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BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET

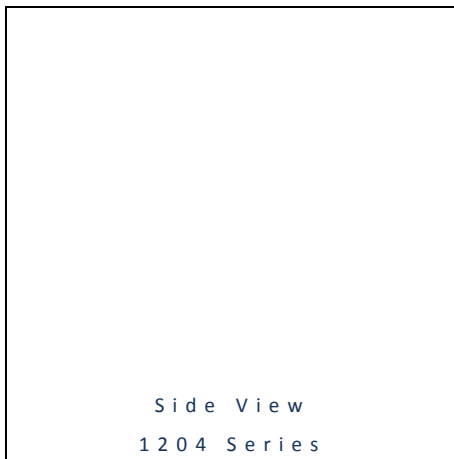


- ▶ PCB Side View
- ▶ 1204 Series
- ▶ Red (630nm) / Green (525nm) / Blue (470nm)

NOM02S82SV



Release Date: 13 June 2016 Version: A1.3



Side View 1204



FEATURES:

- **Package:** Side View PCB SMT Package
- **Forward Current:** 20/20/20mA*
- **Forward Voltage (typ.):** 2.0/3.2/3.2V
- **Luminous Intensity (typ.):** 150/550/150mcd @20mA
- **Colour:** Red/Green/Blue
- **Wavelength:** 630/525/470nm
- **Viewing angle:** 120/120/120°
- **Materials:**
 - Die: AlGaInP/InGaN/InGaN
 - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -20~+80°C
- **Storage Temperature:** -30~+100°C
- **ESD:** 2000/500/500V
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with 3000/reel, ø180mm (7")

* in the order of Red/Green/Blue

APPLICATIONS:

- Backlighting
- Indication Light
- Side view light strip
- Switch light
- Dashboard
- Keyboard

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I _F	50/30/30*	mA
Peak Forward Current Duty 1/10@10KHz	I _{FP}	130/100/100	mA
Reverse Current @5V	I _R	10/50/50	μA
Power Dissipation	PD	120/108/108	mW
Electrostatic Discharge	ESD	2000/500/500	V
Operating Temperature	T _{OPR}	-20~+80	°C
Storage Temperature	T _{STG}	-30~+100	°C

