



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

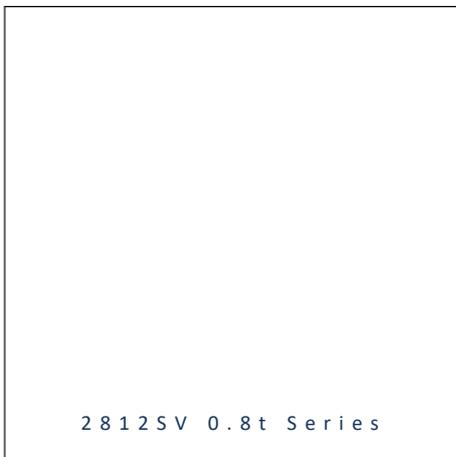


- ▶ PLCC2 Side View
- ▶ 2812SV 0.8t Series
- ▶ Warm White (3000K)

NOW45S97SV



Release Date: 08 May 2018 Version: A1.1



2812SV 0.8t Series

2812SV 0.8t Series

RoHS
Compliant



FEATURES:

- **Package:** PLCC2 White Side View SMD Package
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 3.1V
- **Luminous Intensity (typ.):** 1700mcd@20mA
- **Colour:** Warm White
- **CCT:** 3000K
- **Viewing angle:** 115° Right Angle
- **Materials:**
 - Die: InGaN
 - Resin: Silicon (Yellow Diffused)
 - L/T Finish: Ag
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Intensity
 - CIE Chromaticity
- **Soldering methods:** Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 8mm tape with Max.3000/reel, ø180mm (7")

APPLICATIONS:

- LCD Back Light
- Indicator
- Switch Lights
- LED Strip

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	30	mA
Pulse Forward Current (Duty 1/10 @10KHz)	I _{PF}	100	mA
Reverse Current @5V	I _R	50	μA
Power Dissipation	P _D	105	mW
Electrostatic Discharge (HBM)	ESD	500	V
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+100	°C
Colour Rendering Index	CRI	92	---

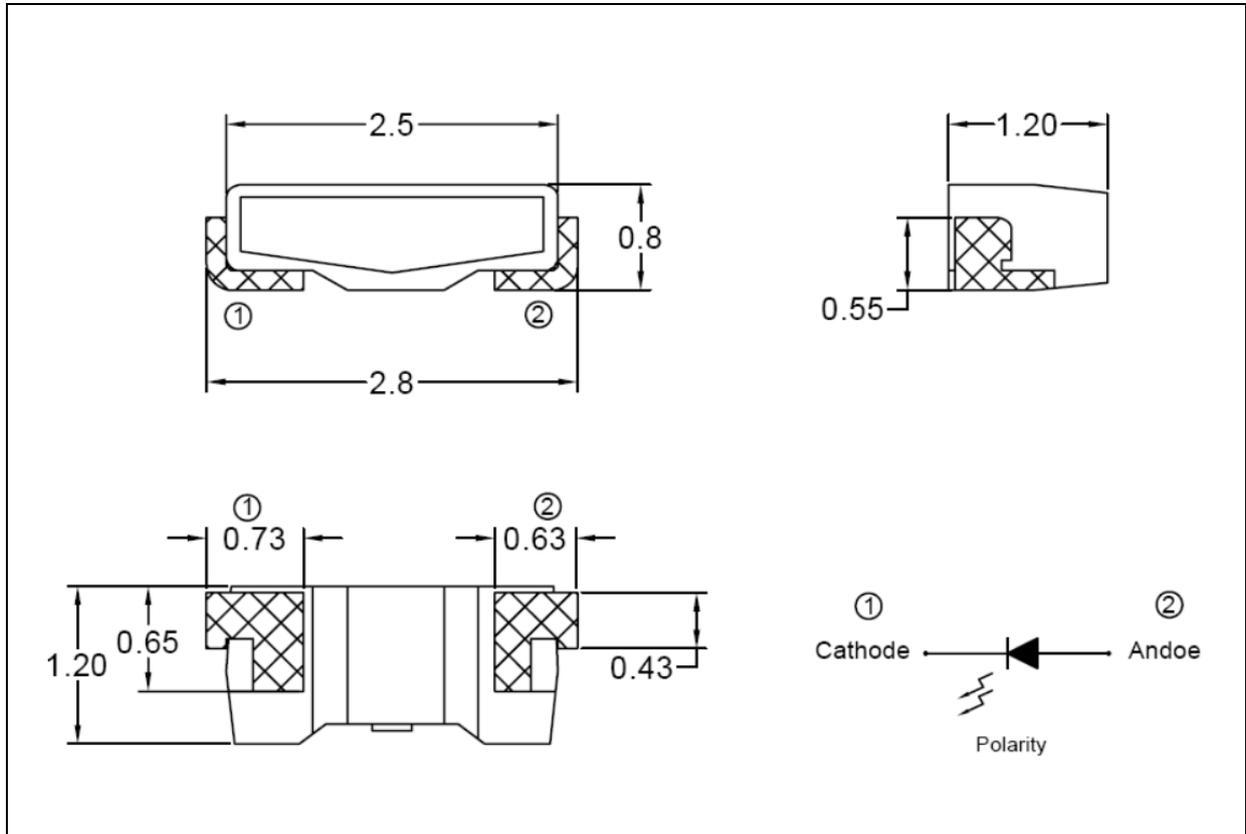
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.7	---	3.5	V	I _F =20mA
Luminous Intensity	I _v	1500	1700	---	mcd	I _F =20mA
Chromaticity Coordinates	X	0.4147	---	0.4562	---	I _F =20mA
	Y	0.3814	---	0.4260		
Colour Temperature	CCT	---	3000	---	K	I _F =20mA
Viewing Angle	2θ _{1/2}	---	115	---	deg	I _F =20mA

