



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET



- ▶ PCB / CHIP LED
- ▶ 0606 (1615) 0.55t
- ▶ Red / Green / Blue

NOM25S63



Release Date: 19 April 2016 Version: A1.0



0606 (1615) 0.55t

RoHS
Compliant



FEATURES (Red/Green/Blue):

- **Package:** 4 Pins Top View Chip PCB LED
- **Forward Current:** 20/20/20mA*
- **Forward Voltage (typ.):** 2.1/3.2/3.2V
- **Luminous Flux (typ.):** 140/450/220mcd@20mA
- **Colour:** Red/Green/Blue
- **Wavelength:** 625/525/470nm
- **Viewing angle:** 140/140/140°
- **Materials:**
 - Die: AlGaInP/InGaN/InGaN
 - Resin: Epoxy (White Clear)
- **Operating Temperature:** -20~+80°C
- **Storage Temperature:** -30~+100°C
- **ESD:** 2000/500/500V (HBM)
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** MSL 3 according to JEDEC
- **Packing:** 8mm tape with 4000pcs/reel, ø180mm (7")

* In the order of Red/Green/Blue.

APPLICATIONS:

- Switch Light
- 3C Application
- Indication Light
- Decoration Light
- LED Display

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30/30/30*	mA
Pulse Forward Current (duty 1/10; 10KHz)	I_{FP}	60/100/100	mA
Power Dissipation	P_D	75/120/120	mW
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10/50/50	μ A
Electrostatic Discharge (HBM)	ESD	2000/500/500	V
Operating Temperature	T_{OPR}	-20~+80	°C
Storage Temperature	T_{STG}	-30~+100	°C

1. * In the order of Red/Green/Blue.

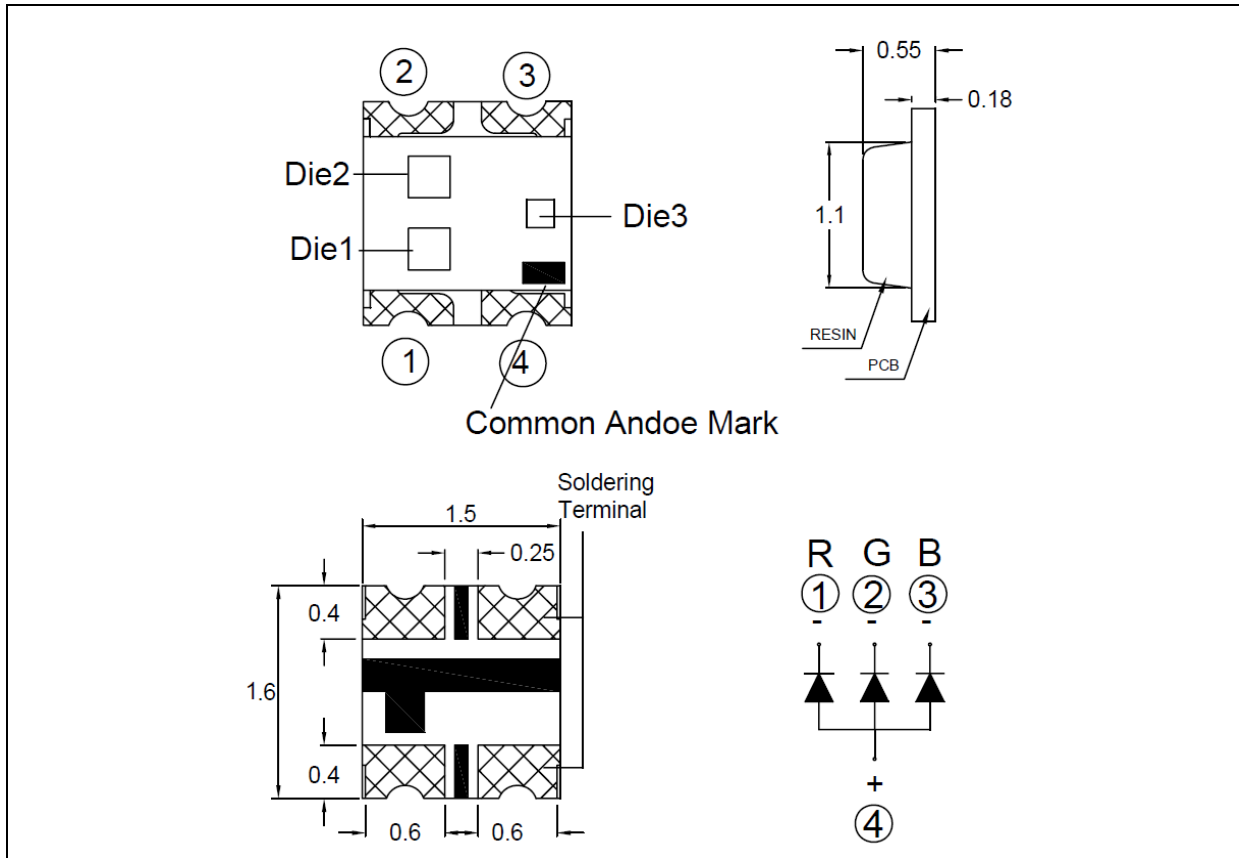
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	V_F	1.7	---	2.6	V	$I_F=20mA$
Red - Luminous Intensity	I_V	80	---	200	mcd	$I_F=20mA$
Red - Wavelength	W_p	---	625	---	nm	$I_F=20mA$
Green - Forward Voltage	V_F	2.8	---	3.6	V	$I_F=20mA$
Green - Luminous Intensity	I_V	125	---	800	mcd	$I_F=20mA$
Green - Wavelength	W_p	---	525	---	nm	$I_F=20mA$
Blue - Forward Voltage	V_F	2.8	---	3.6	V	$I_F=20mA$
Blue - Luminous Intensity	I_V	100	---	300	mcd	$I_F=20mA$
Blue - Wavelength	W_p	---	470	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	140	---	deg	$I_F=20mA$