* in the order of Red/Green/Blue

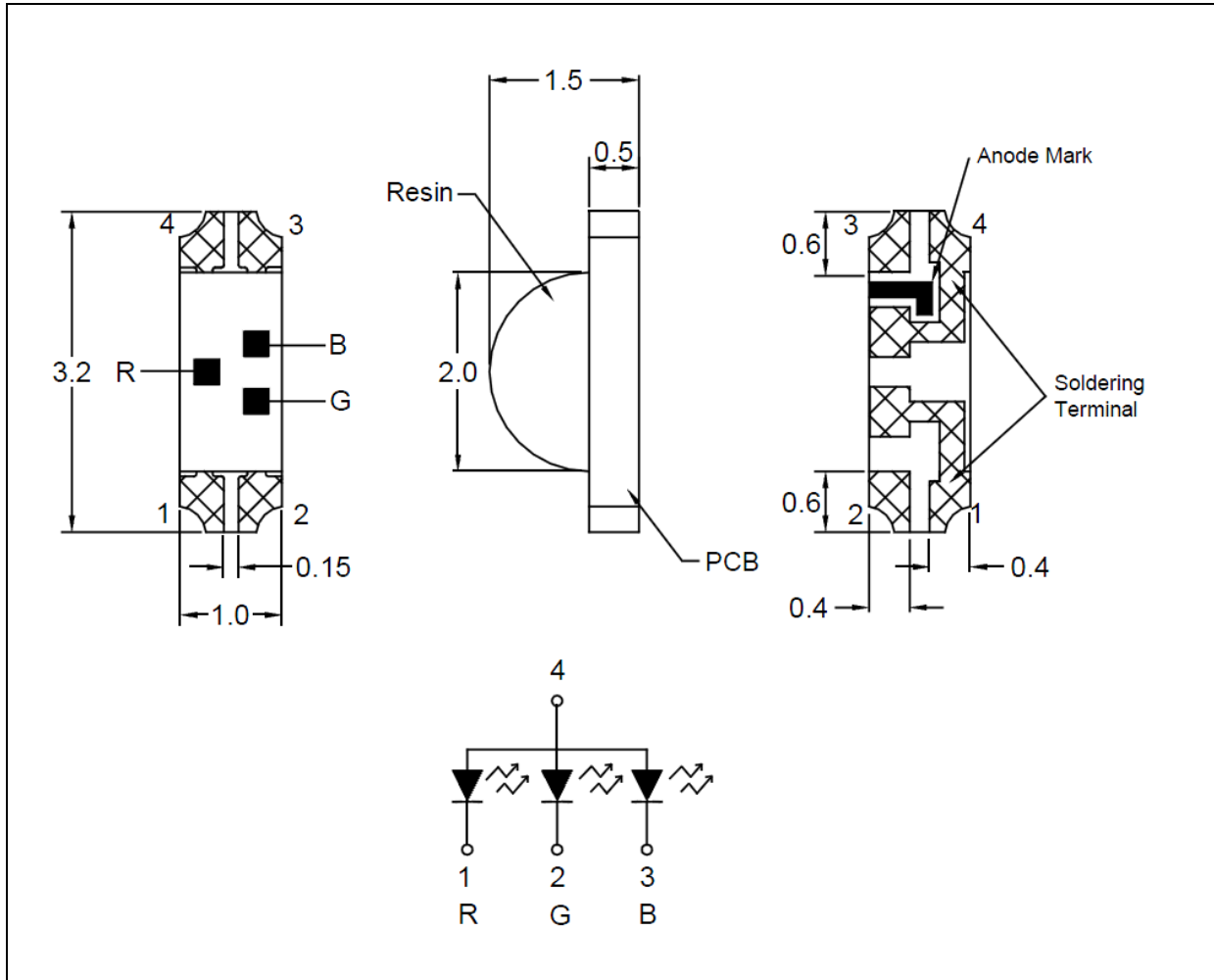
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	1.5/2.8/2.8	---	2.4/3.6/3.6	V	I _F =20mA
Luminous Intensity	I _v	80/320/80	150/550/150	200/1250/200	mcd	I _F =20mA
Dominant Wavelength	λ _D	---	630/525/470	---	nm	I _F =20mA
Spectral Line Half Bandwidth	Δλ	---	20/36/30	---	nm	I _F =20mA
Viewing Angle	2θ _{1/2}	---	120/120/120	---	deg	I _F =20mA

- Luminous intensity (I_v) ±15%, Forward Voltage (V_F) ±0.1V

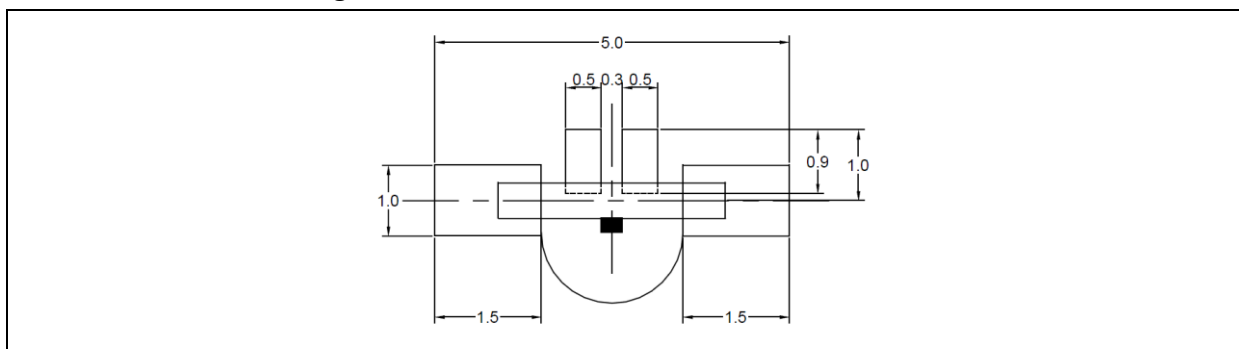
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.2\text{mm}$, 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
Red	1.5	2.4	V
Green	2.8	3.6	
Blue	2.8	3.6	

