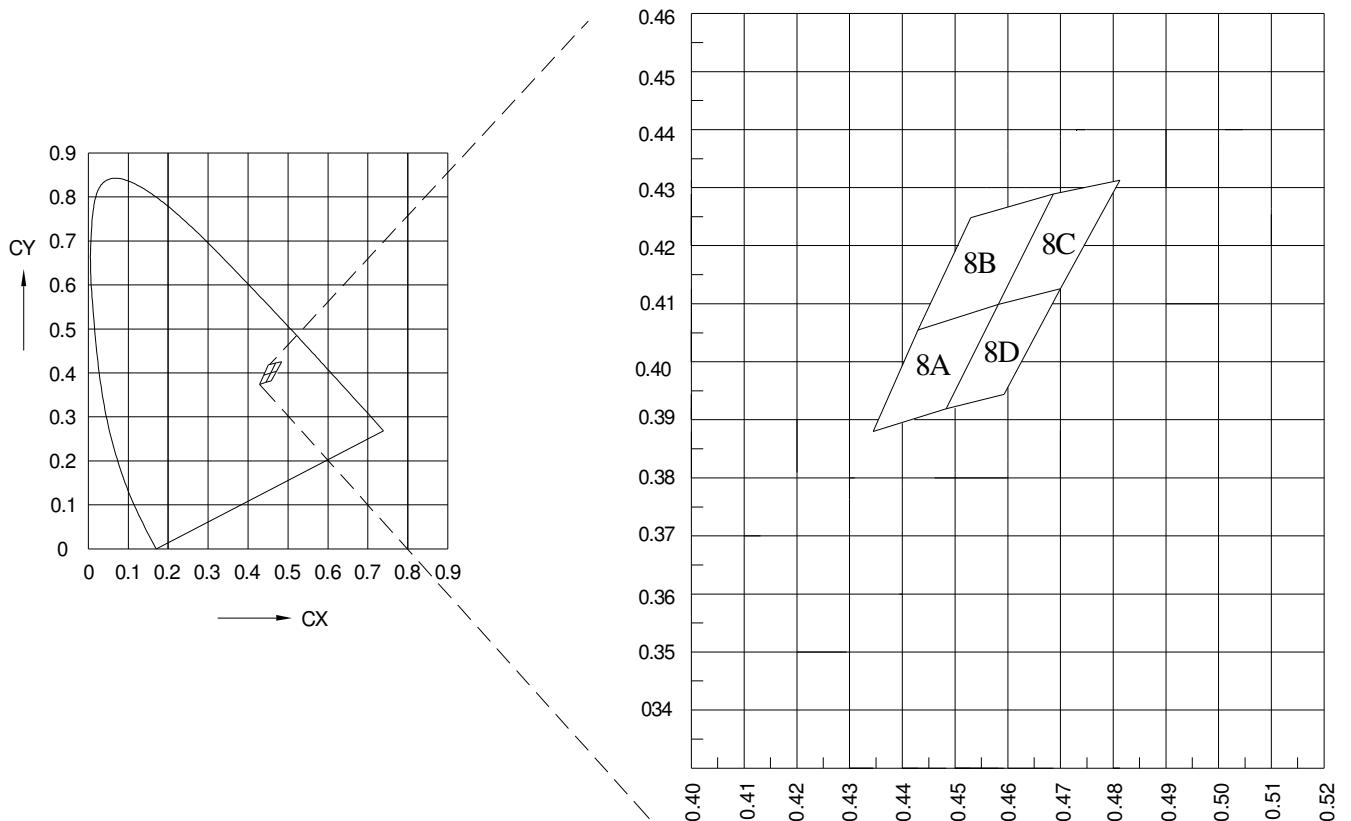
Chromaticity Coordinates Specifications for Bin Grading:

COLOR RANKS (IF=350mA, Ta=25°C)

BIN	RANK				
	X	Y	Z	u'	v'
8A	X	0.4345	0.4430	0.4582	0.4483
	Y	0.3880	0.4055	0.4099	0.3919
8B	X	0.4430	0.4530	0.4687	0.4582
	Y	0.4055	0.4248	0.4289	0.4099
8C	X	0.4582	0.4687	0.4813	0.4700
	Y	0.4099	0.4289	0.4319	0.4126
8D	X	0.4483	0.4582	0.4700	0.4593
	Y	0.3919	0.4099	0.4126	0.3944

Note: X,Y Tolerance each Bin limit is±0.01.

