BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ► Ceramic High Power
- ► 2016 0.7t Series
- ► Cool White 6500K

Release Date: 20 October 2020 Version: A1.0

N0W53S13Z

2016 0.7t Series

RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 1000mA
- **Forward Voltage (typ.):** 3.4V
- **Luminous Flux (typ.):** 240lm@1A
- **Colour:** Cool White
- **Colour Temperature (CCT):** 6500K
- **Viewing angle:** 120°
- **Materials:**
  - Die: InGaN
  - Resin: Silicon (Yellow Diffused)
  - L/T Finish: Au plated
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+85°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **Soldering methods:** IR Reflow Soldering
- **Preconditioning:** MSL5a according to J-STD020
- **Packing:** 8mm tape with max.4000pcs/reel, ø180mm (7'')

APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Mobile Flash

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	1000	mA
Pulse Forward Current, D=10% at 1KHz	I_{PF}	1500	mA
Power Dissipation	P_D	3800	mW
Reverse Current @5V	I_R	10	μA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C
Soldering Temperature	T_{SOL}	260	°C
Colour Rendering Index	CRI	>70	---
Electrostatic Discharge (HBM)	ESD	8000	V

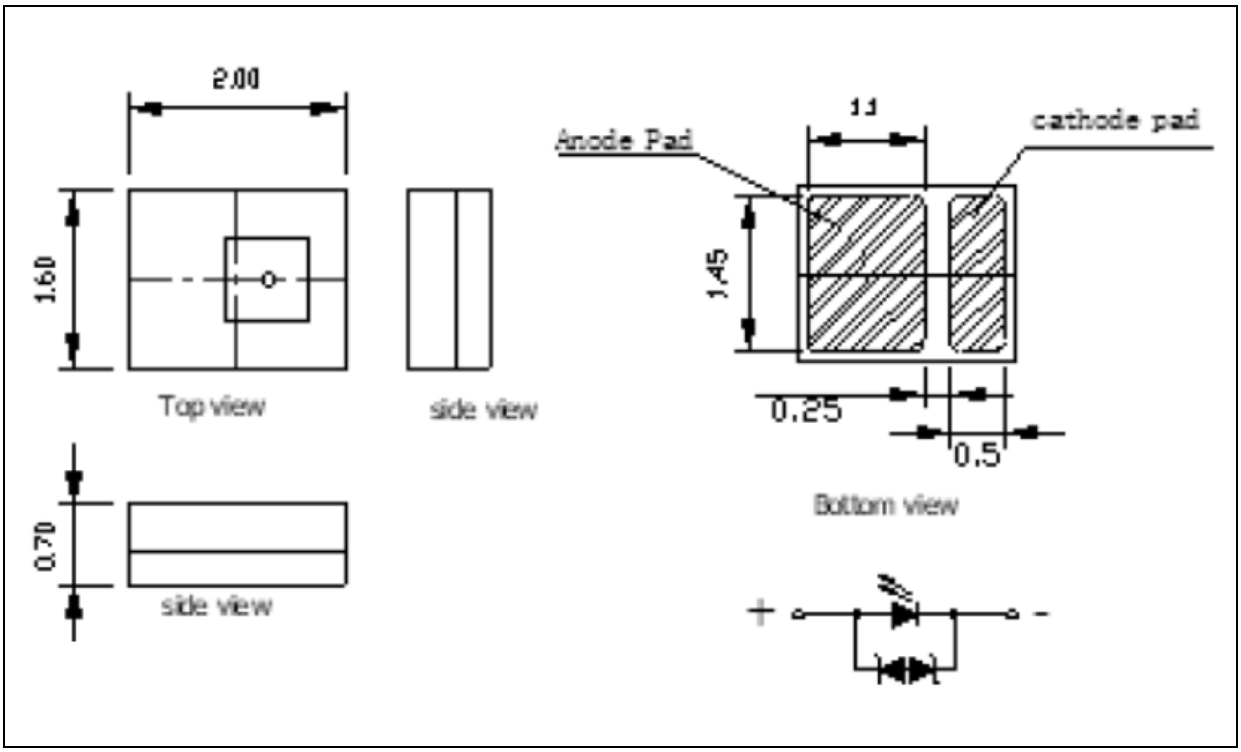
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.4	3.8	V	I_F=350mA
Luminous Flux	Φ_V	220	240	---	lm	I_F=350mA
Chromaticity Coordinates	X	---	0.3100	---	---	I_F=350mA
	Y	---	0.3200	---		
Colour Temperature	CCT	5000	6500	8000	K	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=350mA