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

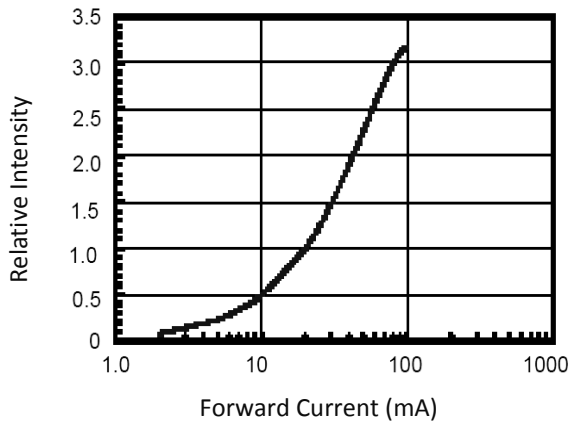
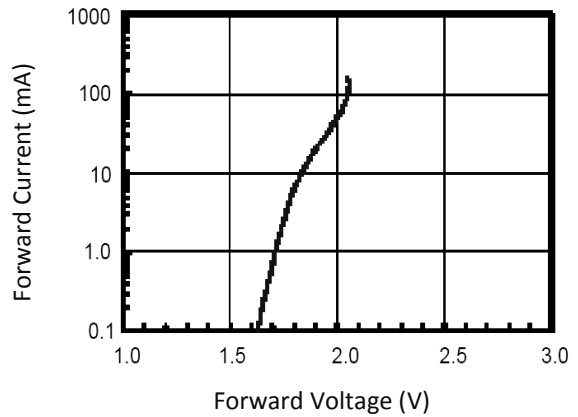
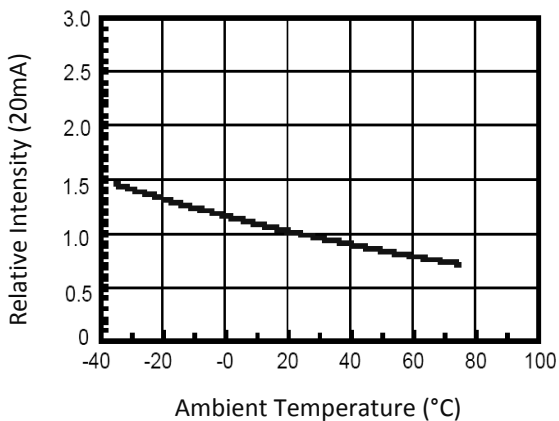
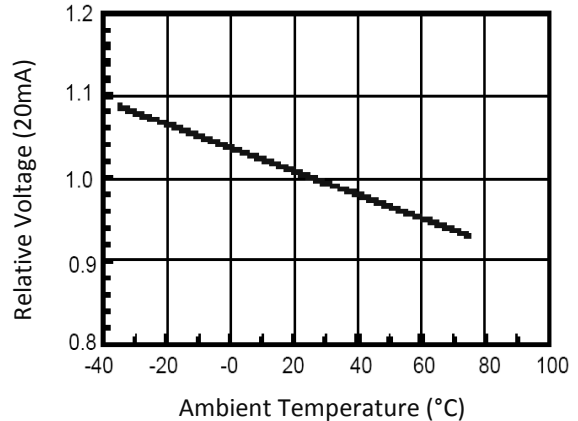
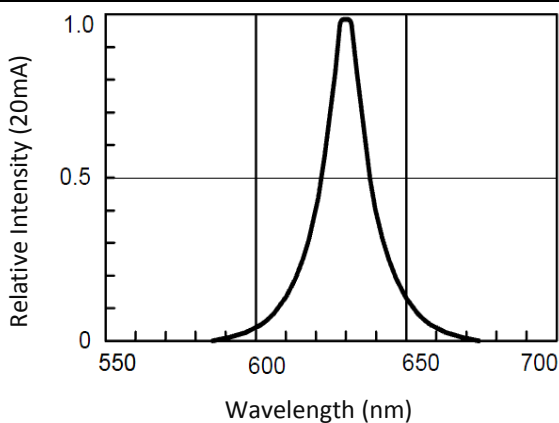
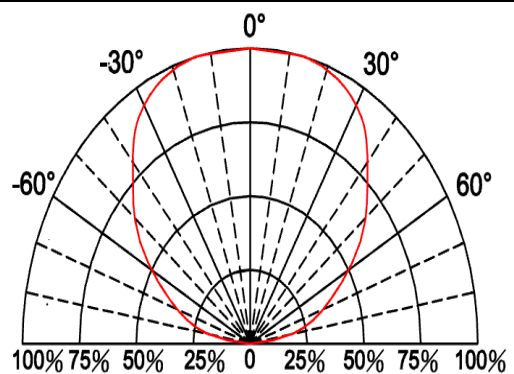
Code	Min.	Max.	Unit
Red	Q	80	mcd
	R	125	