1. Luminous intensity (I_v) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle(2θ_{1/2}) ±10°, CRI±2

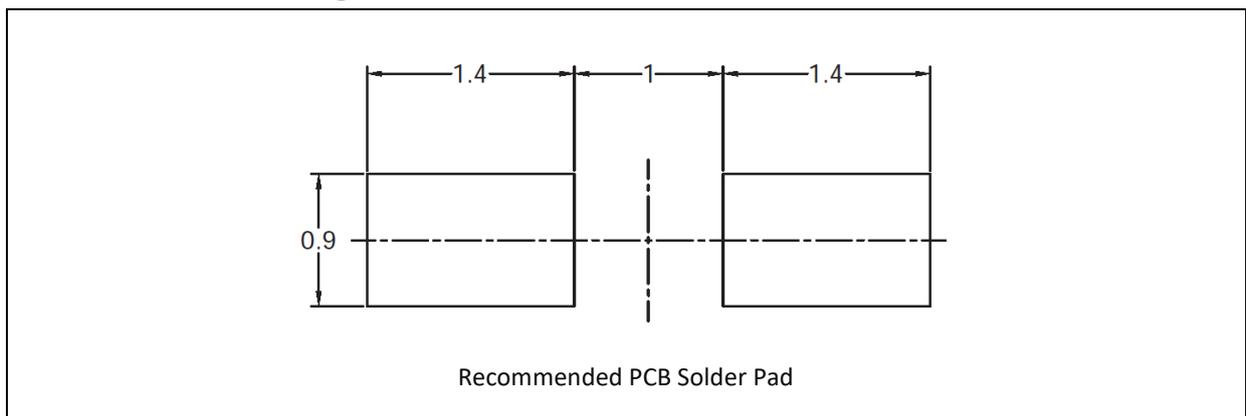
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.1 mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



