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BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

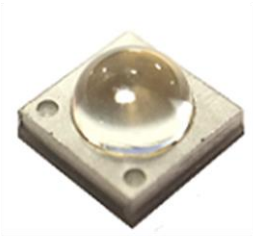
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- Ceramic High Power
- 3939 2.56t Series
- UV (410-420nm)

Release Date: 10 September 2020 Version: A1.0

N0Q52S68Z



3535 2.56t Series

3939 2.56t Series

RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Glass Lens
- **Forward Current:** 1000mA
- **Forward Voltage (typ.):** 4.0V
- **Radiant Power (typ.):** 1800mW@1000mA
- **Colour:** Ultraviolet (UV)
- **Wavelength:** 410-420nm
- **Viewing angle:** 60°
- **Materials:**
  - Die: InGaN
  - Resin: Glass (Water Clear)
  - L/F: Ceramic
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+80°C
- **ESD:** 8KV (HBM)
- **Grouping parameters:**
  - Forward Voltage
  - Radiant Power
  - Peak Wavelength
- **Soldering methods:** IR Reflow soldering
- **MSL:** Level 2 according to J-STD020
- **Packing:** 12mm tape with min. 100pcs/reel, ø180mm (7'')

APPLICATIONS:

- Industrial Curing
- Counterfeit Detection
- Medical Device
- Fluorochemistry
- Bacterial Identification
- Cosmetology
- Magnetic Particle Inspection
- Clean Room Inspection
- Mineralogy

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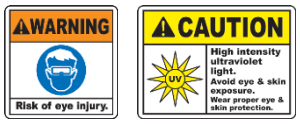

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CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Maximum Forward Current	I_{MAX}	1000	mA
Pulse Current D=0.01s Duty 1/10	I_P	1200	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Electrostatic Discharge (HBM)	ESD	8000	V
Junction Temperature	T_j	100	°C
Thermal Resistance Junction to Solder Point	R_{THJS}	4.5	°C/W
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+80	°C
Solder Temperature	T_{SOL}	260	°C

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	3.1	---	4.8	V	I_F=1000mA
Radiant Power	P_O	1600	---	2000	mW	I_F=1000mA
Peak Wavelength	W_P	410	---	420	nm	I_F=1000mA
Viewing Angle	$2\theta_{1/2}$	---	60	---	deg	I_F=1000mA

1. Radiant Power (P_O) ±10%, Forward Voltage (V_F) ±0.05V, Wavelength (nm) ±2nm

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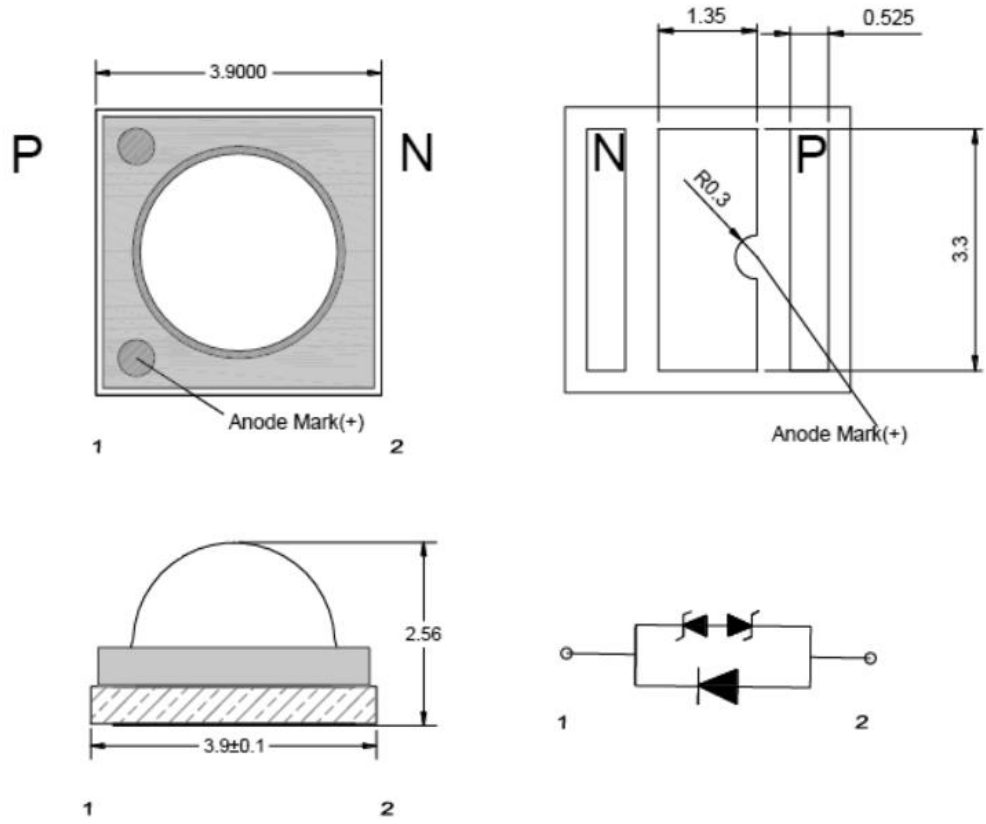
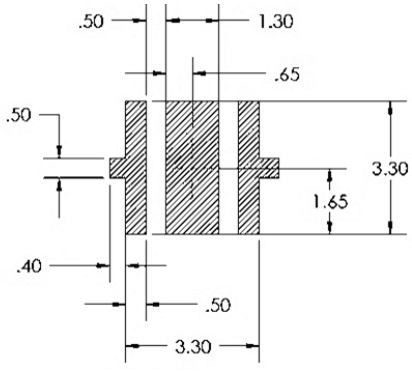
OUTLINE DIMENSION:

