Marktech Optoelectronics

3 Northway Lane North Latham,New York 12110.
Tollfree:1.800.984.5337
Phone:1.518.956.2980
Fax:1.518.785.4725
Http://www.marktechopto.com

SPECIFICATION

PART NO. : MT3003N-WT-A

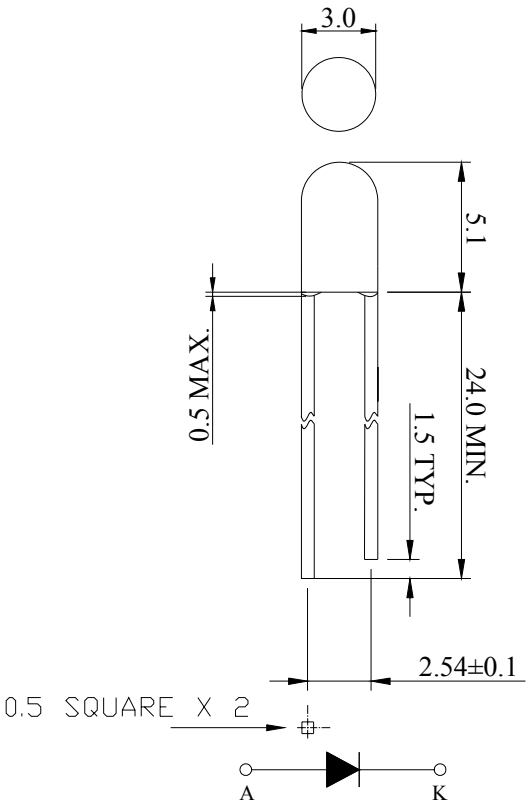
3.0mm ROUND LED LAMP





Description

This white lamp is made with InGaN/Sapphire chip and water clear epoxy resin.



Notes:

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

Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
MT3003N-WT-A	InGaN/Sapphire	White	Water clear

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Rating	Unit
Power Dissipation	PD	120	mW
Reverse Voltage	VR	5	V
D.C. Forward Current	If	30	mA
Reverse (Leakage) Current	Ir	50	μA
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	If(Peak)	100	mA
Operating Temperature Range	Topr	-25 to +85	℃
Storage Temperature Range	Tstg	-40 to +100	℃
Soldering Temperature(1.6mm from body)	Tsol	Dip Soldering : 260℃ for 5 sec. Hand Soldering : 350℃ for 3 sec.	
Electrostatic discharge	ESD	6000	V

Electrical and Optical Characteristics:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	Iv	If=20mA	3850	8000		mcd
Forward Voltage	Vf	If=20mA		3.2	4.0	V
CIE Chromaticity Coordinates:X Axis	X	If=20mA		0.31		
CIE Chromaticity Coordinates:Y Axis	Y	If=20mA		0.30		
Reverse (Leakage) Current	Ir	Vr=5V			50	μA
Viewing Angle	2 θ 1/2	If=20mA		30		deg

Notes:1. The datas tested by IS tester.

2. Customer's special requirements are also welcome.

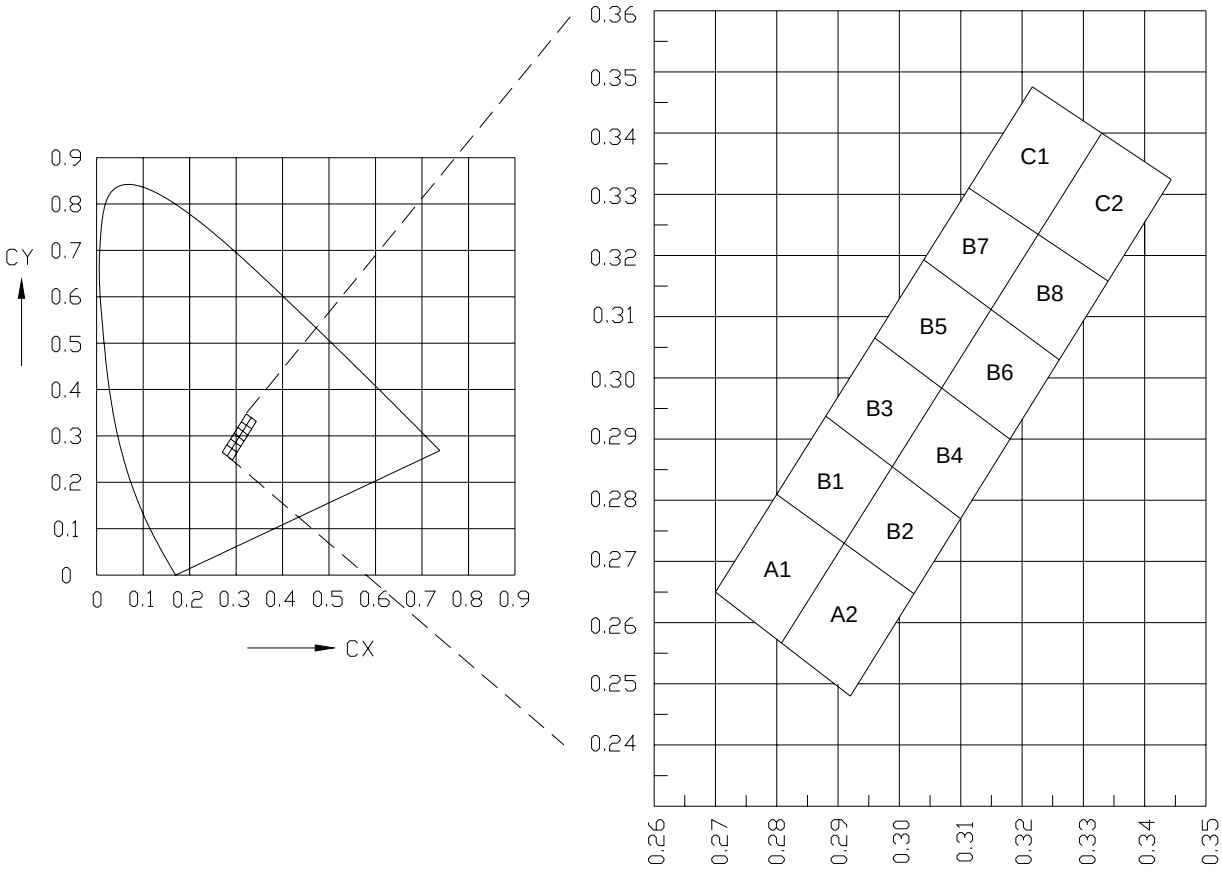
Chromaticity Coordinates Specifications for Bin Grading:

COLOR RANKS(IF=20Ma.Ta=25℃)

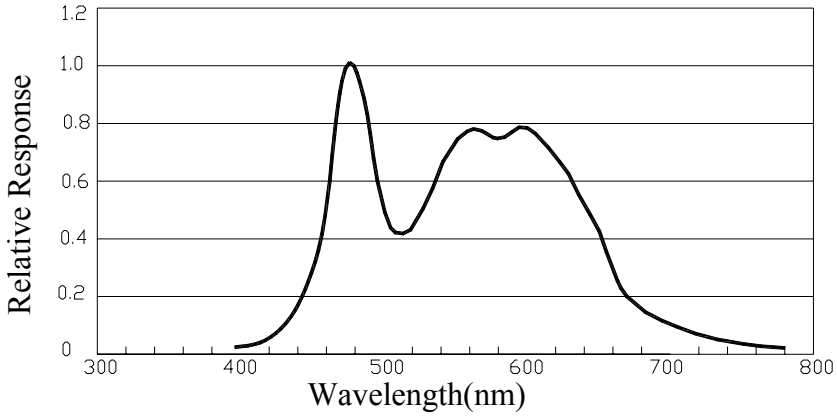
BiN	RANK BiN RANK										
A1	X	0.27	0.28	0.291	0.281	B5	X	0.296	0.304	0.315	0.307
	Y	0.265	0.282	0.273	0.256		Y	0.307	0.319	0.311	0.298
A2	X	0.281	0.291	0.302	0.292	B6	X	0.307	0.315	0.326	0.318
	Y	0.256	0.273	0.265	0.248		Y	0.298	0.311	0.303	0.29
B1	X	0.28	0.288	0.299	0.291	B7	X	0.304	0.312	0.323	0.315
	Y	0.282	0.294	0.286	0.273		Y	0.319	0.331	0.323	0.311
B2	X	0.291	0.299	0.31	0.302	B8	X	0.315	0.323	0.334	0.326
	Y	0.273	0.286	0.277	0.265		Y	0.311	0.323	0.315	0.303
B3	X	0.288	0.296	0.307	0.299	C1	X	0.312	0.322	0.333	0.323
	Y	0.294	0.307	0.298	0.286		Y	0.331	0.348	0.34	0.323
B4	X	0.299	0.307	0.318	0.31	C2	X	0.323	0.333	0.344	0.334
	Y	0.286	0.298	0.29	0.277		Y	0.323	0.34	0.332	0.315

Notes:X.Y Tolereanceeach Bin limit is±0.01.