Chromaticity Coordinates & Bin grading diagram:



**Typical Electrical/Optical Characteristic Curves
(25°C Ambient Temperature Unless Otherwise Noted)**

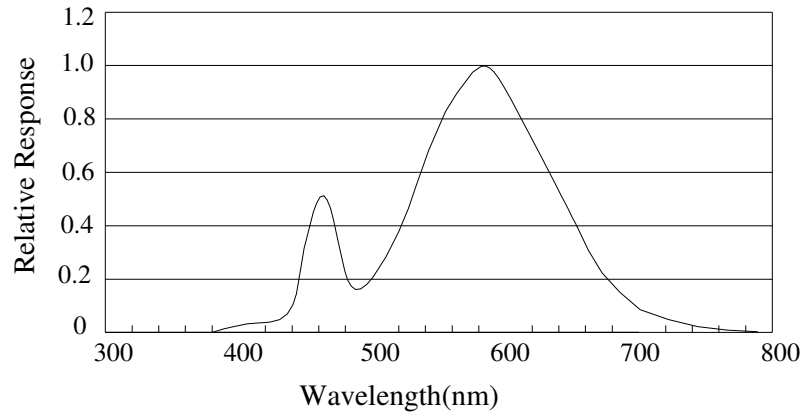
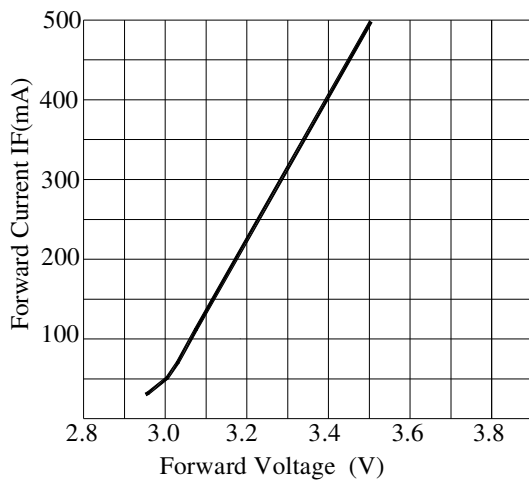
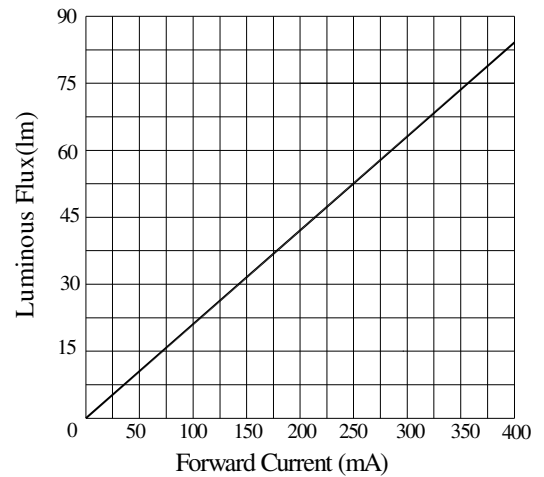


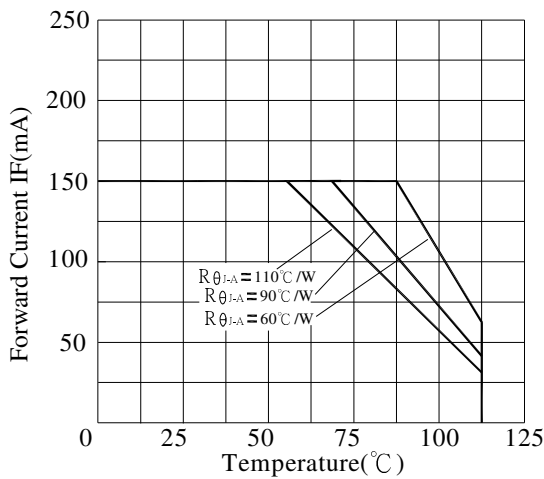
Fig.1 RELATIVE LUMINOUS INTENSITY



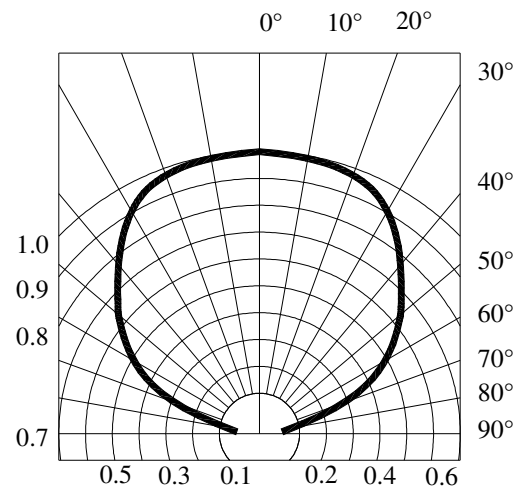
Forward Current VS. Forward Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

PRECAUTION IN USE

Storage

Recommended storage environment

Temperature: 5°C ~ 30°C (41°F ~ 86°F)

Humidity: 60% RH Max.

