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
- ► 3535 3.6t Series
- ► Red (620~630nm)

Release Date: 06 July 2021 Version: A1.0

N0R56S85

3535 3.6t Series

RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 2.2V
- **Luminous Flux (typ.):** 50lm@350mA
- **Colour:** Red
- **Wavelength:** 620~630nm
- **Viewing angle:** 30°
- **Materials:**
  - Resin: Silicon (Water Clear)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - Dominant Wavelength
- **Soldering methods:** Reflow Soldering
- **Preconditioning:** MSL4 according to J-STD020
- **Packing:** 12mm tape with max.500pcs/reel, ø180mm (7'')

APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Plant Grow Light

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	700	mA
Pulse Forward Current	I_{PF}	1000	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Junction Temperature	T_j	115	°C
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C
Soldering Temperature	T_{SOL}	260	°C
Thermal Resistance - Junction to Solder Point	R_{th}	7	°C/W

* in the order of Cool White / Warm White

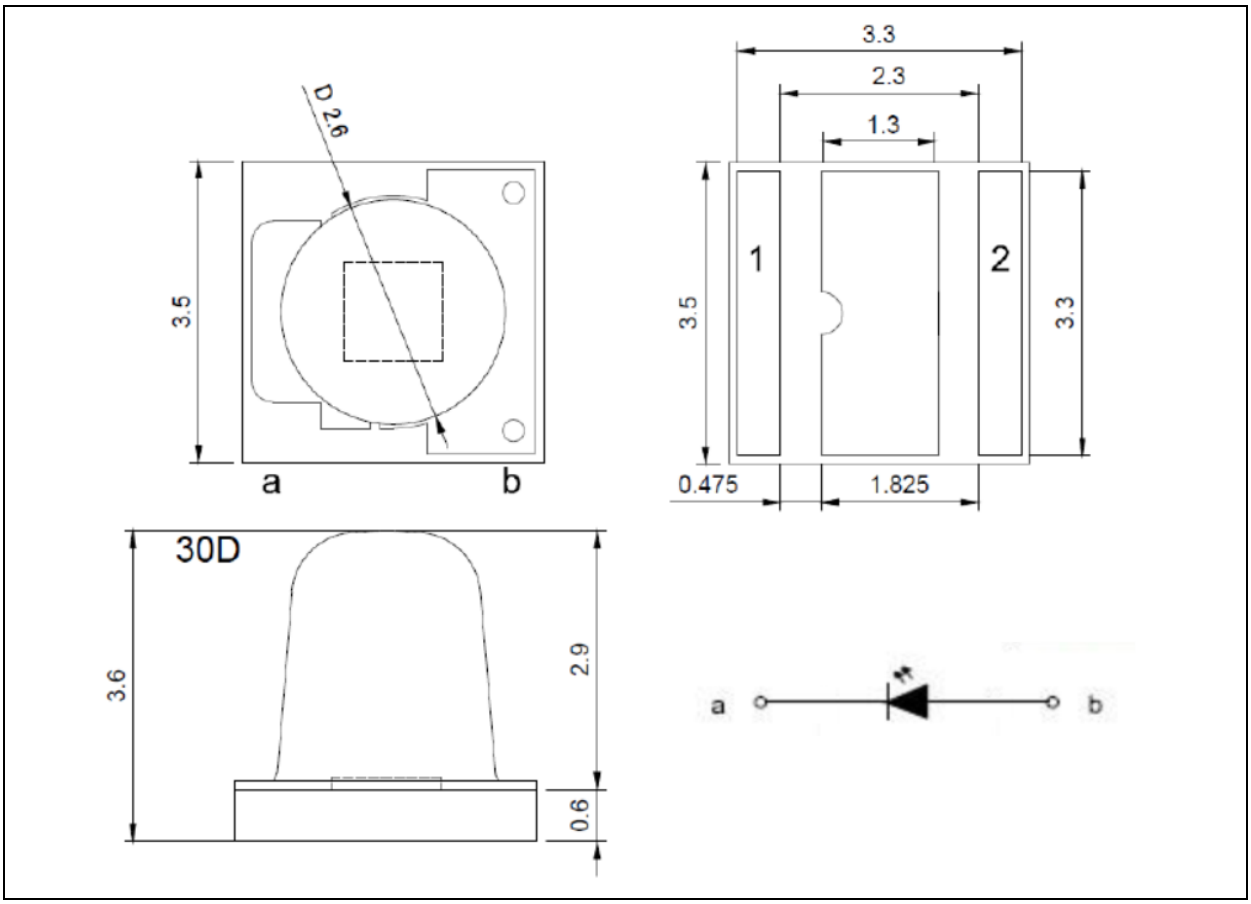
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.8	---	2.6	V	I_F=350mA
Luminous Flux	Φ_V	40	---	70	lm	I_F=350mA
Dominant Wavelength	λ_D	620	---	630	nm	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	30	---	deg	I_F=350mA