1. Luminous intensity (I_V) $\pm 10\%$, Forward Voltage (V_F) $\pm 0.1V$

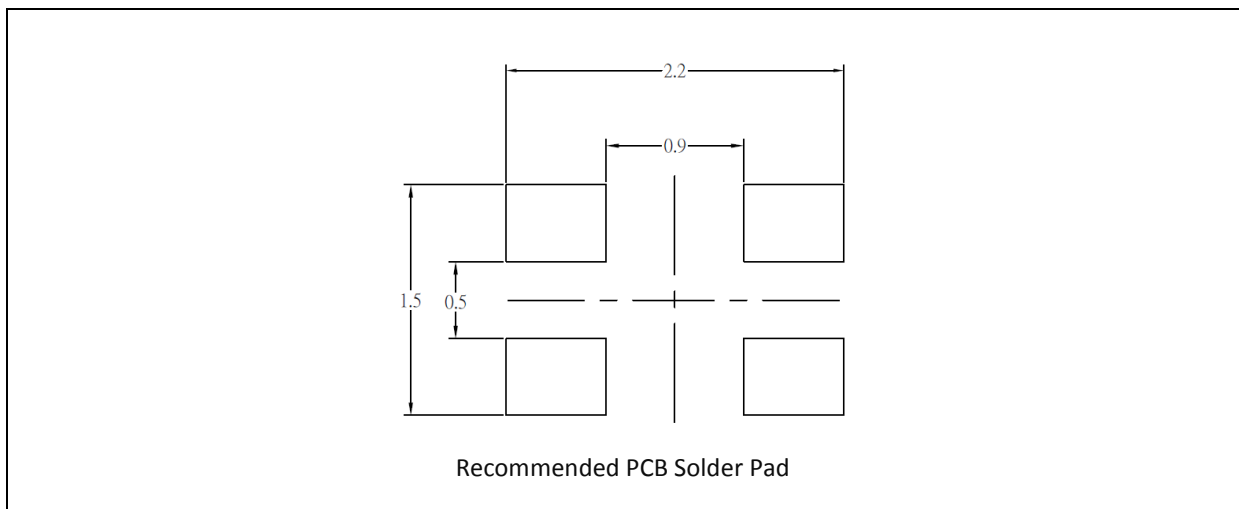
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 20\text{mA}$):

