BRIGHTEK
BRIGHTEK (EUROPE) LIMITED
Brighten Up The World With LED !

PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

► PTH Lamp

► 3mm Round

► Green (570nm)

N0G16L45 (Bulk)
N0G13L45T (Taping)

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APPLICATIONS:

- Indicator
- Signal
- 3C Application
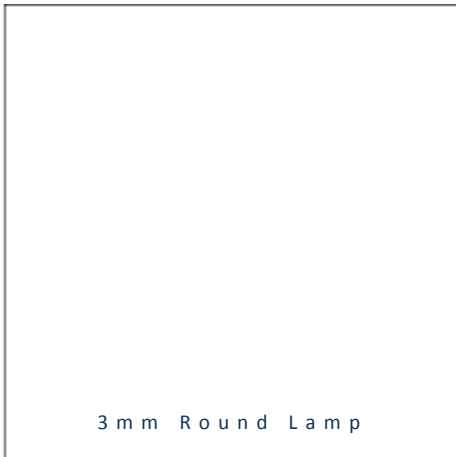
3mm Round Lamp

RoHS Compliant

FEATURES:

- **Package:** PTH Lamp 3mm Round
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 2.2V
- **Luminous Intensity (typ.):** 85mcd @20mA
- **Colour:** Green
- **Wavelength:** 570nm
- **Viewing angle:** 40°
- **Materials:**
  – Die: GaP
  – Resin: Epoxy (Green Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  – Forward voltage
  – Luminous intensity
  – Wavelength
- **Soldering methods:** Hand; Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 1000pcs/Bulk; 2000pcs/Taping