1. Luminous flux (Φ_V) ±7%, Forward Voltage (V_F) ±0.05V, Viewing angle($2\theta_{1/2}$) ±10°

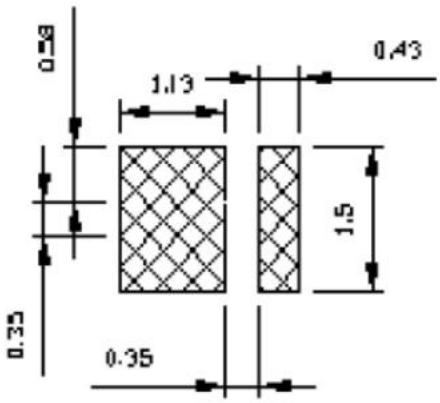
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:

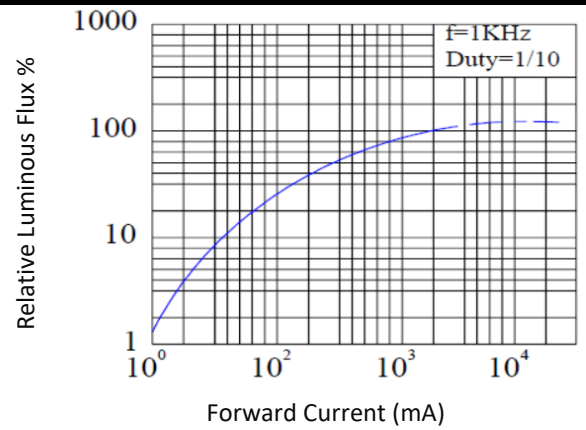


Recommended Stencil Pattern

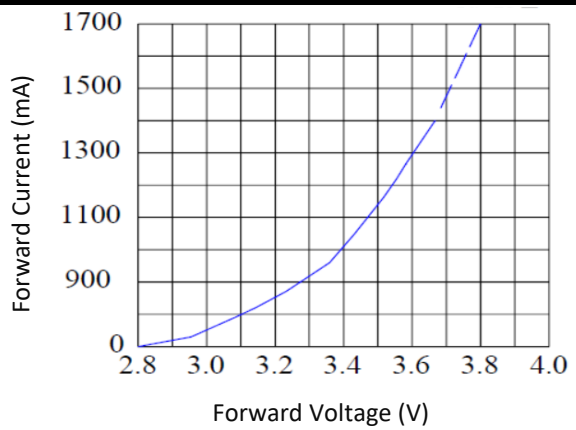
1. Dimensions are in millimetre (mm).
2. Tolerance ±0.12mm with angle tolerance ±0.5°.

ELECTRO-OPTICAL CHARACTERISTICS:

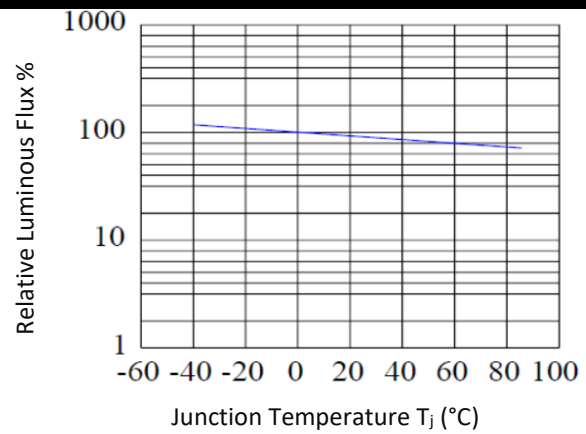
Relative Luminous Flux v.s. Forward Current



