BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

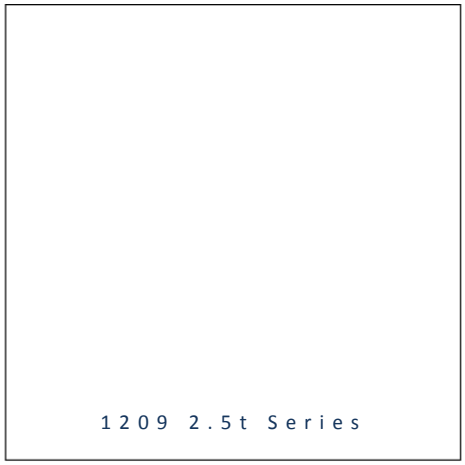
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PCB / CHIP LED
- ▶ 1209 (3224) 2.5t Series
- ▶ Red (620nm) / Green (525nm)

Release Date: 22 March 2016 Version: A1.0

N0D28S62



1209 2.5t Series

RoHS Compliant

FEATURES (Red/Green):

- **Package:** PCB / CHIP Top View Bi-Colour LED
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 2.0/3.2V
- **Luminous Intensity (typ.):** 2900/6600mcd@20mA
- **Colour:** Red/Green
- **Wavelength:** 620/525nm
- **Viewing angle:** 60/60°
- **Materials:**
  - Die: AlGaInP/InGaN
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+85°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing: :** 8mm tape with 1500/reel, ø180mm (7'')

APPLICATIONS:

- Indicator
- Dashboard
- 3C Application
- Backlighting
- Decoration Lighting

* In the order of Red/Green.

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30/30*	mA
Peak Forward Current Duty 1/8@1KHz	I_{FP}	125/125	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10/10	μA
Power Dissipation	P_D	75/111	mW
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

1. * In the order of Red/Green.

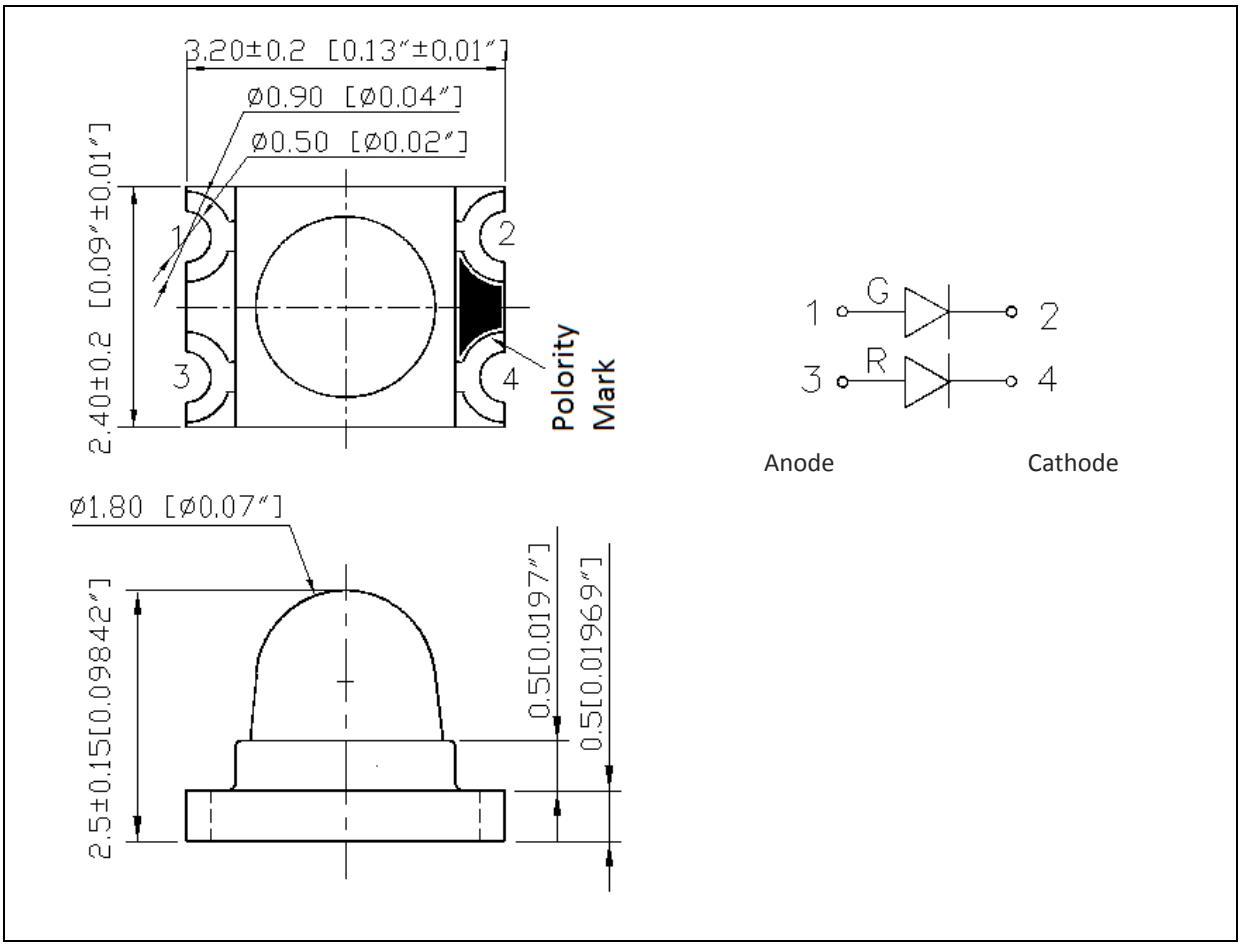
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.7/2.8*	2.0/3.2	2.5/3.7	V	I_F=20mA
Luminous Intensity	I_V	1250/2500	2900/6600	5200/11200	mcd	I_F=20mA
Dominant Wavelength	λ_D	615/520	620/525	630/530	nm	I_F=20mA
Peak Wavelength	λ_P	---	630/520	---	nm	I_F=20mA
Spectral Line Half Bandwidth	$\Delta\lambda$	---	19/33	---	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	60/60	---	deg	I_F=20mA