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

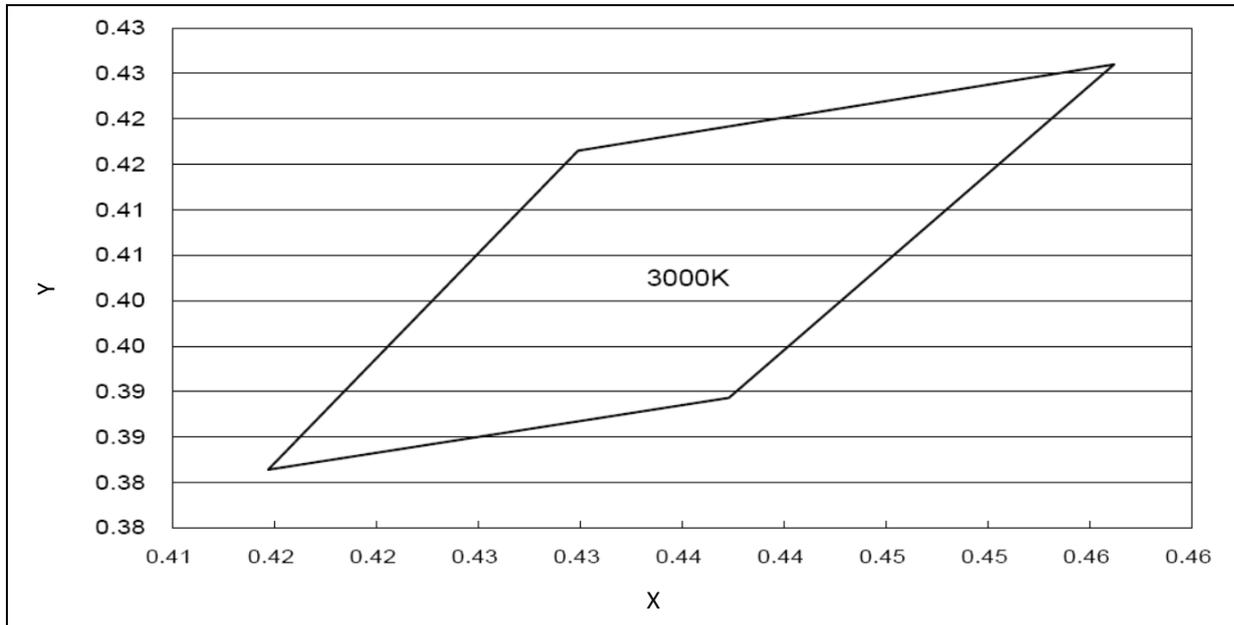
BINNING GROUPS:

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

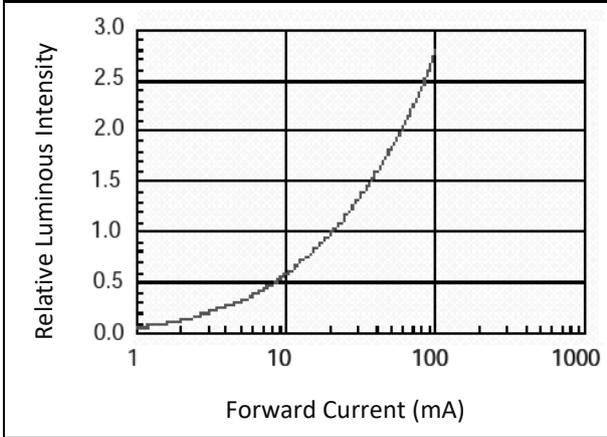
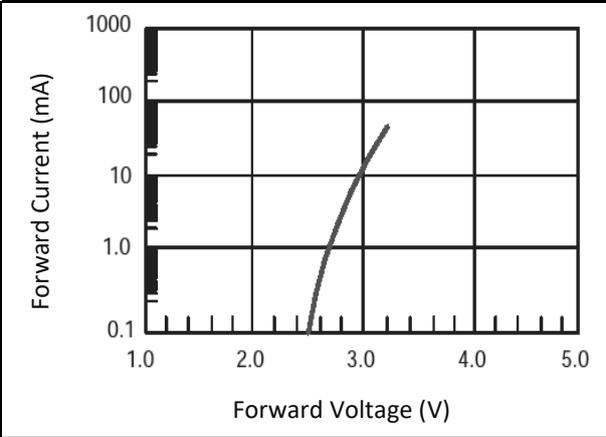
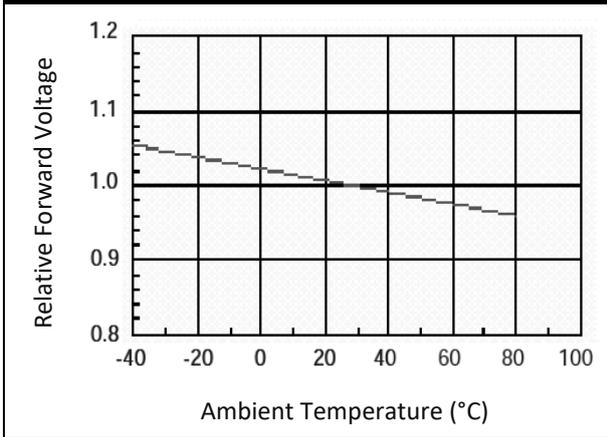
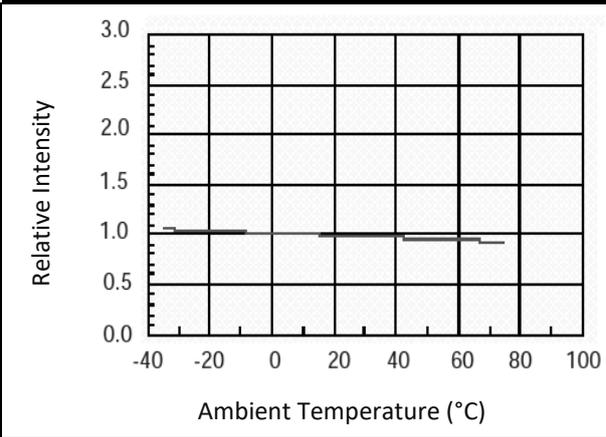
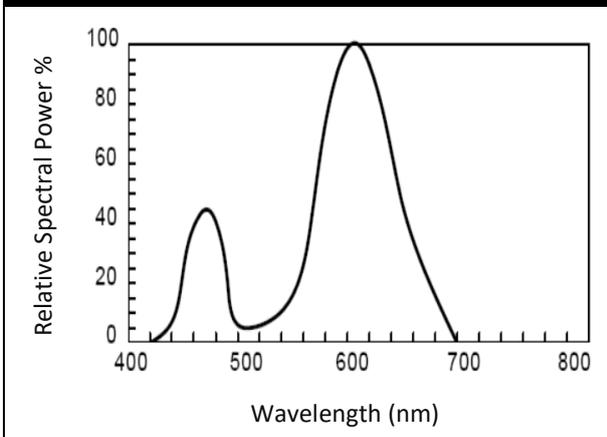
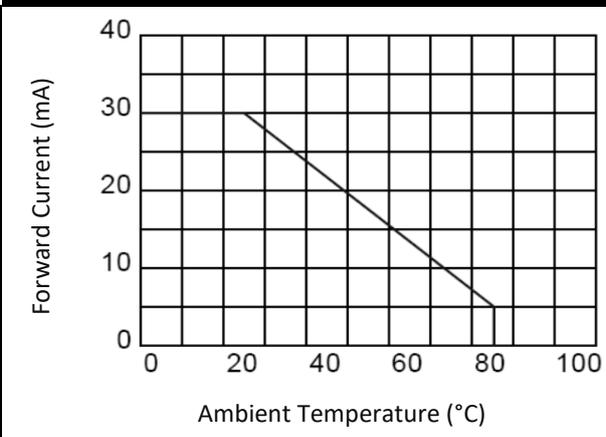
Code	Min.	Max.	Unit
1	2.7	2.8	V
2	2.8	2.9	
3	2.9	3.0	
4	3.0	3.1	
5	3.1	3.2	
6	3.2	3.3	
7	3.3	3.4	
8	3.4	3.5	