Green	T	320	mcd
	U	500	
	V	800	

Blue	Q	80	mcd
	R	125	

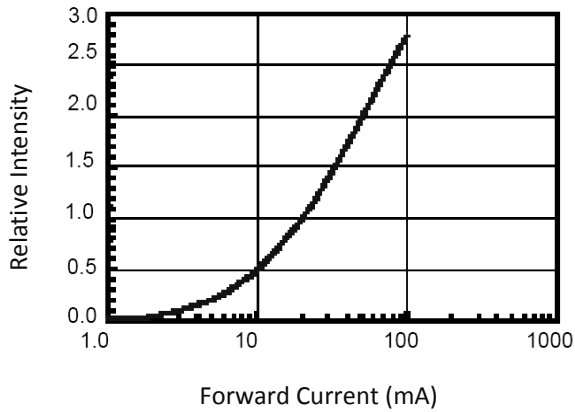
 Dominant Wavelength Classifications ($I_F = 20\text{mA}$):

Code	Min.	Max.	Unit
Red	620	640	nm
Green	520	530	
Blue	465	475	

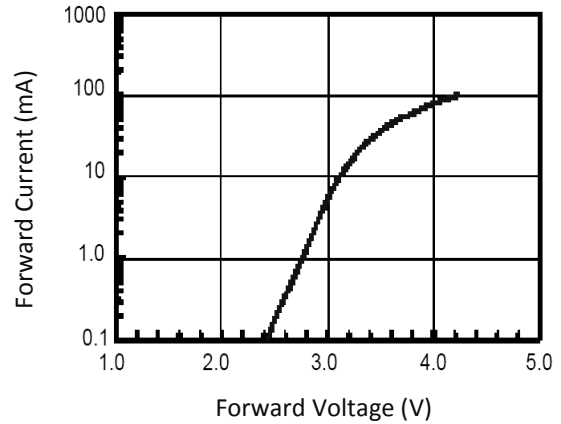
ELECTRO-OPTICAL CHARACTERISTICS (RED):
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Relative Forward Voltage v.s. Temperature

Relative Intensity v.s. Wavelength

Directive Radiation


ELECTRO-OPTICAL CHARACTERISTICS (GREEN):