	Code	Min.	Max.	Unit
VRGB	Red	1.7	2.6	V
	Green	2.8	3.6	
	Blue	2.8	3.6	

 Luminous Intensity Classifications ($I_F = 20\text{mA}$):

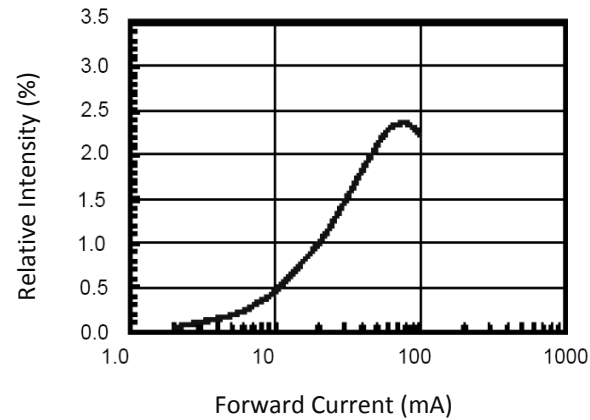
	Code	Min.	Max.	Unit
IRGB	Red	80	200	mcd
	Green	125	800	
	Blue	100	300	

 Wavelength Classifications ($I_F = 20\text{mA}$):

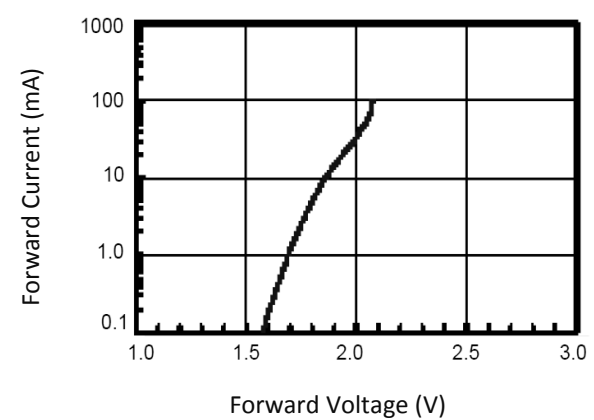
	Code	Min.	Max.	Unit
WRGB	Red	618	633	nm
	Green	520	530	
	Blue	465	475	

ELECTRO-OPTICAL CHARACTERISTICS (RED):