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

Code	Min.	Max.	Unit
W23W24	1500	1600	mcd
W25W31	1600	1700	
W32W33	1700	1800	
W34W35	1800	1900	
W36W37	1900	2000	

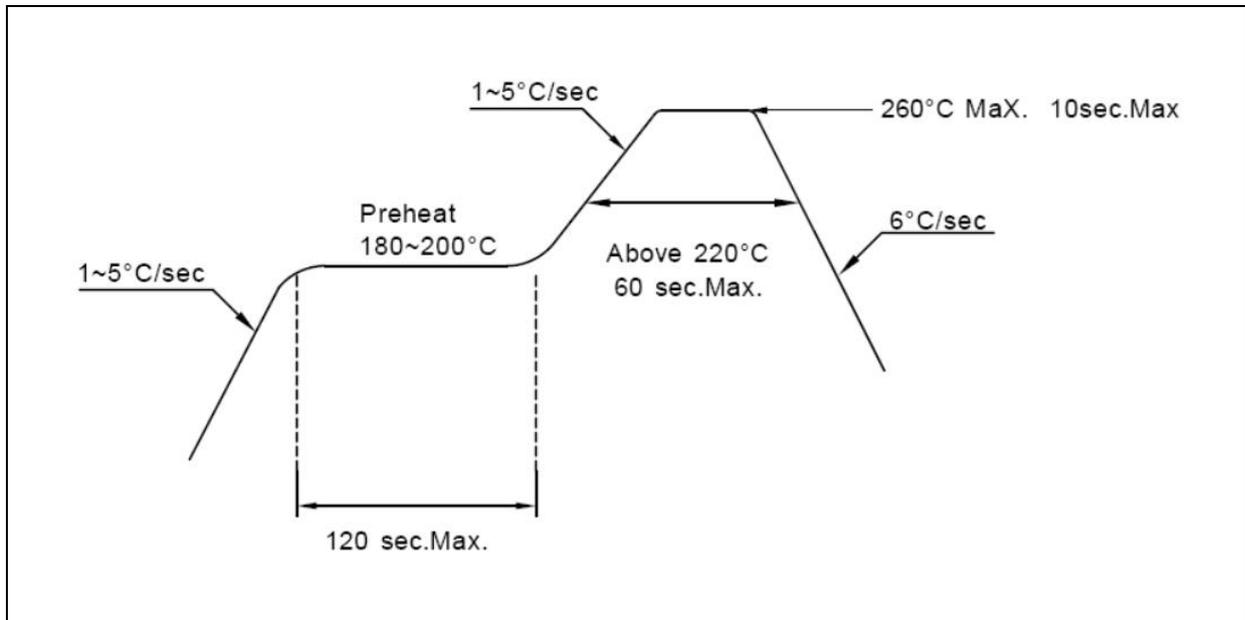
CIE CHROMATICITY DIAGRAM:

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

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
3000K	0.4299	0.4165	0.4562	0.4260	0.4373	0.3893	0.4147	0.3814

ELECTRO-OPTICAL CHARACTERISTICS:
Relative Luminous Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Voltage v.s. Ambient Temperature