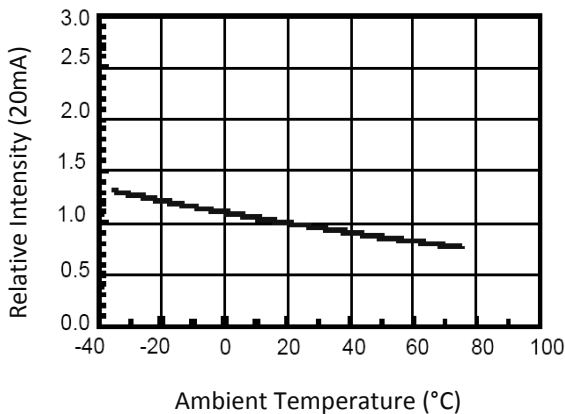
Relative Intensity v.s. Forward Current



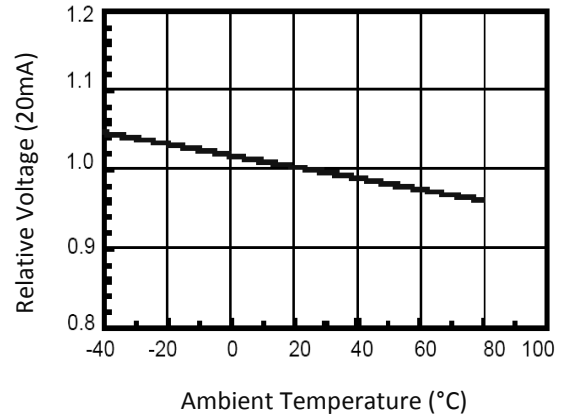
Forward Current v.s. Forward Voltage



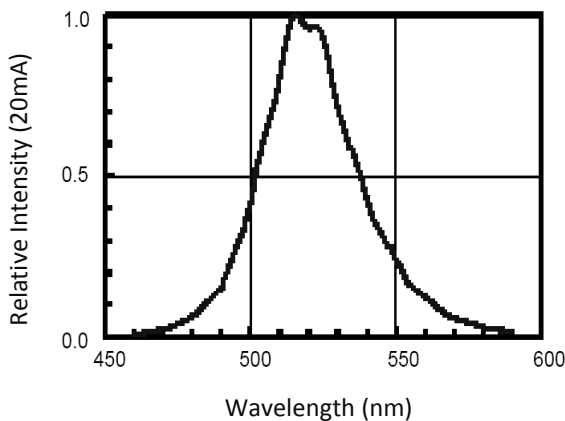
Relative Intensity v.s. Temperature



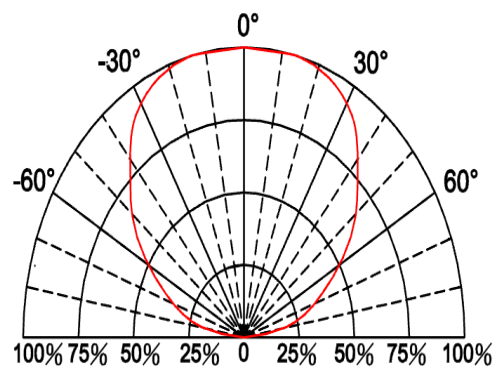
Relative Forward Voltage v.s. Temperature



Relative Intensity v.s. Wavelength

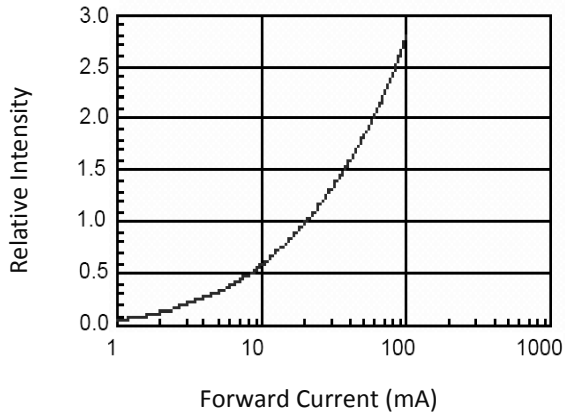


Directive Radiation

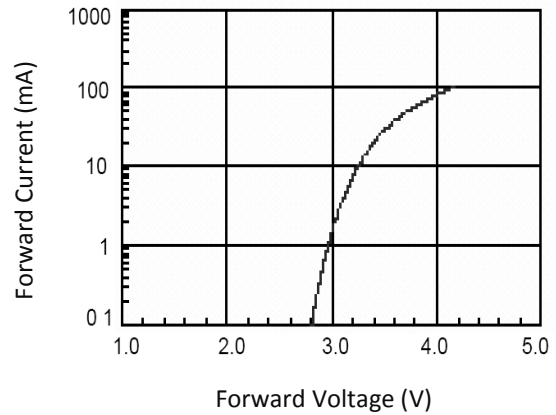


ELECTRO-OPTICAL CHARACTERISTICS (BLUE):