Use within 7 days after opening of sealed vapor/ESD barrier bags.

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5°C for 24 hours.

Fold the opened bag firmly and keep in dry environment.

Soldering

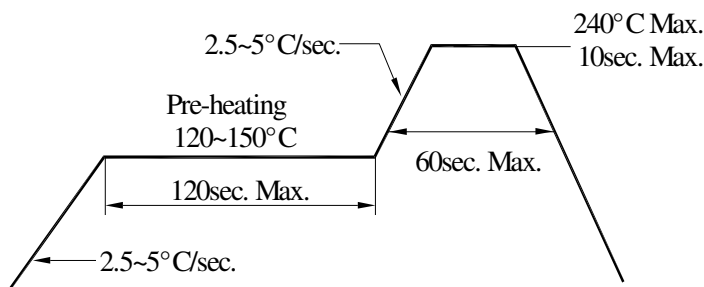
	Reflow Soldering		Hand Soldering	
	Lead Solder	Lead - free Solder		
Pre-heat	120~150°C	180~200°C	Temperature	350°C Max.
Pre-heat time	120sec. Max.	120sec. Max.	Soldering time	3sec. Max. (one time only)
Peak temperature	240°C Max.	260°C Max.		
Soldering time	10sec. Max.	10sec. Max.		
Condition	refer to Temperature- profile 1	refer to Temperature- profile 2		

*After reflow soldering rapid cooling should be avoided.

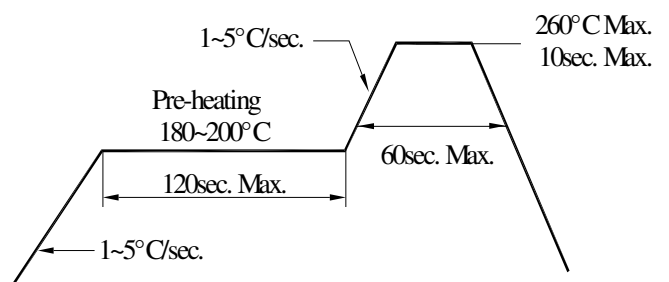
[Temperature-profile (Surface of circuit board)]

Use the conditions shown to the under figure.

< 1 : Lead Solder >

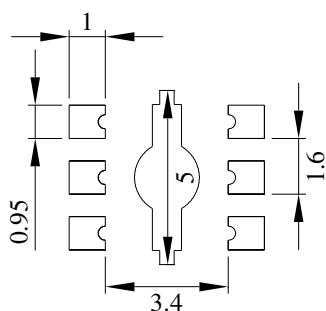


< 2 : Lead-free Solder >



[Recommended soldering pad design]

Use the following conditions shown in the figure.



Unit:mm

Handling of Silicone Resin LEDs

Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound

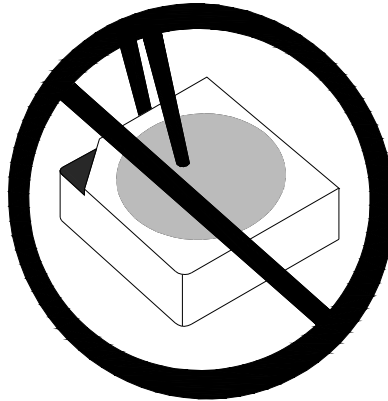


Figure 1

In general, LEDs should only be handled from the side. By the way, this also applies to LEDs without a silicone sealant, since the surface can also become scratched.

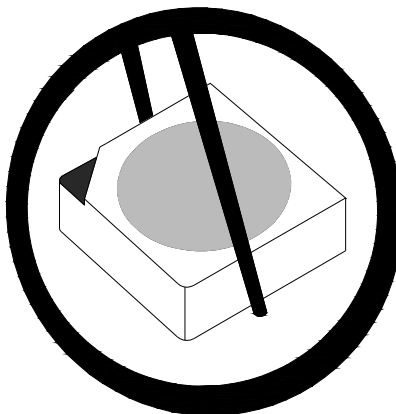


Figure 2

When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the surface of the resin must be prevented.

This is assured by choosing a pick and place nozzle which is larger than the LED's reflector area.