BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

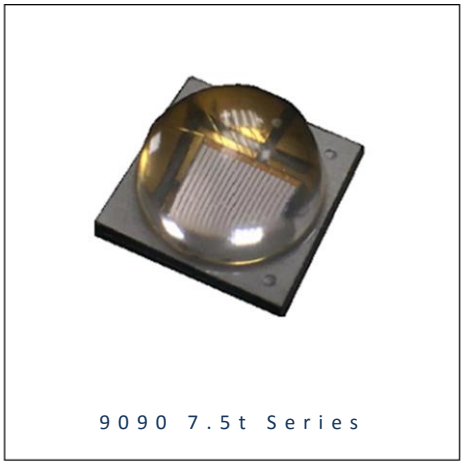
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- Ceramic High Power
- 9090 7.5t Series
- UV (365-370nm)

Release Date: 03 November 2016 Version: A1.0

N0Q28S79



9090 7.5t Series

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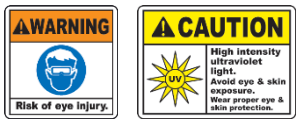
RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Quartz Glass Lens
- **Forward Current:** 4000mA
- **Forward Voltage (typ.):** 4.4V
- **Radiant Power (typ.):** 3000mW@4000mA
- **Colour:** Ultraviolet (UV)
- **Wavelength:** 365-370nm
- **Viewing angle:** 60°
- **Materials:**
  - Die: InGaN
  - Resin: Quartz Glass (Water Clear)
  - L/F: AlN
- **Operating Temperature:** -40~+50°C
- **Storage Temperature:** -40~+100°C
- **ESD:** 8KV (HBM: MIL-STD-883 Class 3B)
- **Grouping parameters:**
  - Forward voltage
  - Radiant power
  - Peak Wavelength
- **Soldering methods:** Reflow soldering
- **MSL:** Level 3 according to J-STD020
- **Packing:** 24mm tape with min. 10pcs/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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CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Maximum Forward Current	I_{MAX}	7000	mA
Pulse Forward Current (D=0.01s; Duty 1/10)	I_{PF}	10000	mA
Reverse Voltage	V_R	-5	V
Reverse Current @5V	I_R	3	μA
Electrostatic Discharge (HBM)	ESD	8000	V
Junction Temperature	T_j	105	°C
Thermal Resistance Junction to Solder Point	R_{THJS}	0.8	°C/W
Operating Temperature	T_{OPR}	-40~+50	°C
Storage Temperature	T_{STG}	-40~+100	°C
Solder Temperature	T_{SOL}	260	°C

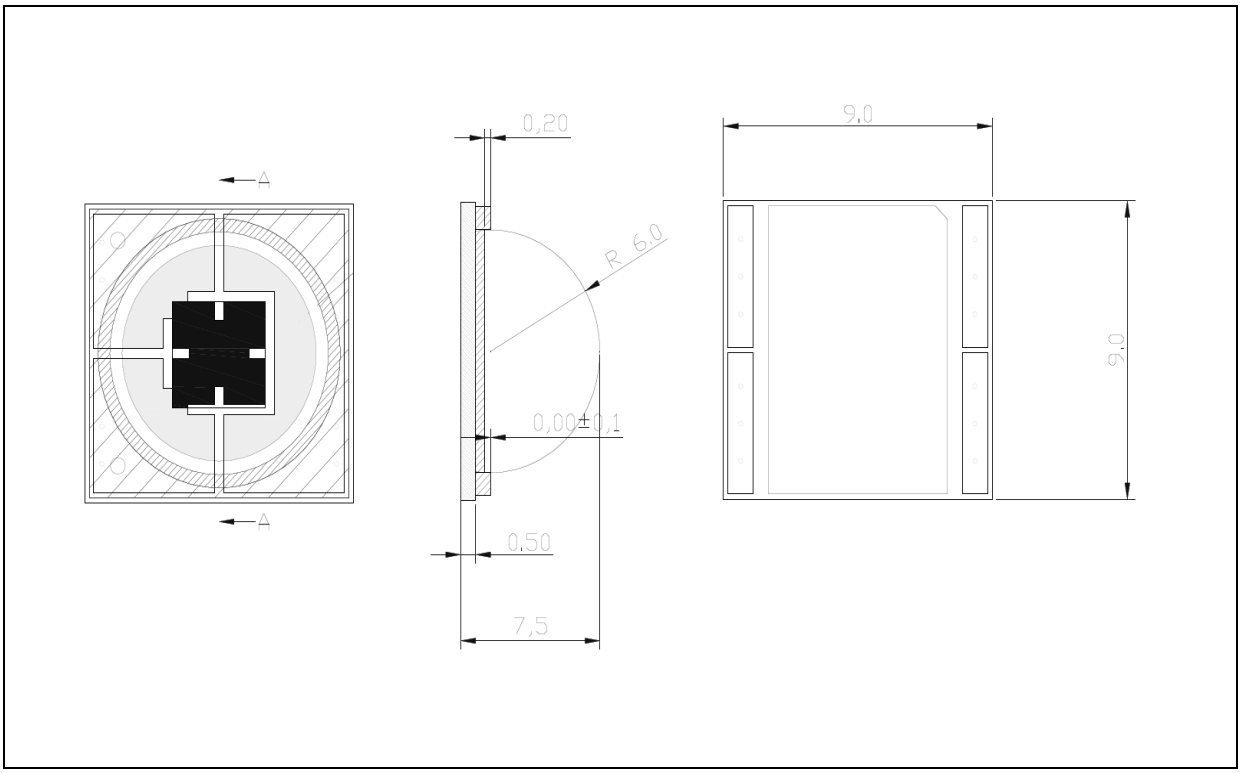
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	3.4	4.4	5.4	V	I_F=4000mA
Radiant Power	P_O	2000	---	4000	mW	I_F=4000mA
Wavelength	W_P	365	---	370	nm	I_F=4000mA
Viewing Angle	$2\theta_{1/2}$	---	60	---	deg	I_F=4000mA