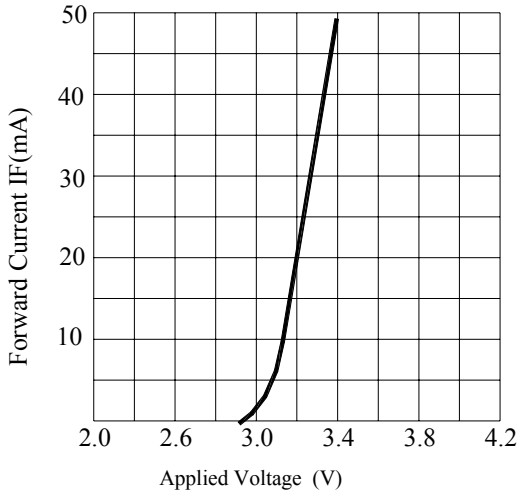
Chromaticity Coordinates & Bin grading diabram:



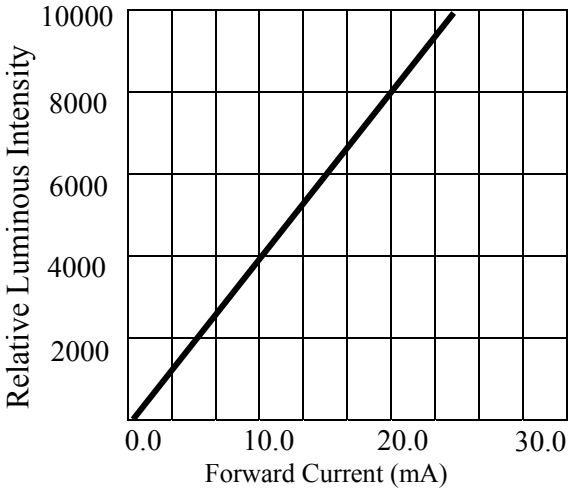
Typical Electrical / Optical Characteristics Curves :



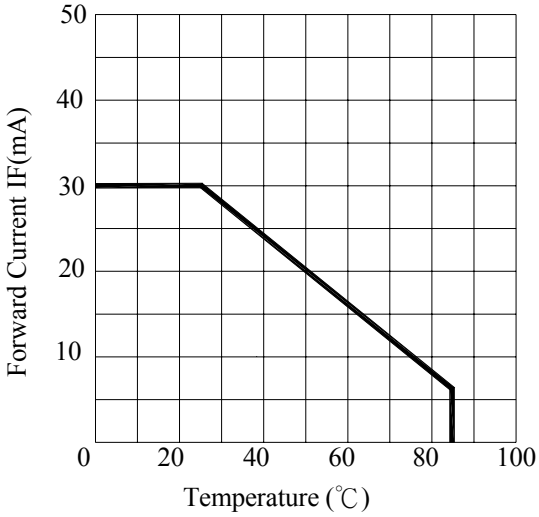
WHITE LED SPECTRUM VS. WAVELENGTH



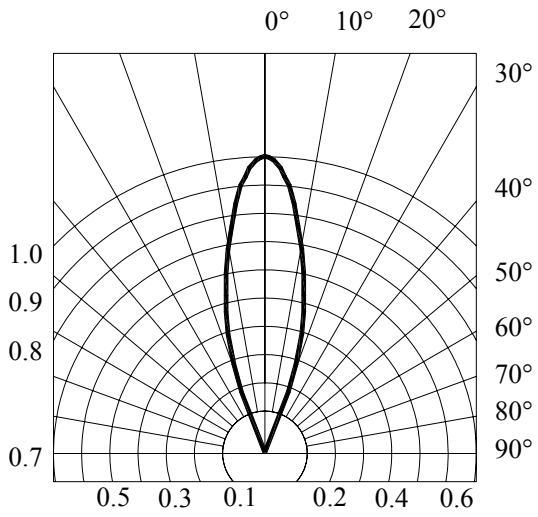
FORWARD CURRENT VS.APPLIED VOLTAGE



FORWARD CURRENT VS. LUMINOUS INTENSITY



FORWARD CURRENT VS. AMBIENT TEMPERATURE



RADIATION DIAGRAM

Precautions:

TAKE NOTE OF THE FOLLOWING IN USE OF LED

1. Temperature in use

Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel , etc) which are used for semiconductor products such as transistors cannot be added to the resin.

Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on the following during use.

Avoid applying external force, stress, and excessive vibration to the resins and terminals at h igh temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130℃.

At a temperature exceeding this limit, the coefficient of liner expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.

If external force or stress is applied at that time, it may cause a wire rupture.

2. Soldering

Please be careful on the following at soldering.

After soldering, avoided applying external force, stress, and excessive vibration until the products go to cooling process (normal temperature), <Same for products with terminal leads>

(1) Soldering measurements:

Distance between melted solder side to bottom of resin shall be 1.6mm or longer.

(2) Dip soldering :

Pre-heat: 90℃ max. (Backside of PCB), Within 60 seconds.

Solder bath: 260± 5℃ (Solder temperature), Within 5 seconds.

(3) H and soldering: 350℃ max. (Temperature of soldering iron tip), Within 3 seconds.

3. Insertion

Pitch of the LED leads and pitch of mounting holes need to be same.

4. Others

Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make s ure not to apply external force, stress, and excessive vibration to the LED and follow the con ditions below.

Ba king temperature: 120℃ max. Bak ing time: Within 60 seconds.

If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.