



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 / Blue

NOD25S62



Release Date: 12 October 2016 Version: A1.0



APPLICATIONS:

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

0606 (1615) 0.55t

RoHS
Compliant



FEATURES (Red/Blue):

- **Package:** 4 Pins Top View Chip PCB LED
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 1.9/3.2V
- **Luminous Flux (typ.):** 80/180mcd@20mA
- **Colour:** Red/Blue
- **Wavelength:** 630/470nm
- **Viewing angle:** 120/120°
- **Materials:**
 - Die: AlGaInP/InGaN
 - Resin: Epoxy (White Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+90°C
- **ESD:** 2000/500V (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/Blue.

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30/25*	mA
Pulse Forward Current (duty 1/10; 10KHz)	I_{FP}	90/100	mA
Power Dissipation	P_D	72/80	mW
Reverse Voltage	V_R	5/5	V
Reverse Current @5V	I_R	10/50	μ A
Electrostatic Discharge (HBM)	ESD	2000/500	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+90	°C

- * In the order of Red/Blue.

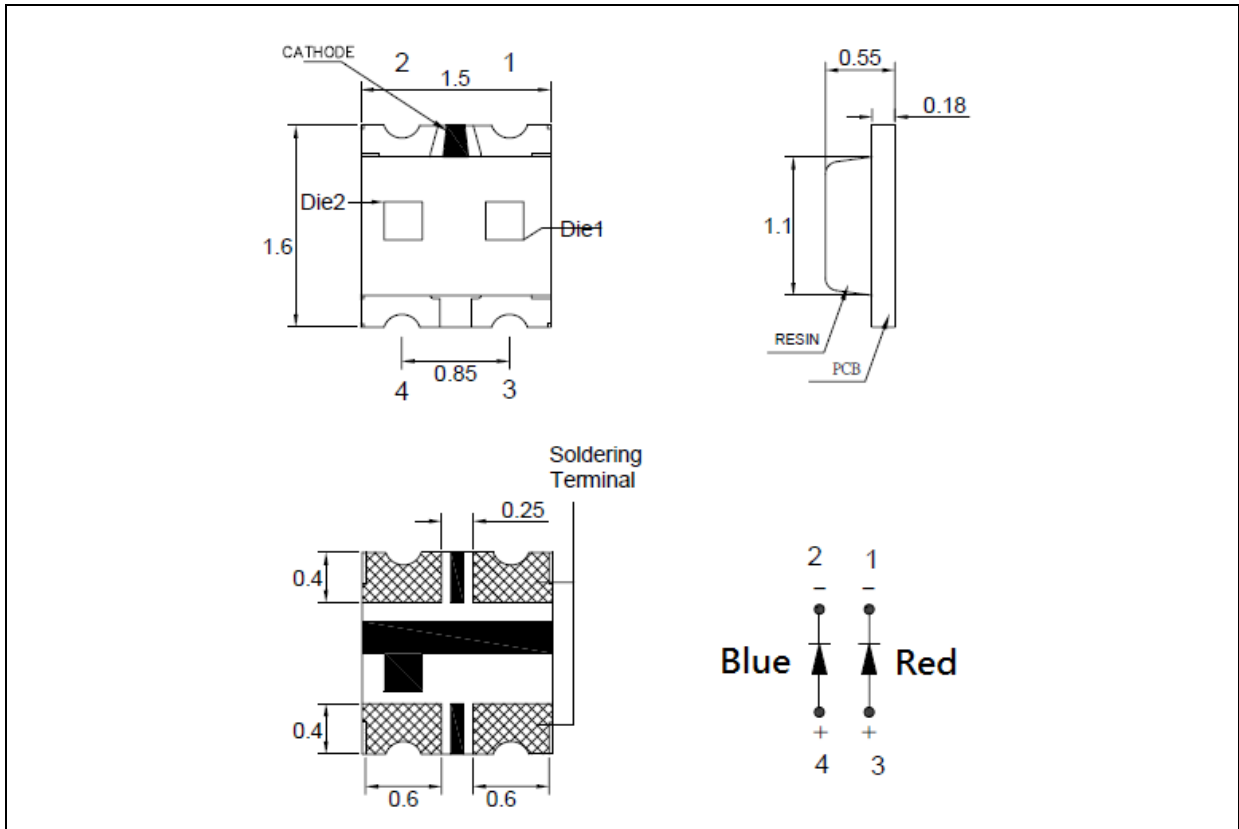
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	V_F	1.5	---	2.4	V	$I_F=20mA$
Red - Luminous Intensity	I_V	50	80	---	mcd	$I_F=20mA$
Red - Wavelength	W_p	---	630	---	nm	$I_F=20mA$
Red - Spectral Line Half-Width	$\Delta\lambda$	---	20	---	nm	$I_F=20mA$
Blue - Forward Voltage	V_F	2.8	---	3.6	V	$I_F=20mA$
Blue - Luminous Intensity	I_V	125	180	---	mcd	$I_F=20mA$
Blue - Wavelength	W_p	---	470	---	nm	$I_F=20mA$
Blue - Spectral Line Half-Width	$\Delta\lambda$	---	30	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=20mA$