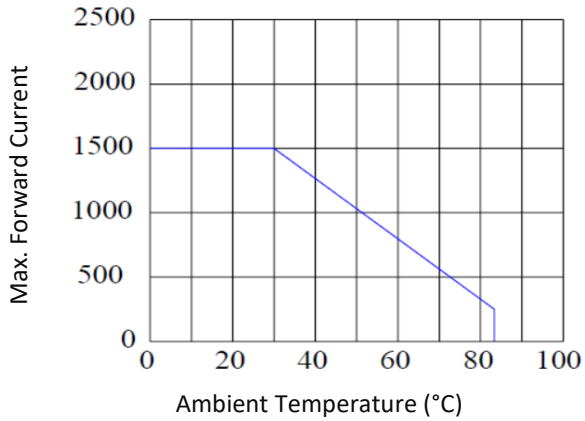
Forward Current v.s. Forward Voltage



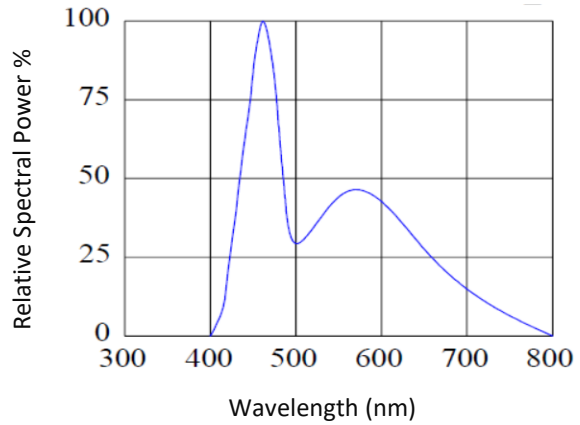
Relative Flux v.s. Junction Temperature



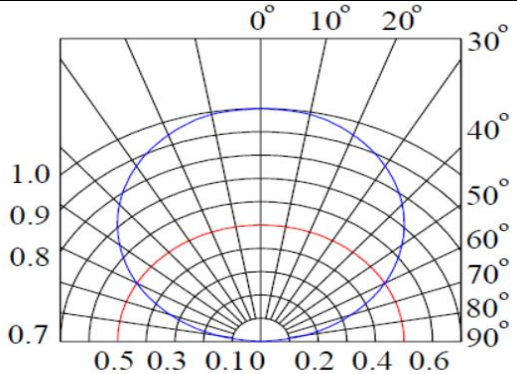
Max. Current v.s. Ambient Temperature



Relative Spectral Power v.s. Wavelength

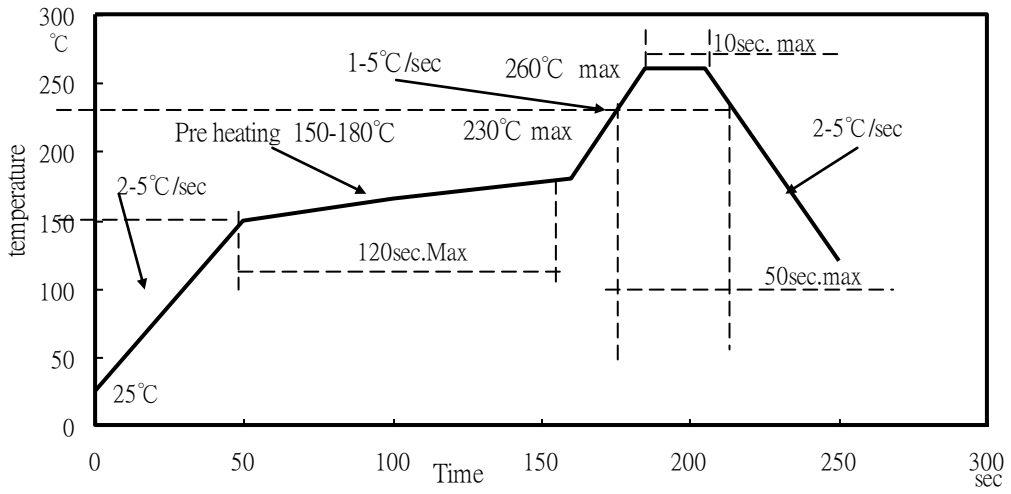


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