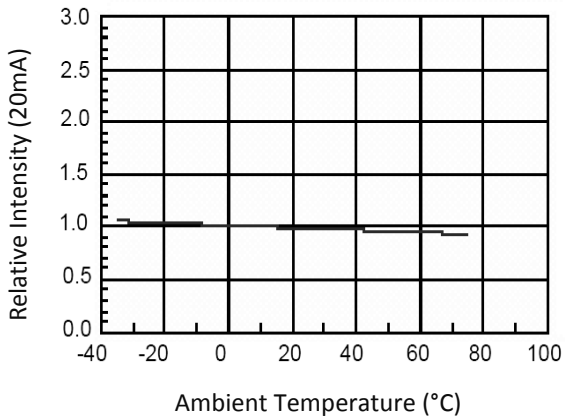
Relative Intensity v.s. Forward Current



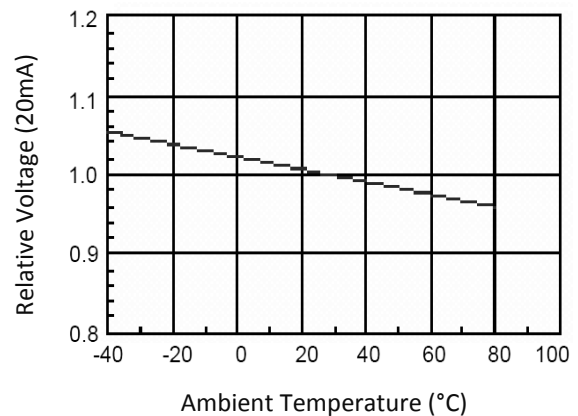
Forward Current v.s. Forward Voltage



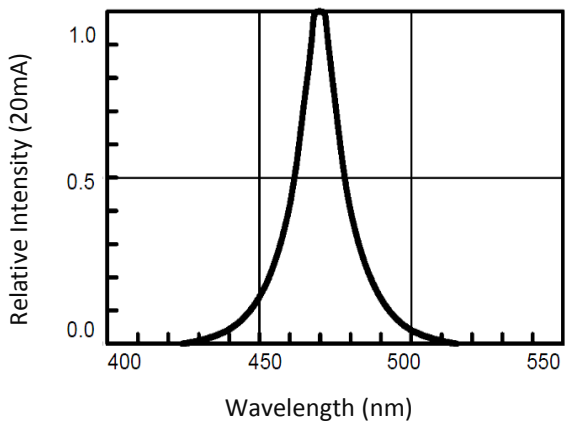
Relative Intensity v.s. Temperature



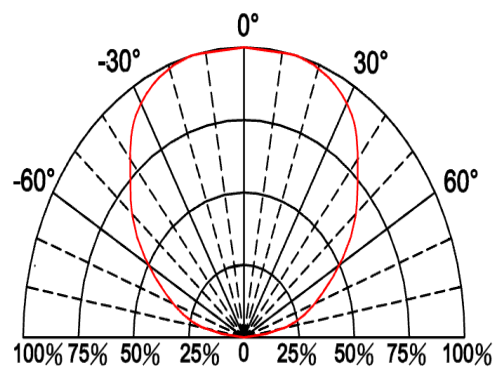
Relative Forward Voltage v.s. Temperature