Package Dimension:

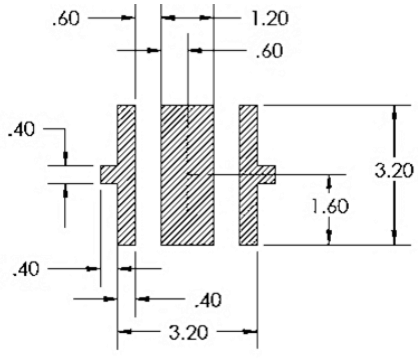


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad



Recommended Stencil Pattern

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

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BINNING GROUPS:

Forward Voltage Classifications (I_F = 1000mA):

Code	Min.	Max.	Unit
V0	3.0	3.2	V
V1	3.2	3.4	
V2	3.4	3.6	
V3	3.6	3.8	
V4	3.8	4.0	
V5	4.0	4.2	
V6	4.2	4.4	
V7	4.4	4.6	
V8	4.6	4.8	

Radiant Power Classifications (I_F = 1000mA):

Code	Min.	Max.	Unit
C7	1600	1700	mW
C8	1700	1800	
C9	1800	1900	
C10	1900	2000	

Peak Wavelength Classifications (I_F = 1000mA):

Code	Min.	Max.	Unit
VA	410	415	nm
VB	415	420	

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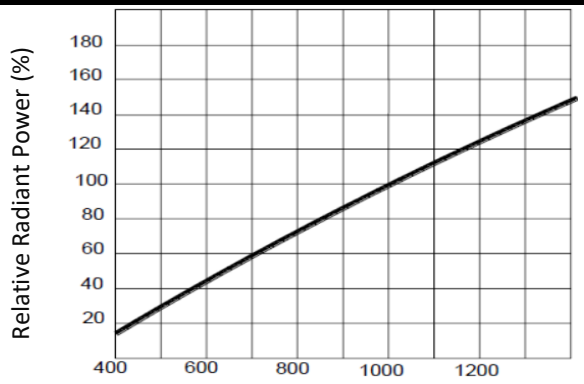
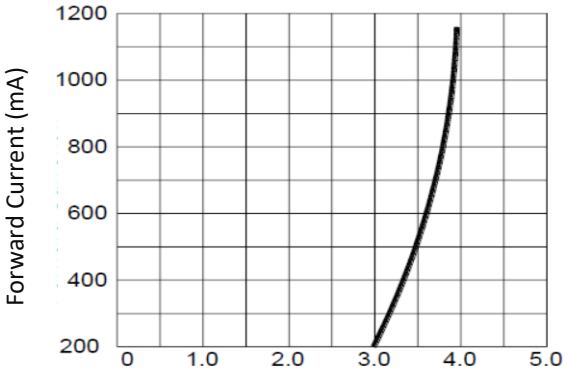
ELECTRO-OPTICAL CHARACTERISTICS:

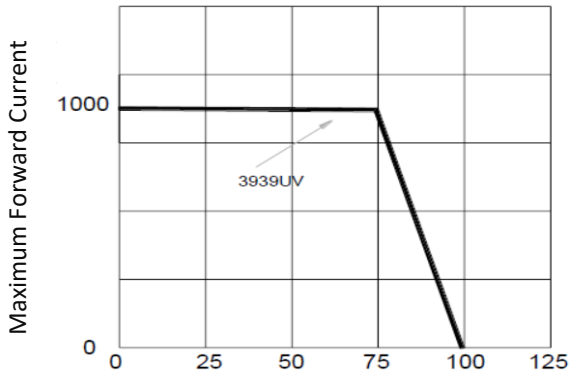
Relative Power v.s. Forward Current



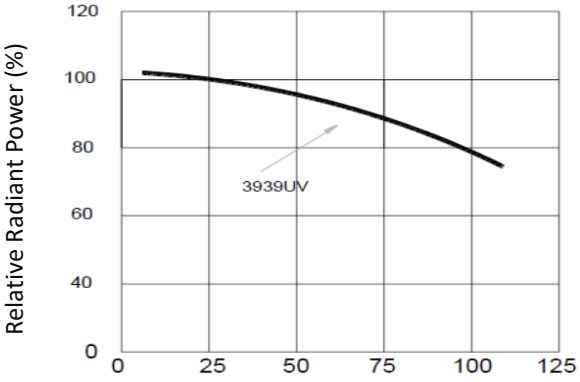
Forward Current v.s. Forward Voltage



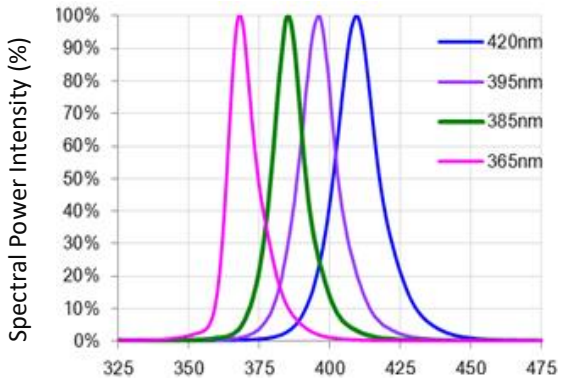
Forward Current v.s. Ambient Temperature



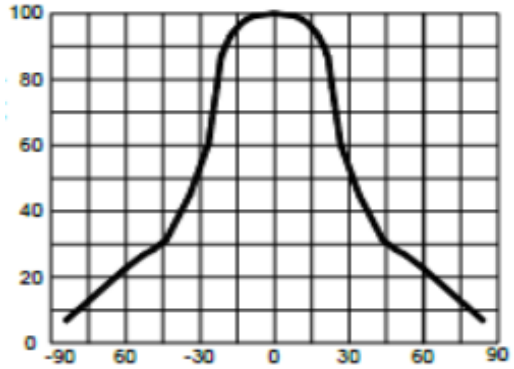
Radiant Power v.s. Temperature



Relative Spectral Power Distribution



Directive Radiation



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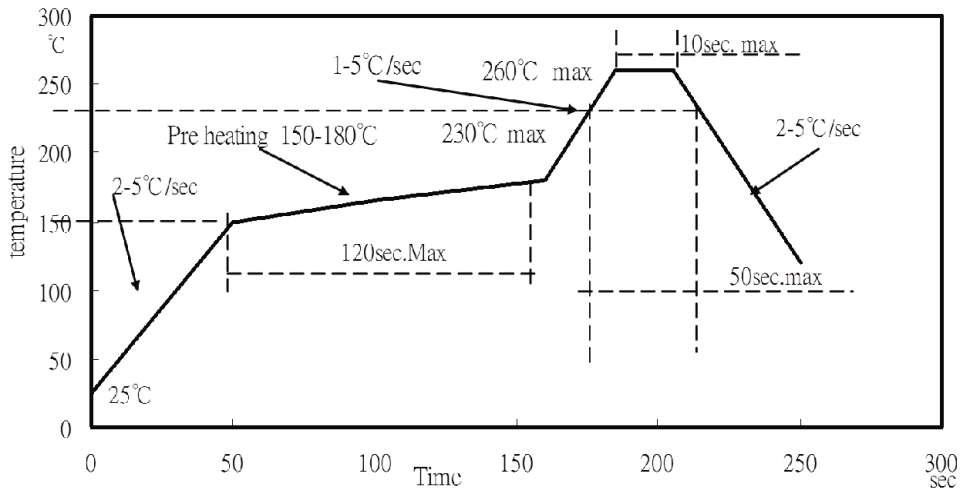
RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



Note:

1. Maximum reflow soldering: 2 times.
2. Recommended reflow temperature 240°C. 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.