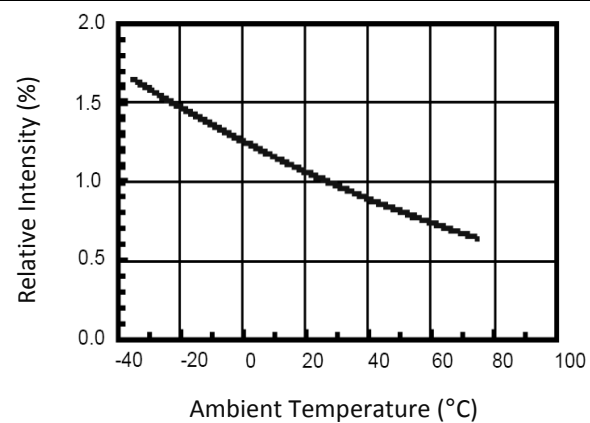
Relative Intensity v.s. Forward Current



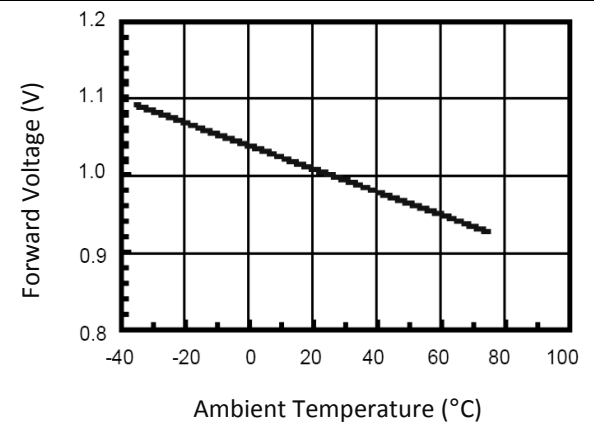
Forward Current v.s. Forward Voltage



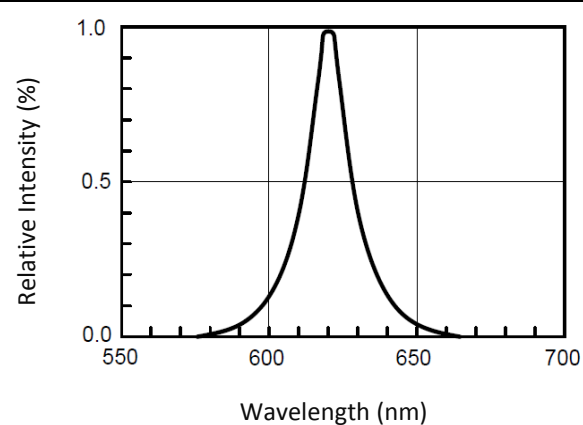
Relative Intensity v.s. Ambient Temperature



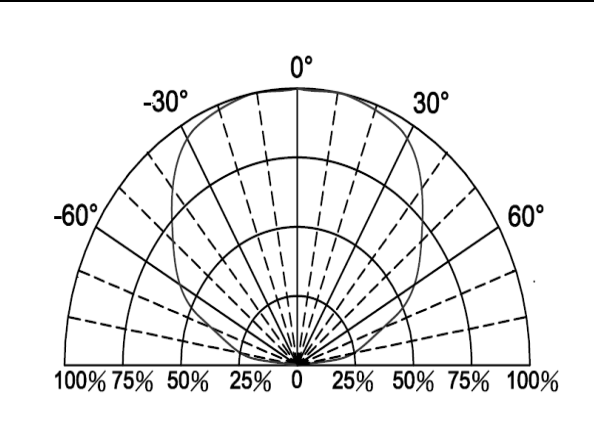
Forward Voltage v.s. Ambient Temperature