Relative Intensity v.s. Ambient Temperature

Relative Spectral Power v.s. Wavelength

Forward Current Derating Curve


RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

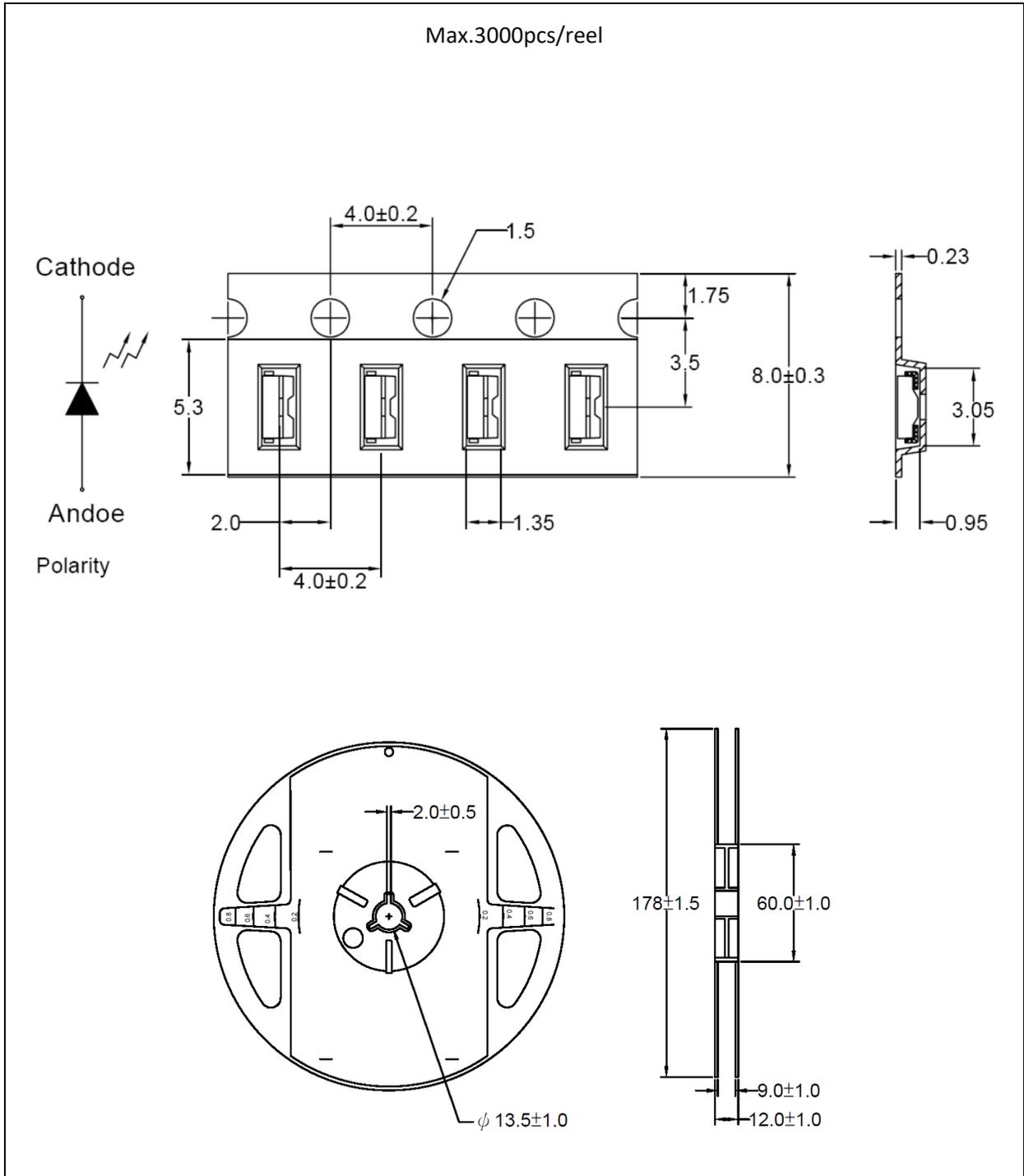


Note:

1. Maximum reflow soldering: 2 times.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

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 months 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.

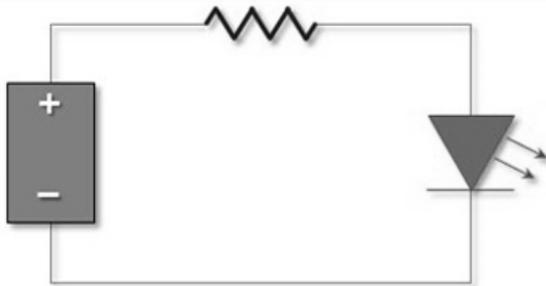
Baking:

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 24hrs 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	18/08/2015	Datasheet set-up.
A1.1	08/05/2018	New datasheet format.