Relative Intensity v.s. Wavelength

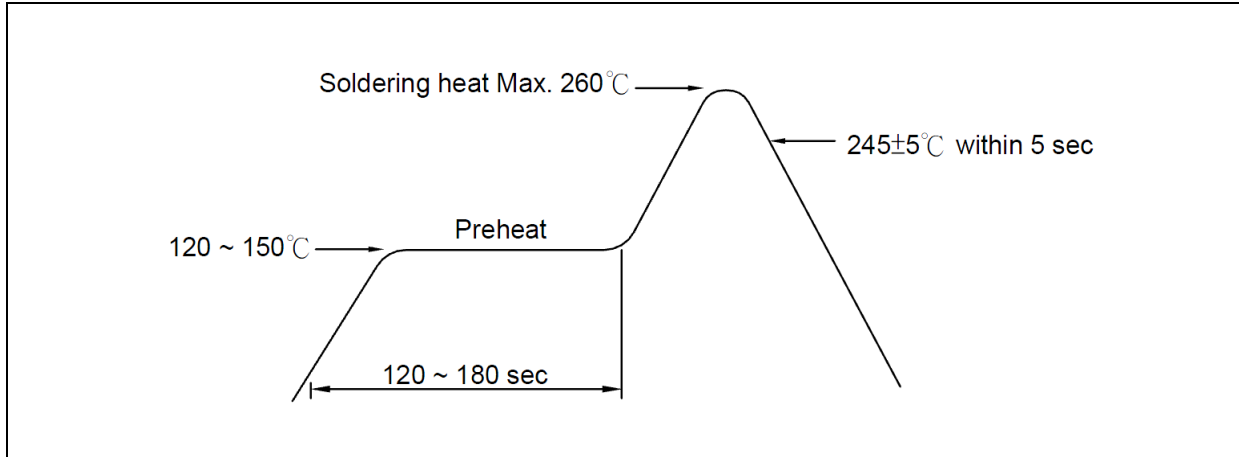


Directive Radiation

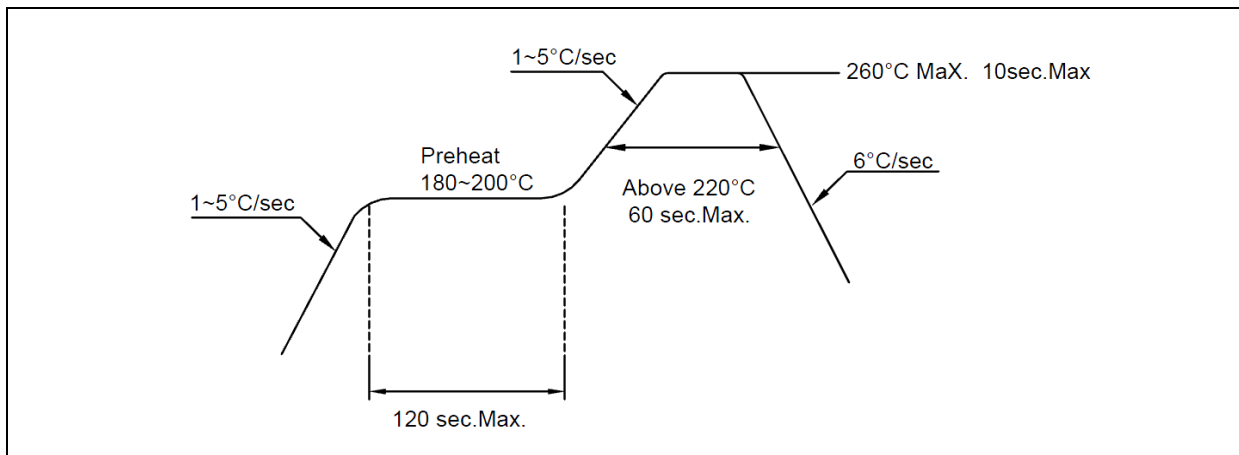


RECOMMENDED SOLDERING PROFILE:

Wave Solder:

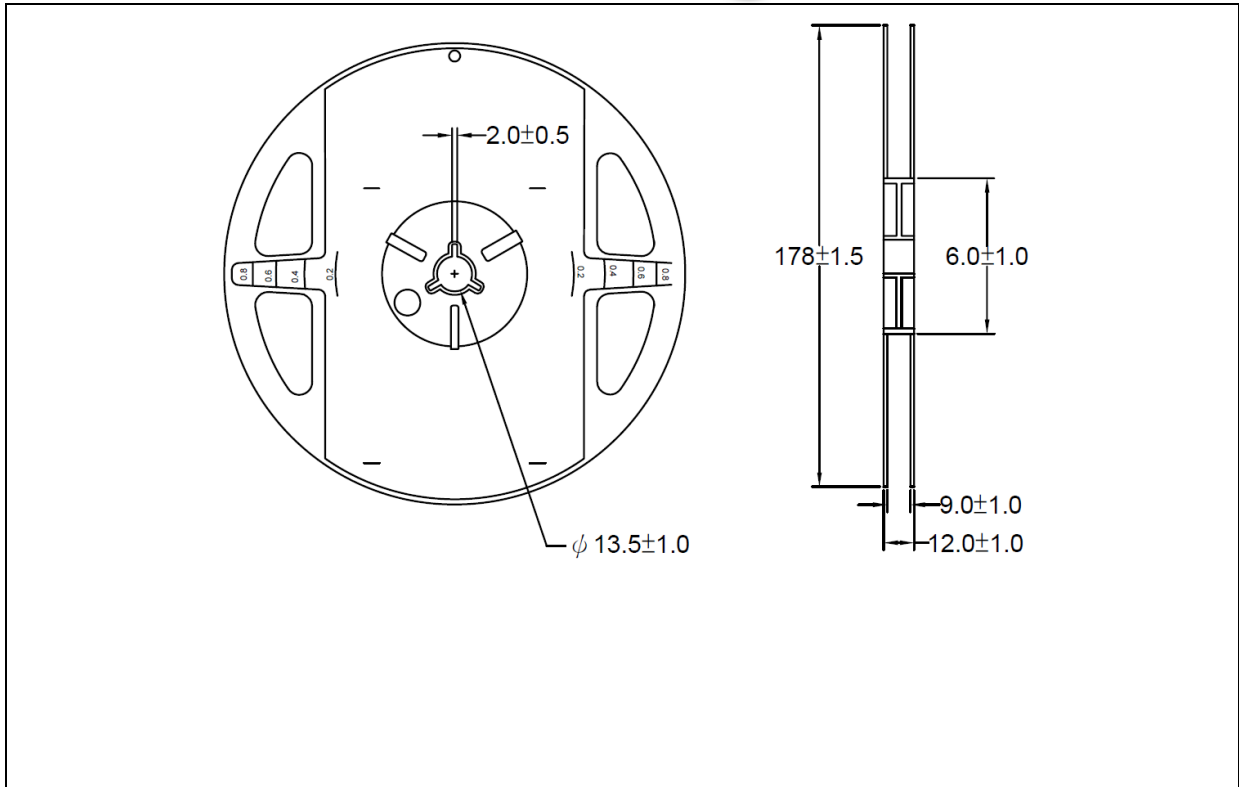


Lead-free Solder:



Note:

1. Maximum reflow soldering: 2 times.
2. 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.

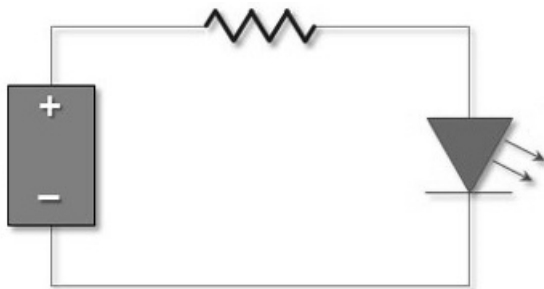
Baking:

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±3°C x 15hrs 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	23/12/2013	Datasheet set-up.
A1.1	14/10/2014	Revise binning information.
A1.2	13/11/2015	Part number adds -SV for side view.
A1.3	13/06/2016	Revise incorrect part number.