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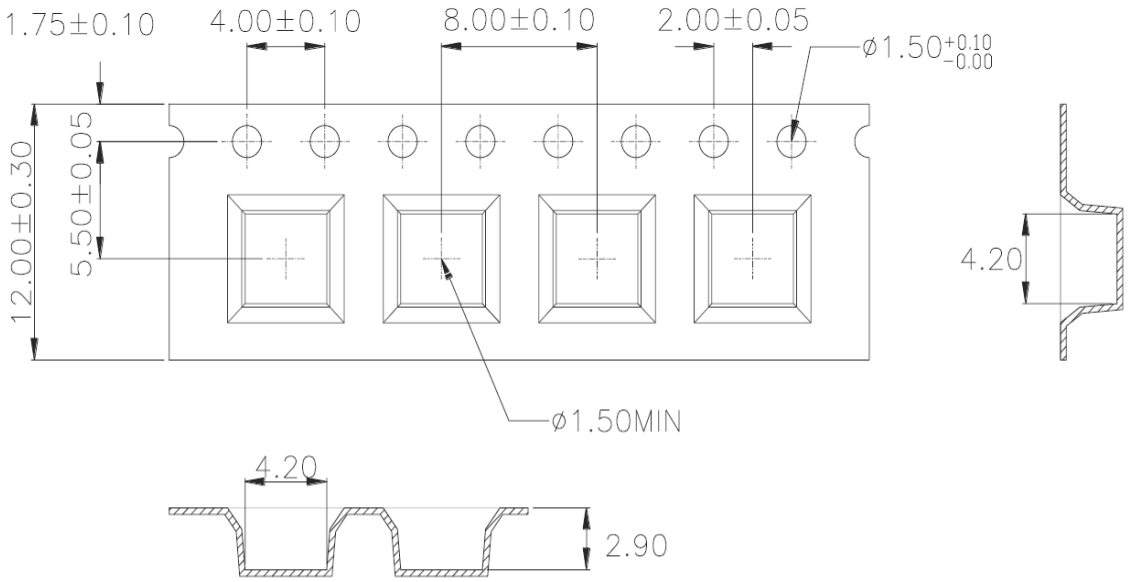
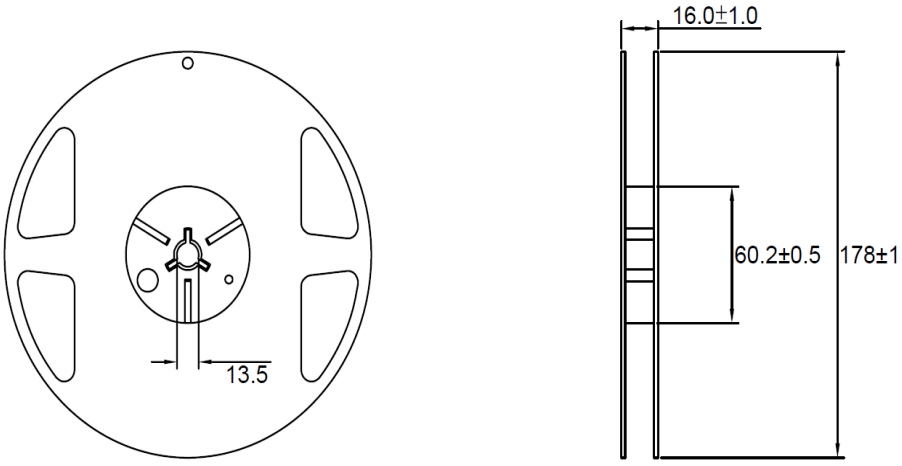
PACKING SPECIFICATION:

Reel Dimension:

Min.100pcs/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).
7. Component load per 13" reel : 2500 pcs.



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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.

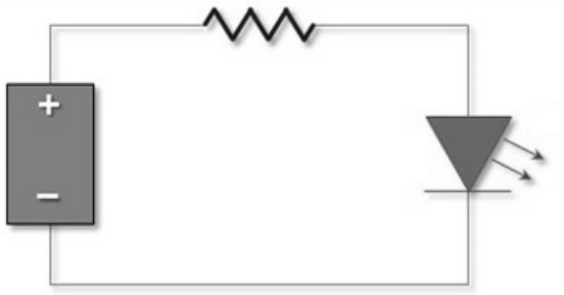
Baking:

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:

- 65±3°C x 12hrs 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.

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REVISION RECORD:

Version	Date	Summary of Revision
A1.0	10/09/2020	Datasheet set-up.

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