 1. Luminous intensity (I_V) $\pm 15\%$, Forward Voltage (V_F) $\pm 0.1V$

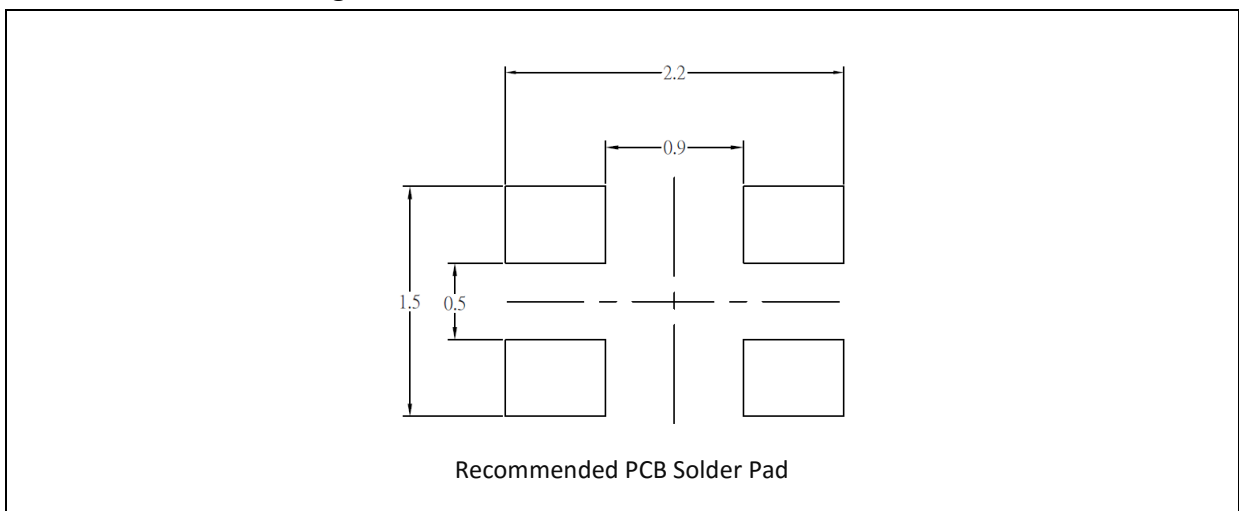
OUTLINE DIMENSION:

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	1.5	2.4	V
	Blue	2.8	3.6	

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

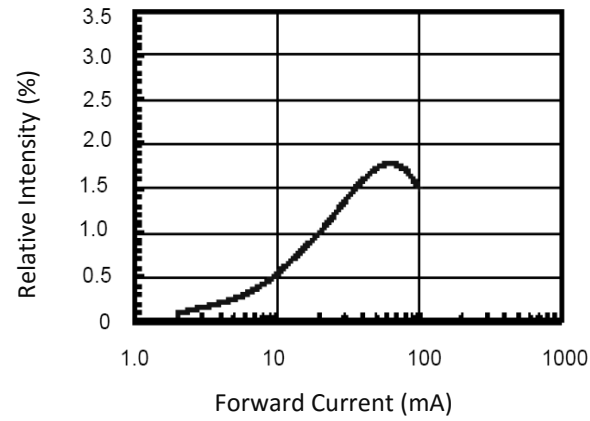
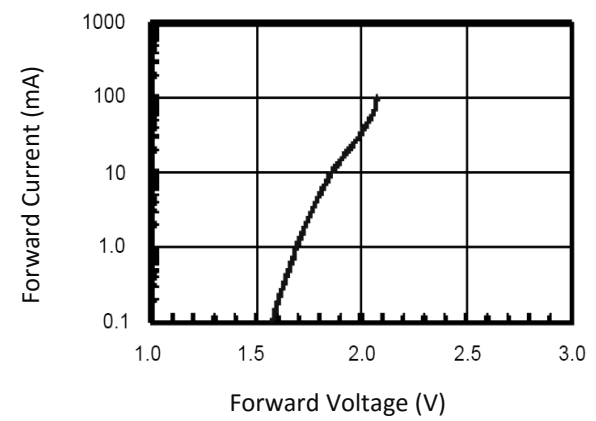
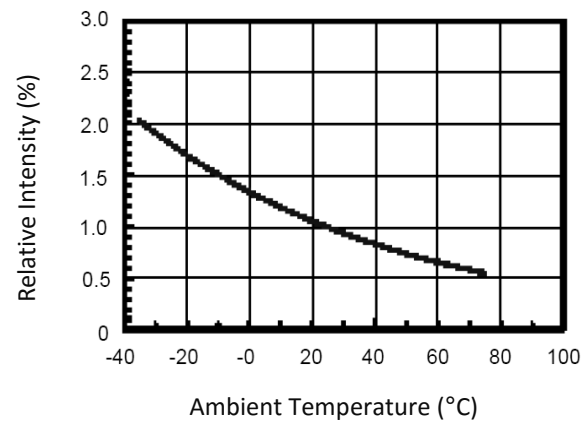
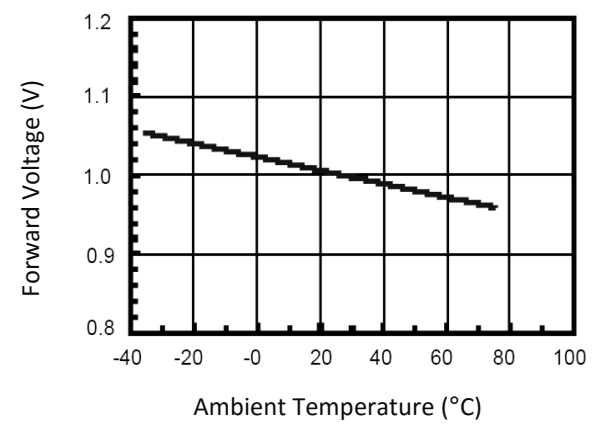
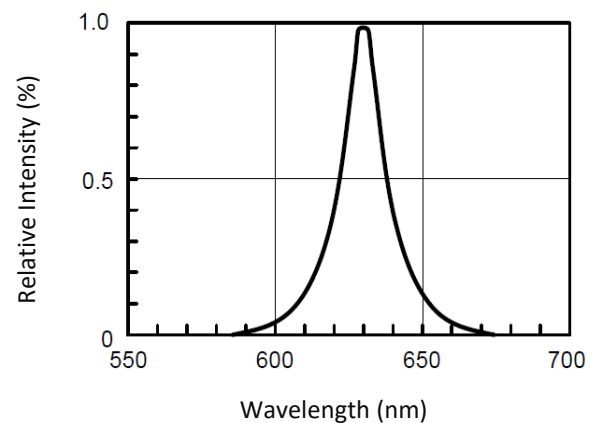
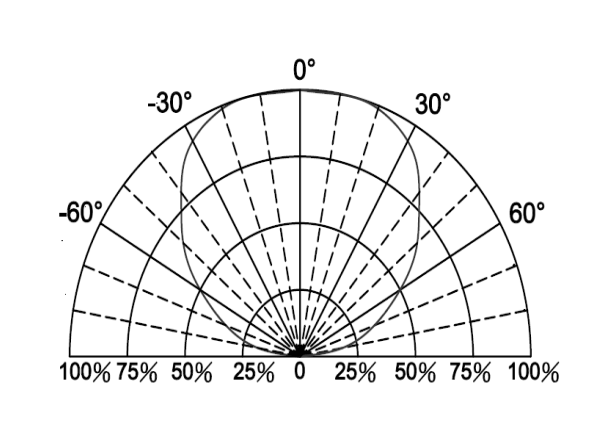
	Code	Min.	Max.	Unit
Red	P	50	80	mcd
	Q	80	125	
	R	125	200	
	S	200	320	