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	25	mA
Peak Forward Current Duty 1/10@1KHz	I_{FP}	100	mA
Reverse Current @5V	I_R	10	μA
Power Dissipation	PD	85	mW
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.9	2.2	2.6	V	I_F=20mA
Luminous Intensity	I_V	60	85	120	mcd	I_F=20mA
Dominant Wavelength	λ_D	---	570	---	nm	I_F=20mA
Peak Wavelength	λ_P	---	568	---	nm	I_F=20mA
Spectral Line Half Bandwidth	$\Delta \lambda$	---	30	---	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	40	---	deg	I_F=20mA

1. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%
2. IS standard testing

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OUTLINE DIMENSION:

Package Dimension:
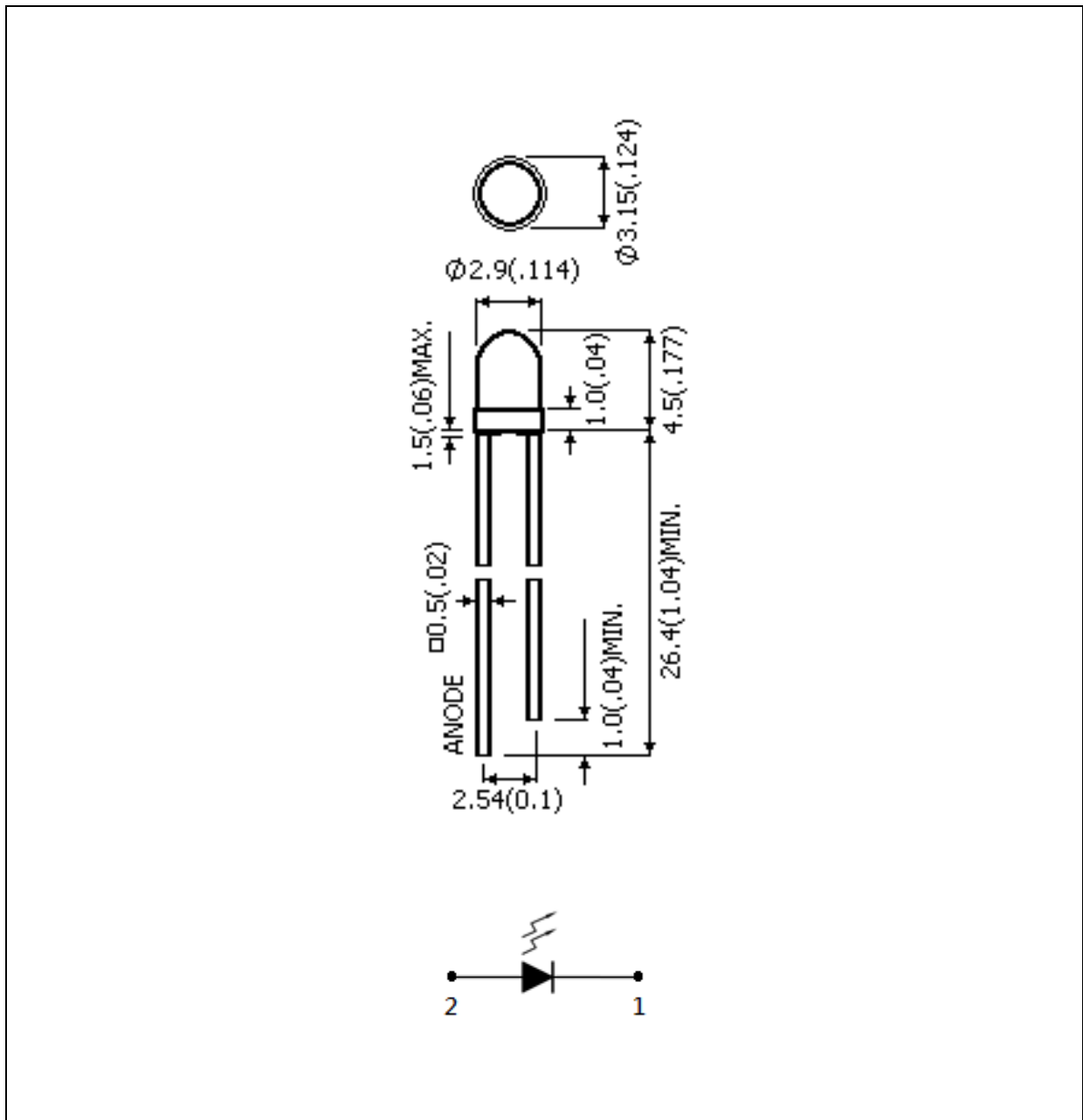
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