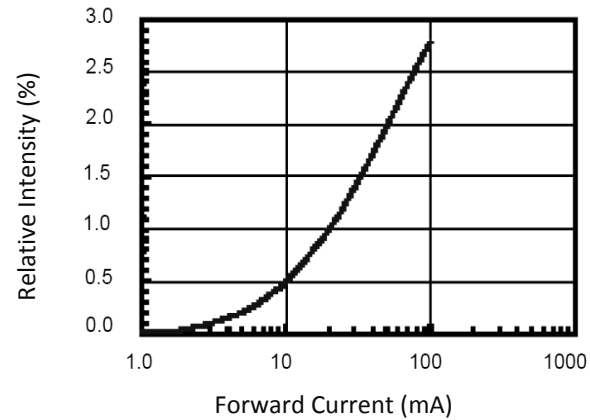
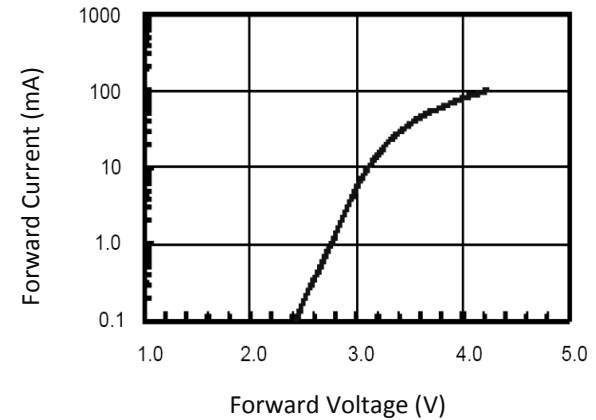
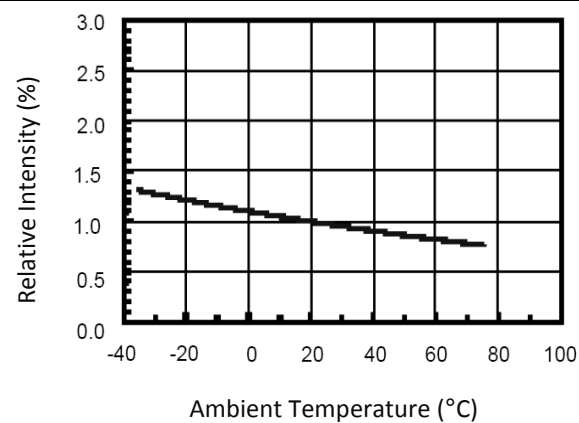
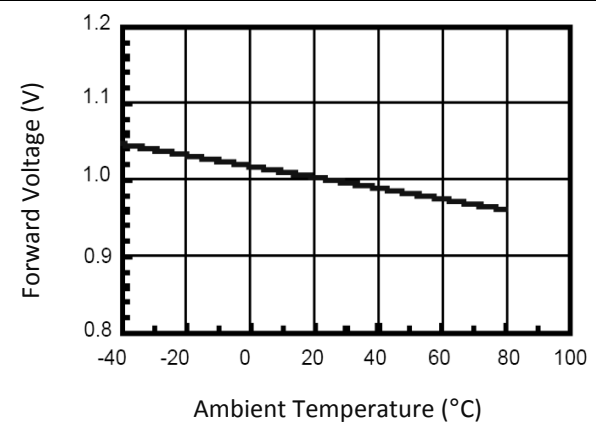
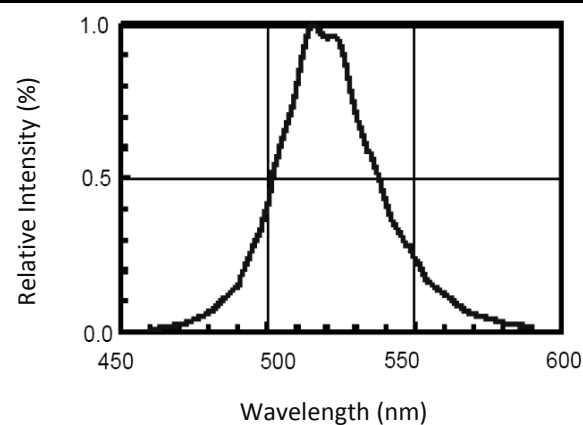
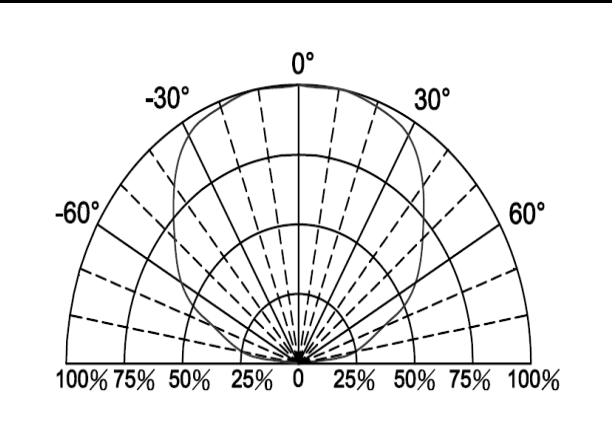