	Code	Min.	Max.	Unit
Blue	R	125	200	mcd
	S	200	320	
	T	320	500	
	U	500	800	

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

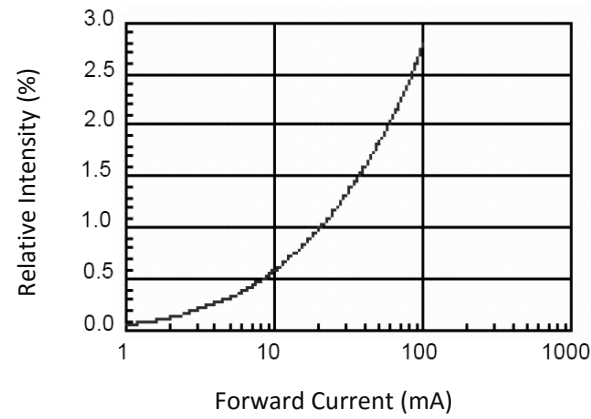
	Code	Min.	Max.	Unit
Red	28	621	624	nm
	29	624	627	
	30	627	630	
	31	630	633	

	Code	Min.	Max.	Unit
Blue	0D	465	468	nm
	0C	468	471	
	0B	471	474	
	0A	474	477	

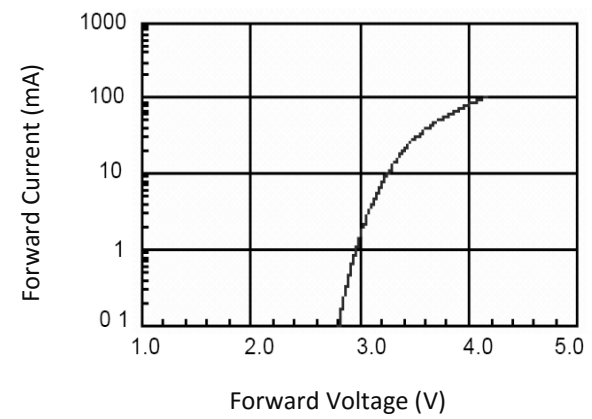
ELECTRO-OPTICAL CHARACTERISTICS (RED):
Relative Intensity v.s. Forward Current

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 (BLUE):