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BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
4	1.9	2.6	V

Luminous Intensity Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
27	60	120	mcd

Wavelength Classifications (I_F = 20mA):
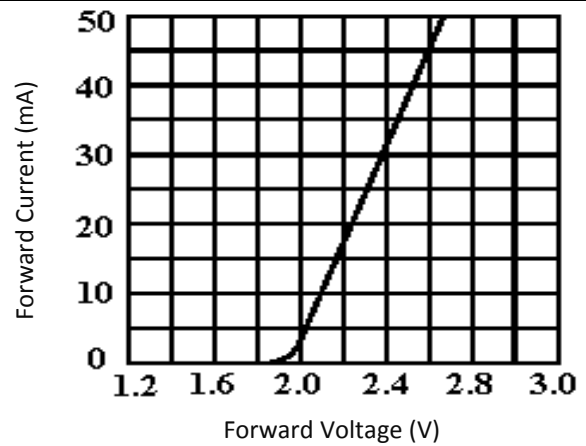
Code	Min.	Max.	Unit
G56	560	570	nm
G57	570	580	

ELECTRO-OPTICAL CHARACTERISTICS (RED):

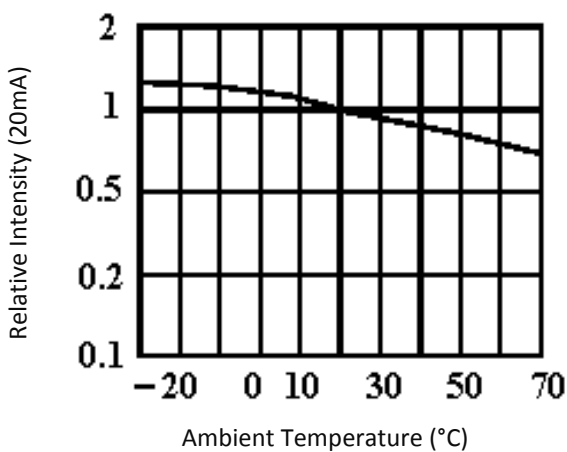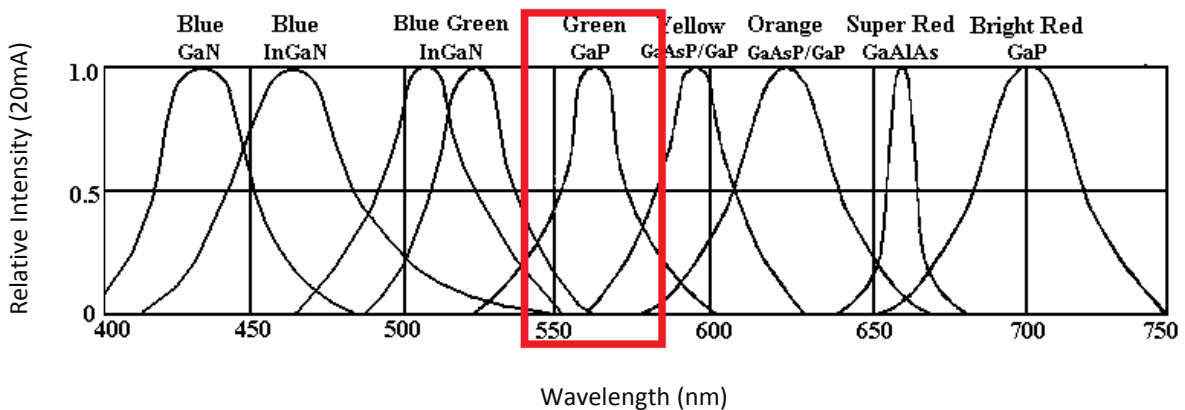| Relative Intensity v.s. Forward Current	Forward Current v.s. Forward Voltage
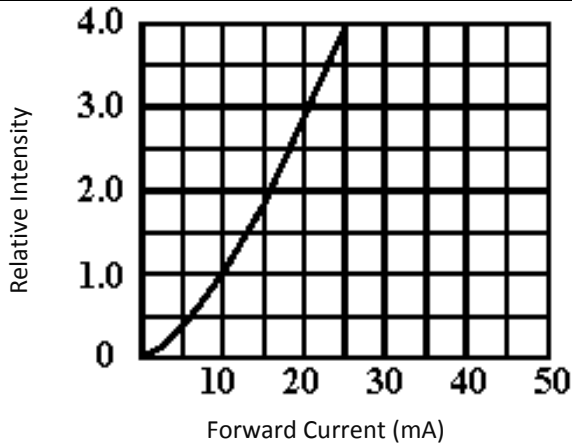
Relative Intensity / Forward Current (mA)

Forward Current (mA) / Forward Voltage (V)

Relative Intensity v.s. Temperature	Forward Current v.s. Temperature

Relative Intensity (20mA) / Ambient Temperature (°C)

Forward Current / Ambient Temperature (°C)
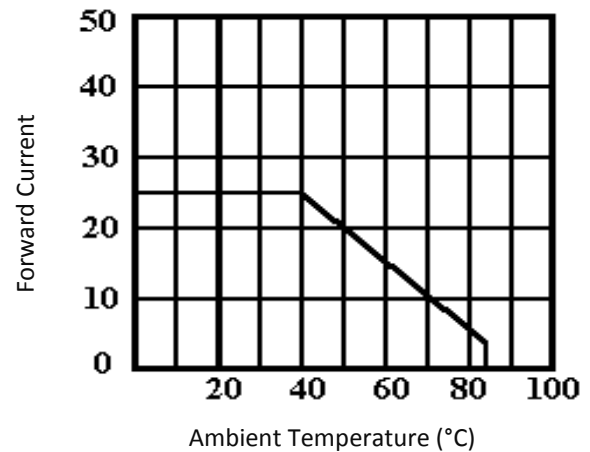
Relative Intensity v.s. Wavelength

Relative Intensity (20mA) / Wavelength (nm)