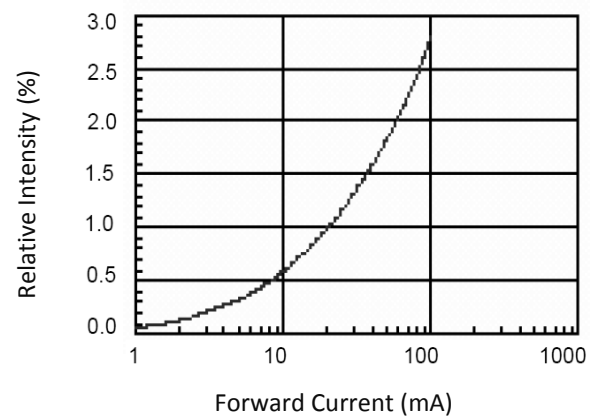
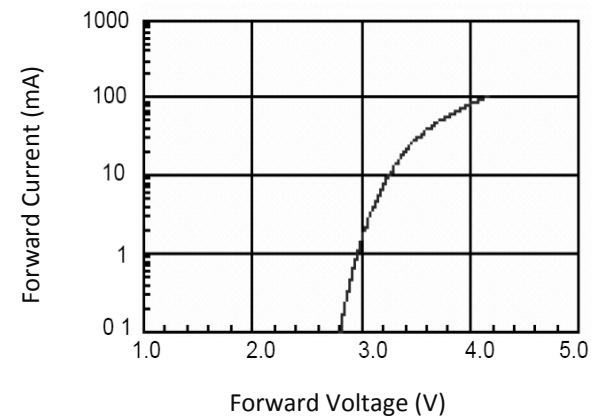
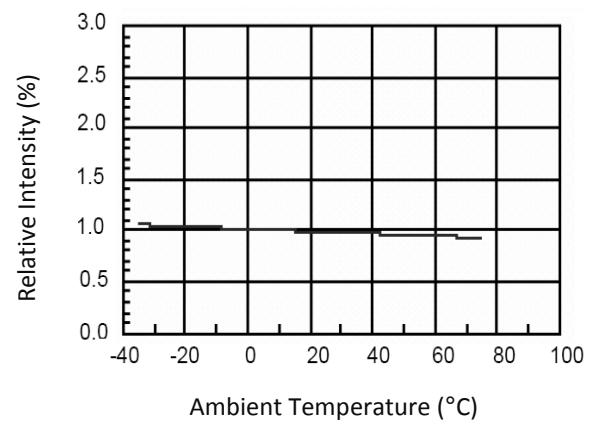
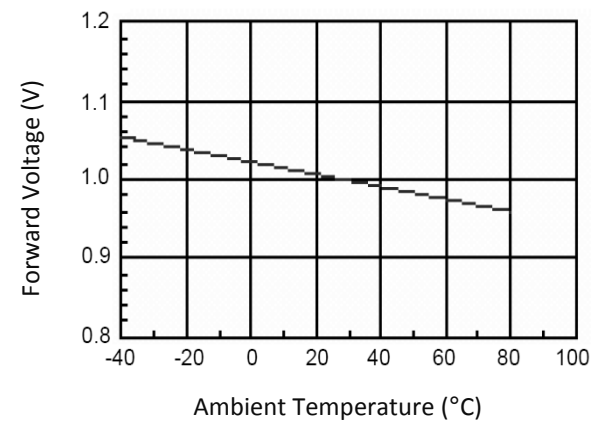
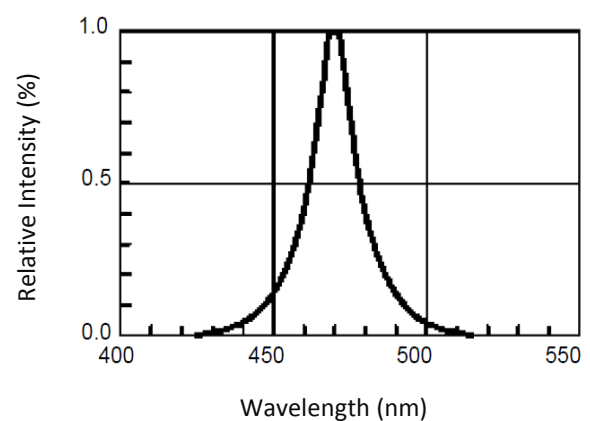
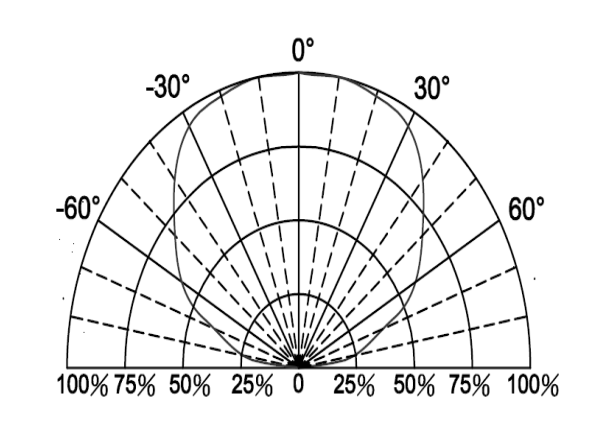
Relative Spectral Distribution