1. Radiant Flux (Φ_V) ±5%, Forward Voltage (V_F) ±0.06V, Viewing angle($2\theta_{1/2}$) ±10°

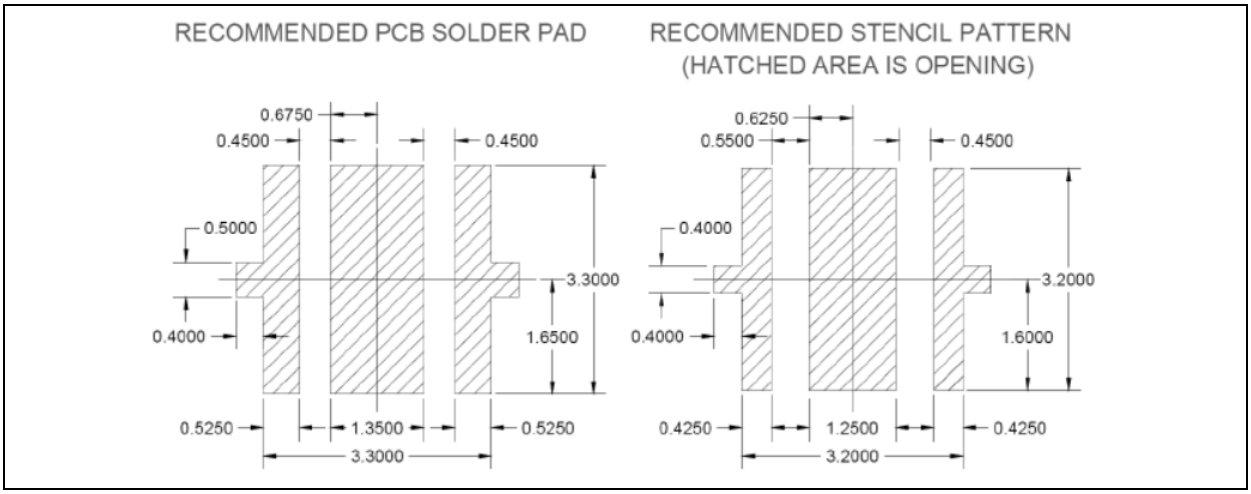
OUTLINE DIMENSION:

Package Dimension:



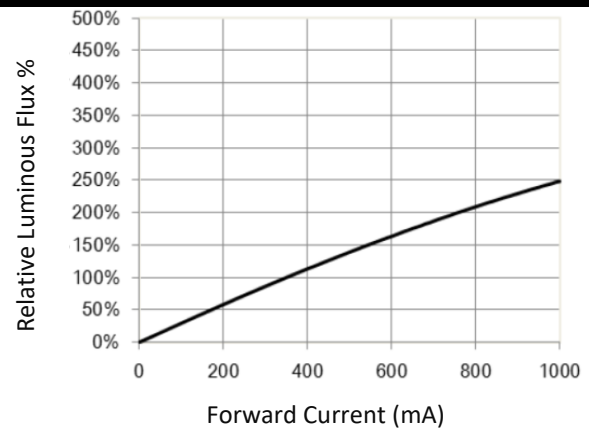
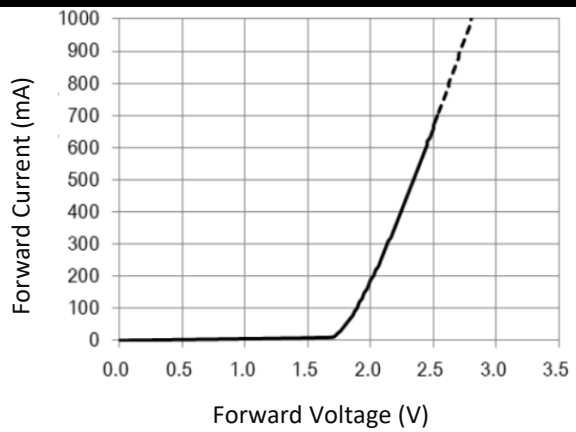
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