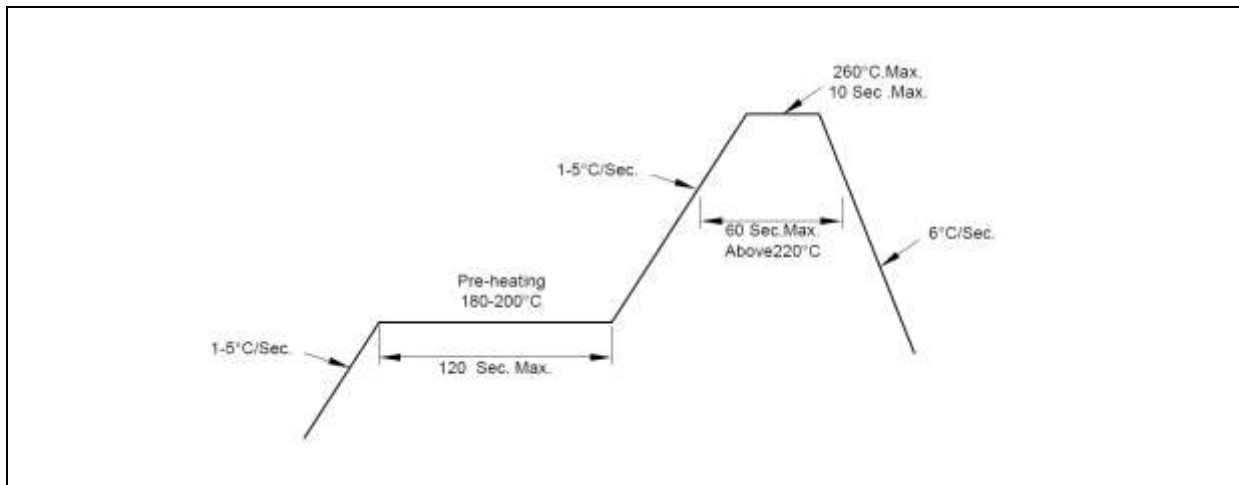Blue GaN · Blue InGaN · Blue Green InGaN · Green GaP · Yellow GaAsP/GaP · Orange GaAsP/GaP · Super Red GaAlAs · Bright Red GaP

RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):
- Temperature at tip of iron: 300°C Max. (25W Max.).
- Soldering Time: 3 seconds ± 1 sec.
- Maximum reflow soldering: 1 time.
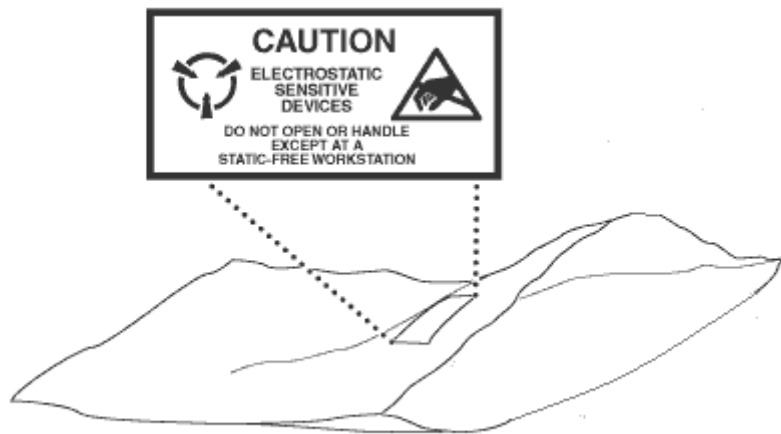
Lead-free Solder:

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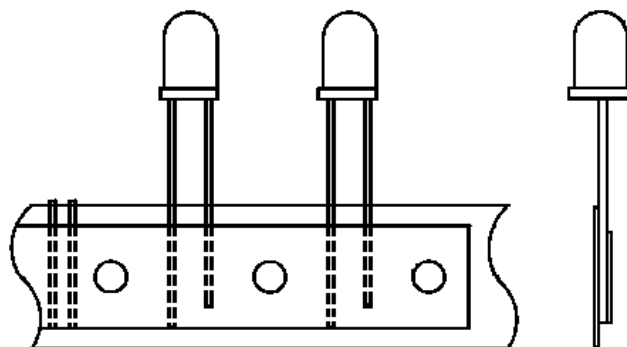
PACKING SPECIFICATION:

Reel Dimension:

1000pcs/Bulk

2000pcs/Taping

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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 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:
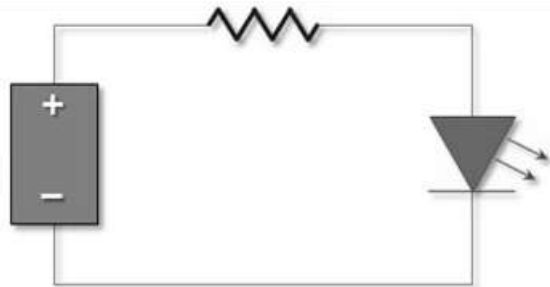
Must apply resistor(s) for protection (over current proof).

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.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	30/01/2015	Datasheet set-up.

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