Directive Radiation

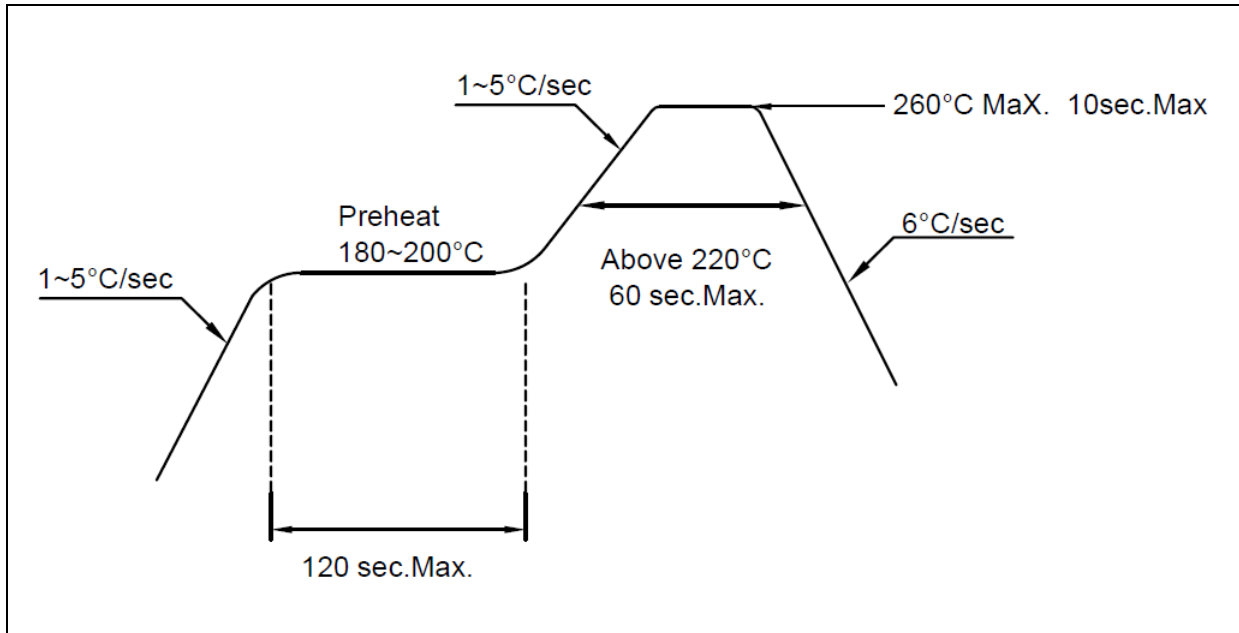


ELECTRO-OPTICAL CHARACTERISTICS (GREEN):
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Ambient Temperature

Forward Voltage v.s. Ambient Temperature

Relative Spectral Distribution

Directive Radiation


ELECTRO-OPTICAL CHARACTERISTICS (BLUE):
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Ambient Temperature

Forward Voltage v.s. Ambient Temperature

Relative Spectral Distribution

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



Note:

1. Maximum reflow soldering: 2 times.
2. Recommended reflow temperature is 240°C; the maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 month at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent and apply baking at 60°C±5°C for 15hrs before use.

Baking:

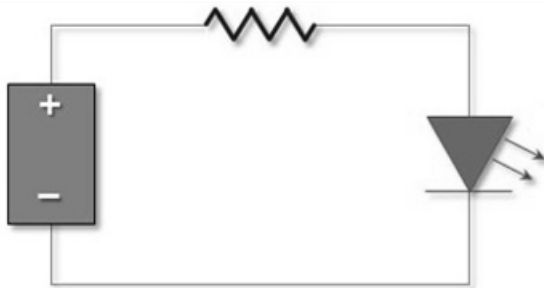
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

The suggested baking conditions are as followings:

- 60±5°C x 14hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	19/04/2016	Datasheet set-up.