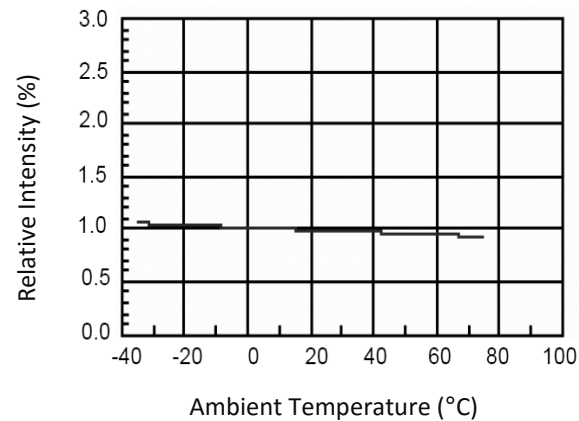
Relative Intensity v.s. Forward Current



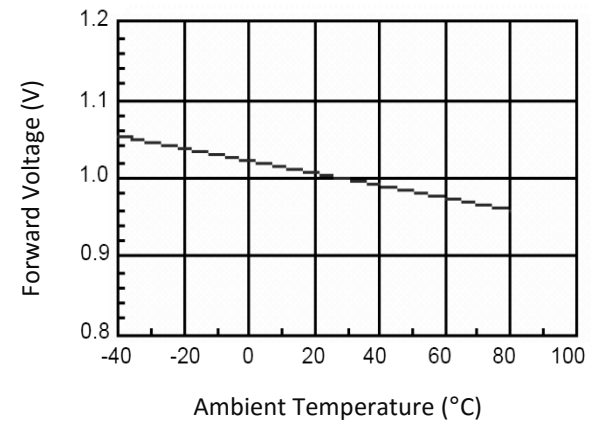
Forward Current v.s. Forward Voltage



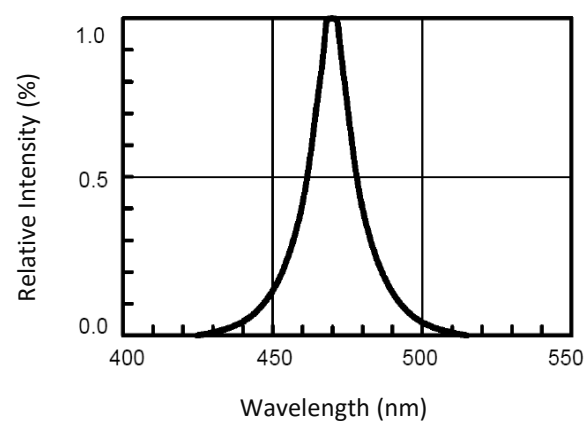
Relative Intensity v.s. Ambient Temperature



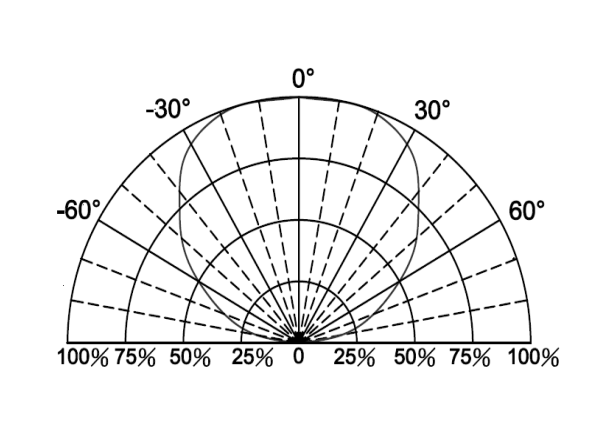
Forward Voltage v.s. Ambient Temperature