1. Radiant Power (P_O) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±10°, Wavelength (nm) ±2nm

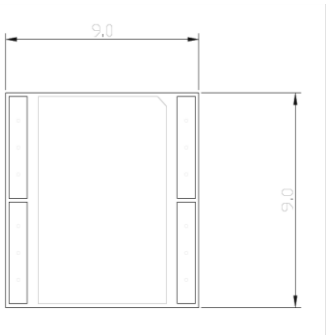
OUTLINE DIMENSION:

Package Dimension:



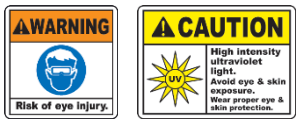
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad

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 = 4000mA):

Code	Min.	Max.	Unit
A1	3.4	3.8	V
A2	3.8	4.2	
A3	4.2	4.6	
A4	4.6	5.0	
A5	5.0	5.4	

Radiant Power Classifications (I_F = 4000mA):

Code	Min.	Max.	Unit
P20	2000	2500	mW
P25	2500	3000	
P30	3000	3500	
P35	3500	4000	

Wavelength Classifications (I_F = 4000mA):

Code	Min.	Max.	Unit
UV365	365	370	nm

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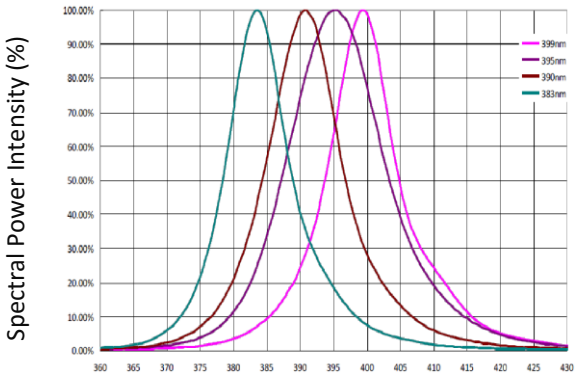
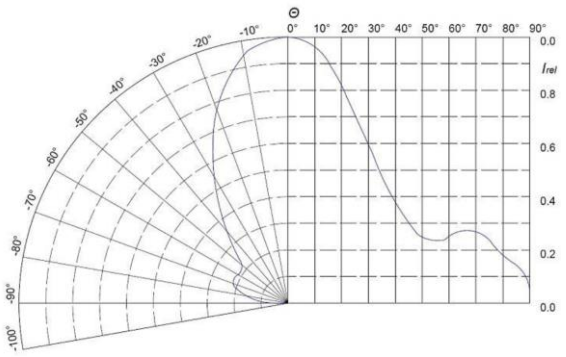
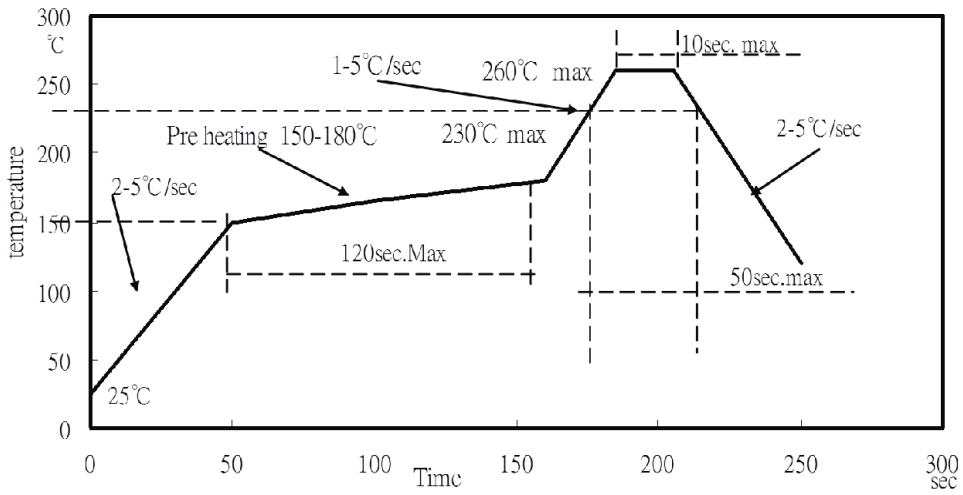
ELECTRO-OPTICAL CHARACTERISTICS:

Relative Spectral Power Distribution	Directive Radiation
	

RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



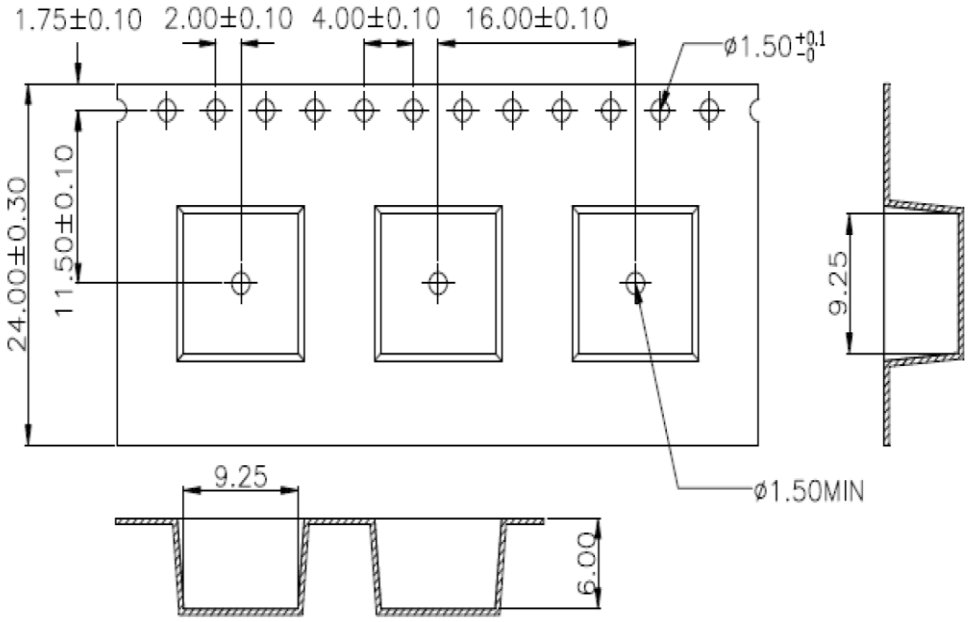
Note:

1. Maximum reflow soldering: 3 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.

PACKING SPECIFICATION:

Reel Dimension:

Minimum 10pcs/reel



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 descanting agent and apply baking at 60°C±5°C for 15hrs before use.

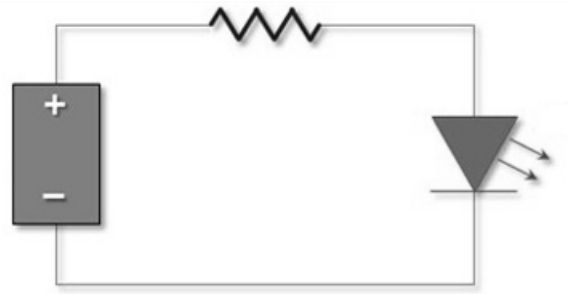
Baking:

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:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) 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	03/11/2016	Datasheet set-up.