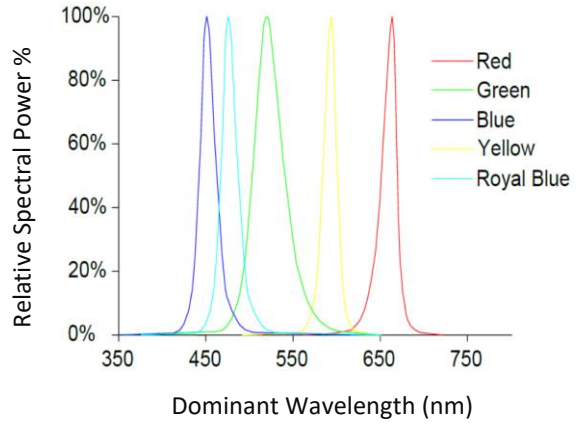
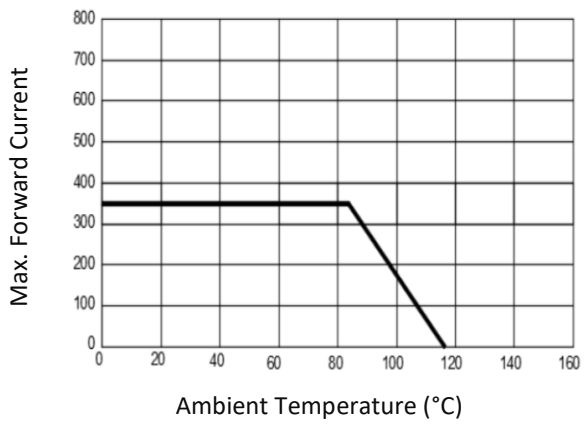
Recommended Soldering Pad Dimension:



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 Spectral Power v.s. Wavelength	Max. Current v.s. Ambient Temperature
	

BINNING GROUPS:

Forward Voltage Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
V18	1.8	2.0	V
V20	2.0	2.2	
V22	2.2	2.4	
V24	2.4	2.6	

Luminous Flux Classifications (I_F = 350mA):

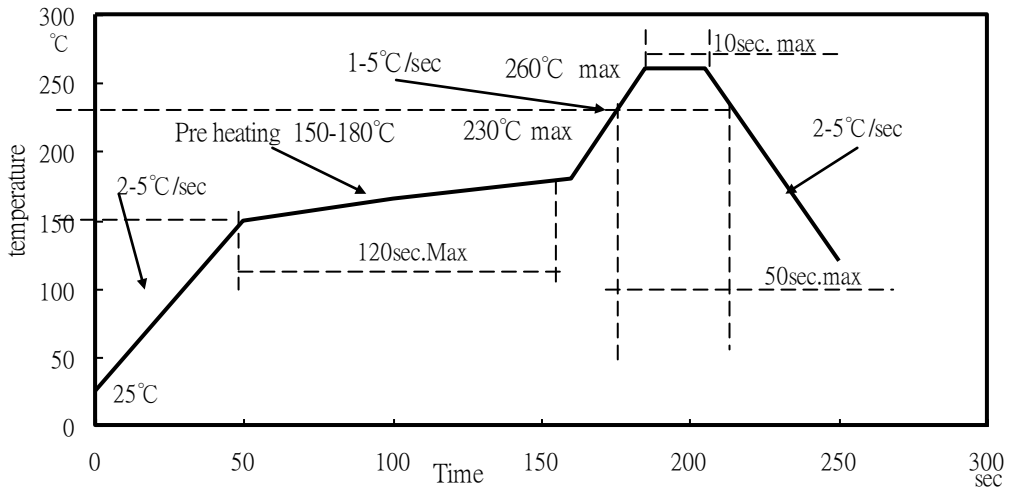
Code	Min.	Max.	Unit
A40	40	45	lm
A45	45	50	
A50	50	55	
A55	55	60	
A60	60	65	
A65	65	70	

Dominant Wavelength Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
R1	620	625	nm
R2	625	630	

RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



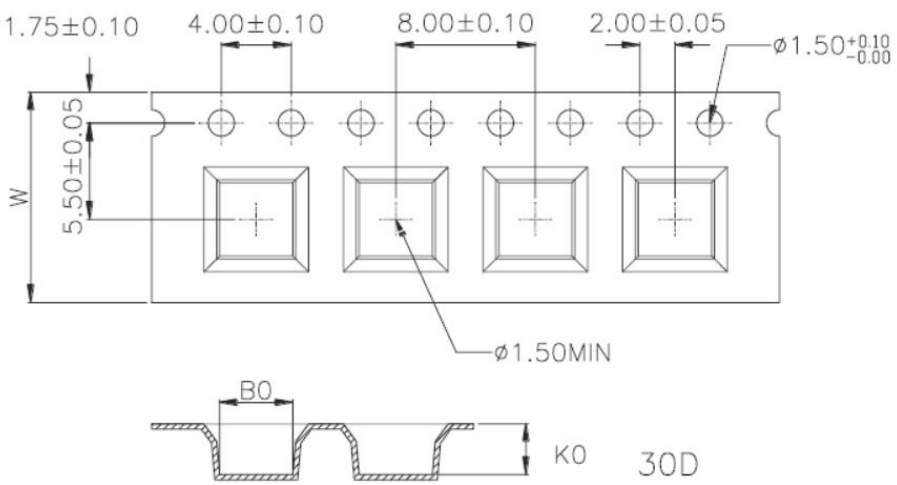
Note:

1. Maxima reflow soldering: 3 times.
2. The recommend reflow temperature is 240°C. The maxima 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.500pcs/reel



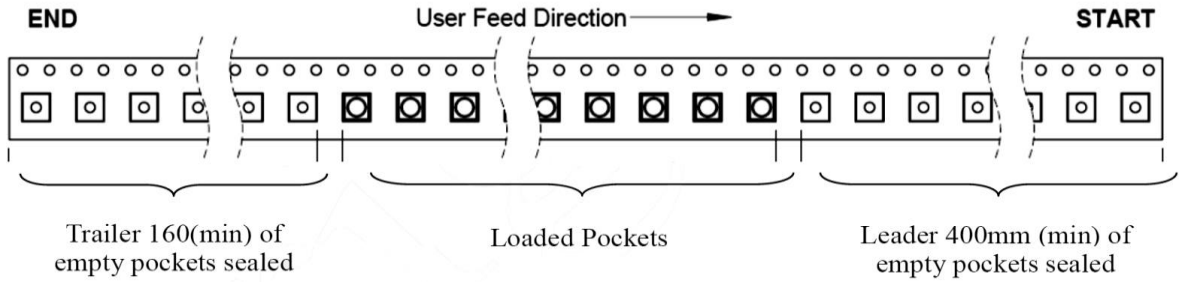
1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30±0.05mm.
6. Packing length per 22 " reel : 62.5 Meters(1:3).

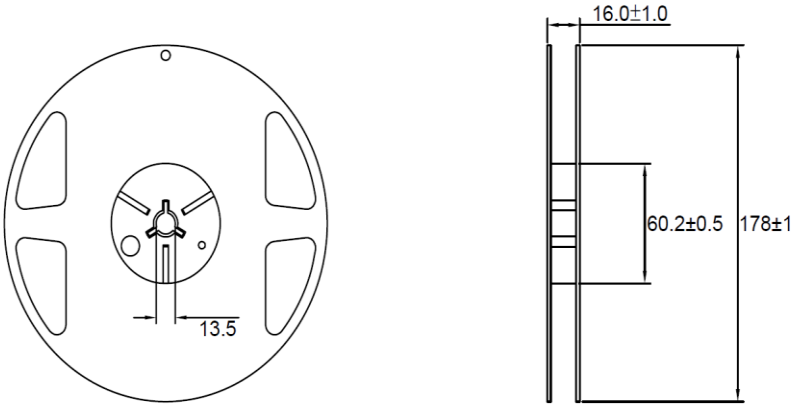
30D

W	12.00±0.30
A0	4.20±0.10
B0	4.20±0.10
K0	3.50±0.10

60D

W	12.00±0.30
A0	4.20±0.10
B0	4.20±0.10
K0	2.90±0.10





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 apply baking before use.

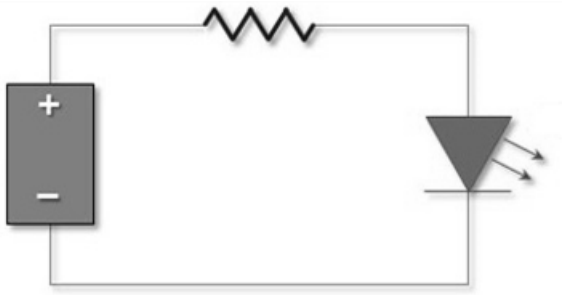
Baking:

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 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 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	06/07/2021	Datasheet set-up.