Relative Spectral Distribution

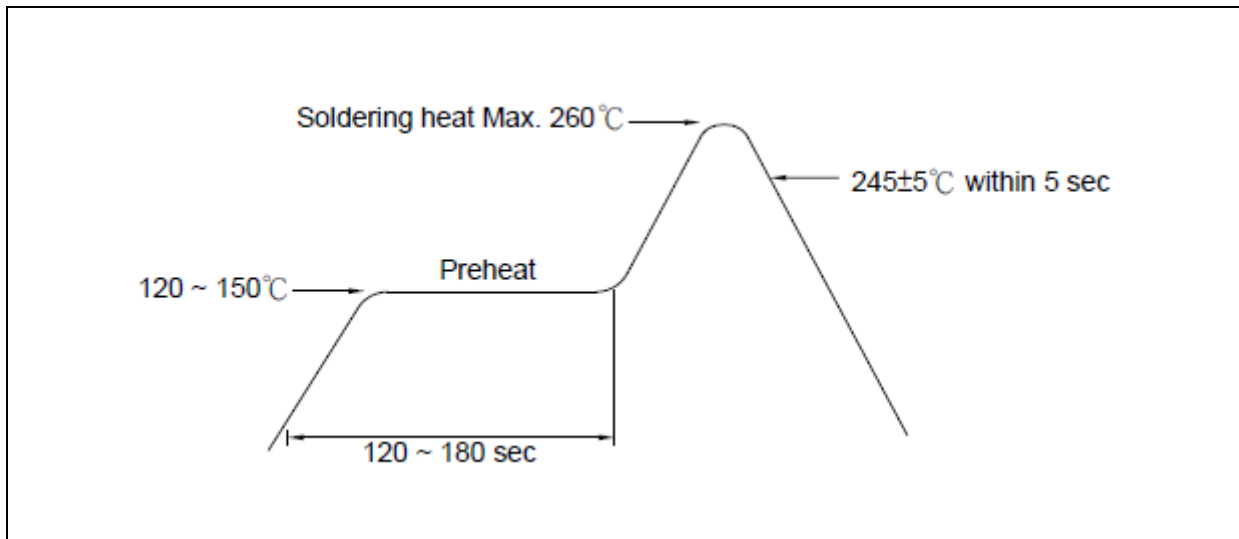


Directive Radiation

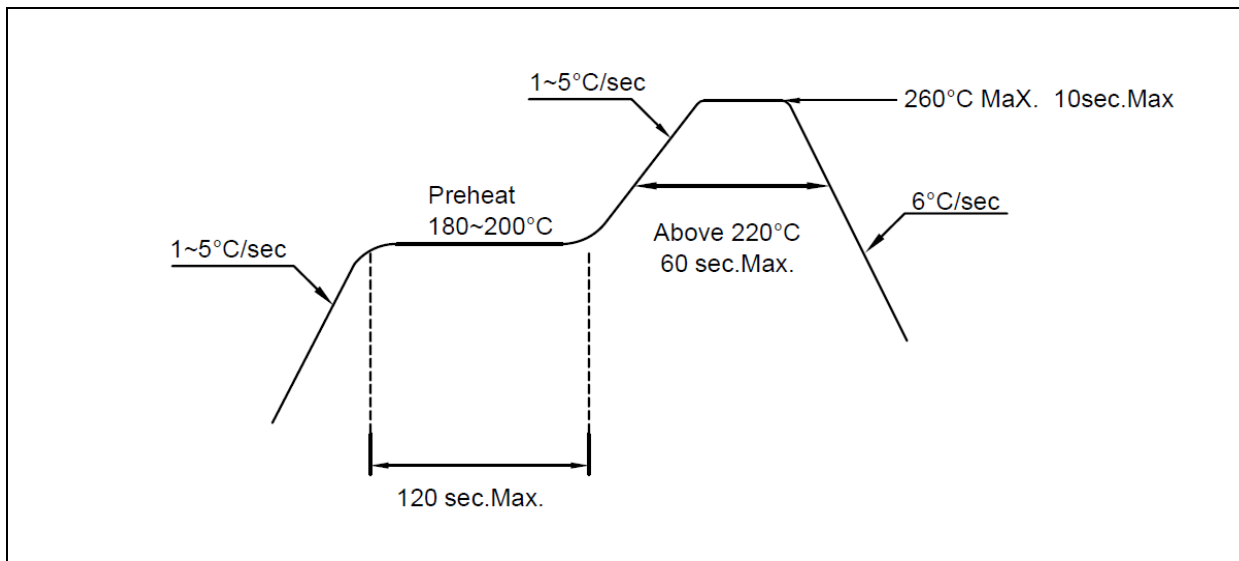


RECOMMENDED SOLDERING PROFILE:

Wave Solder:



Lead-free Reflow Solder:

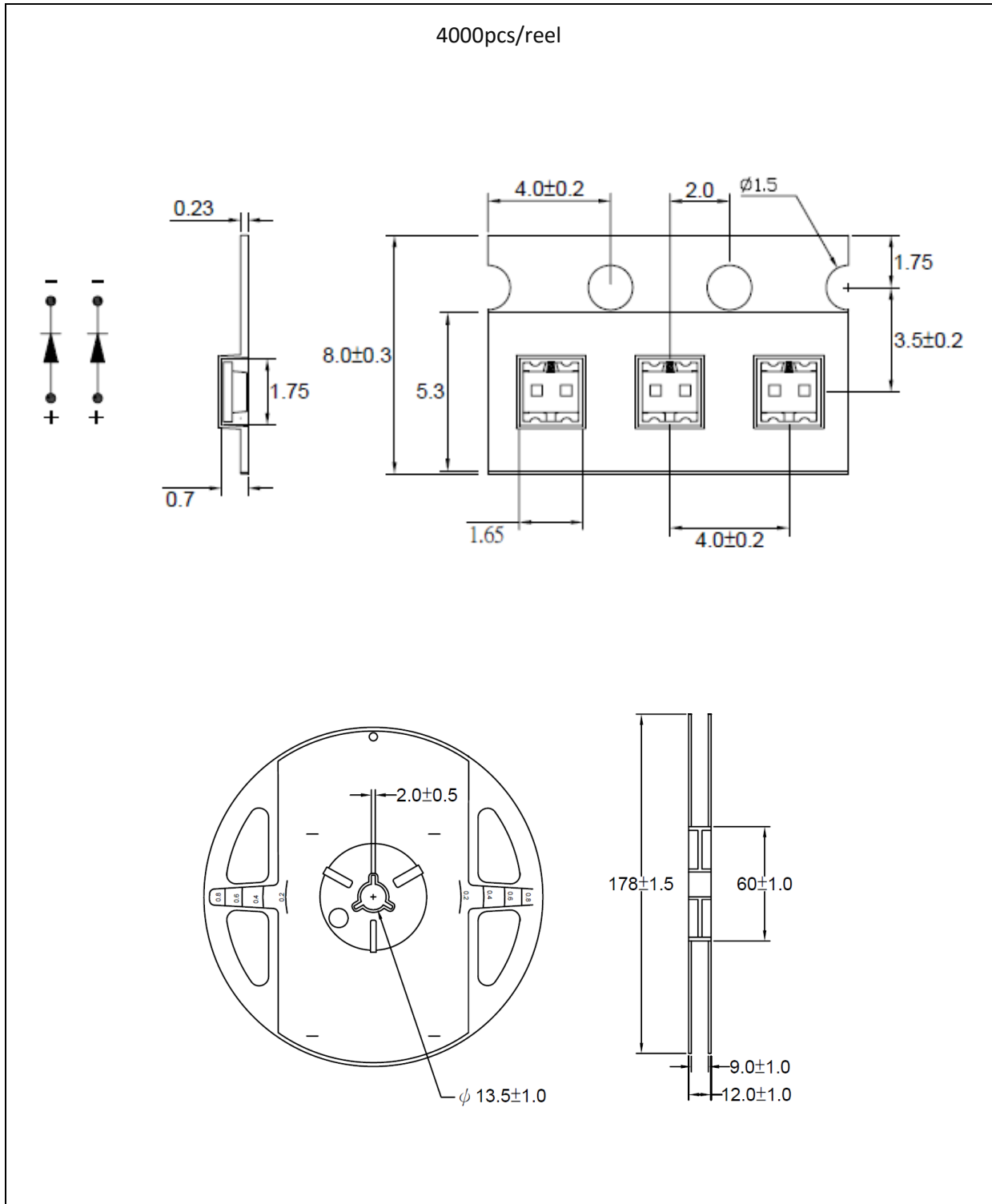


Note:

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.

PACKING SPECIFICATION:

Reel Dimension:



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.

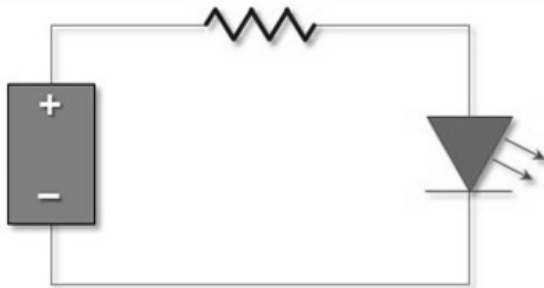
Baking:

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 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-electrostatic 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	12/10/2016	Datasheet set-up.