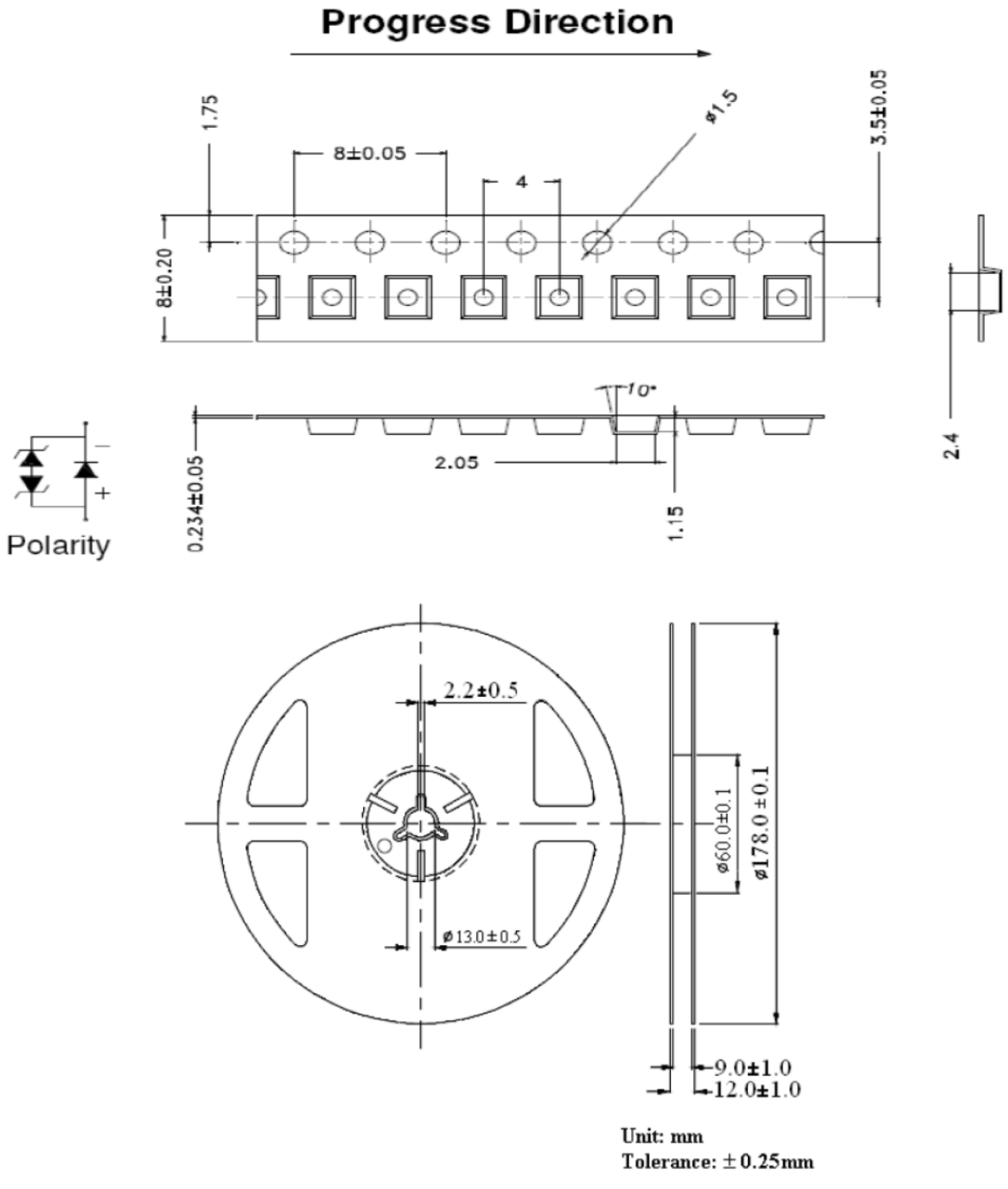
Note:

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

Max.4000pcs



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 descanting agent <10% R.H. and before use.

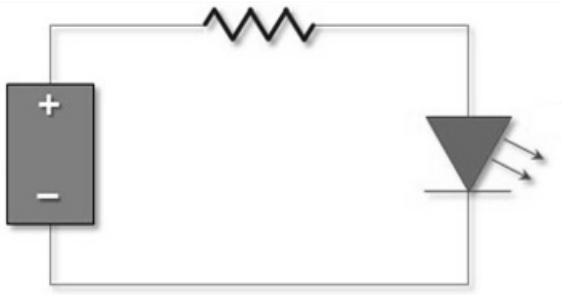
Baking:

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 handing 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	20/10/2020	Datasheet set-up.