1. * In the order of Red/Green.
2. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V

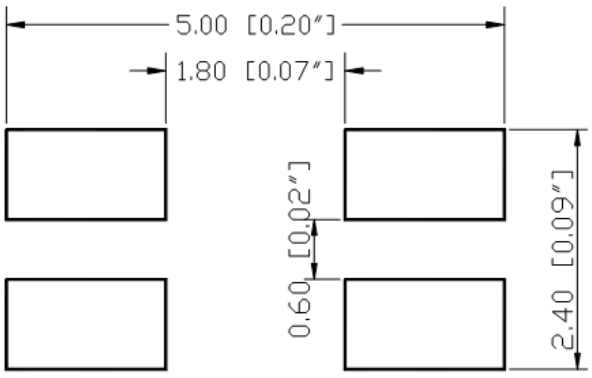
OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ±0.1mm with angle tolerance ±0.5°.

BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code		Min.	Max.	Unit
Red	RB	1.7	2.5	V
Green	GB	2.8	3.7	V

Luminous Intensity Classifications (I_F = 20mA):

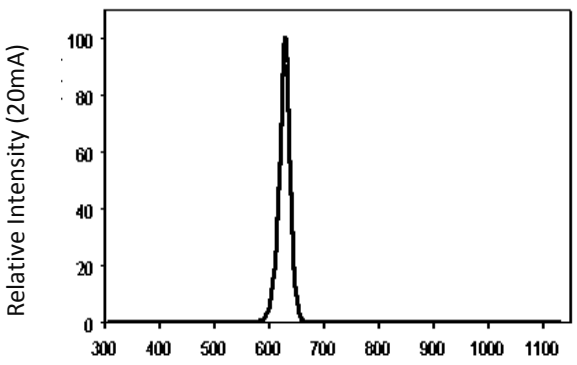
Code		Min.	Max.	Unit
Red	RF	1250	5200	mcd
Green	GF	2500	11200	

Wavelength Classifications (I_F = 20mA):

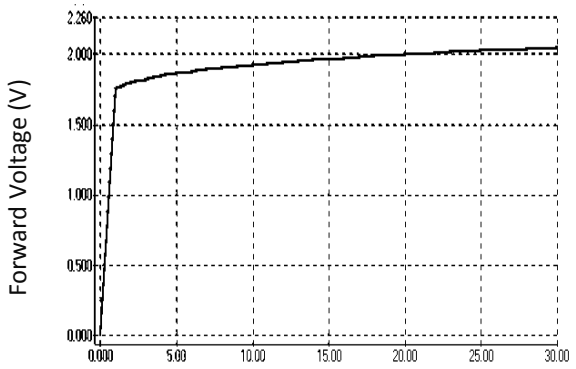
Code		Min.	Max.	Unit
Red	RP	615	630	nm
Green	GP	520	530	

ELECTRO-OPTICAL CHARACTERISTICS (GREEN):

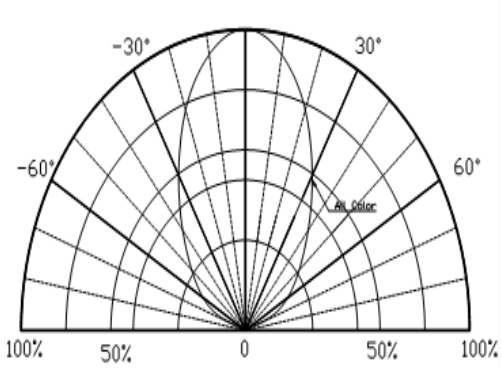
Relative Spectral Distribution



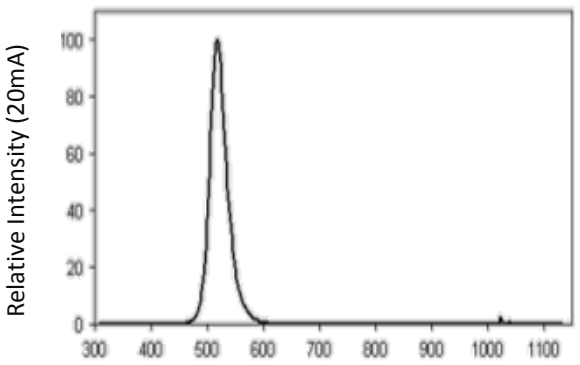
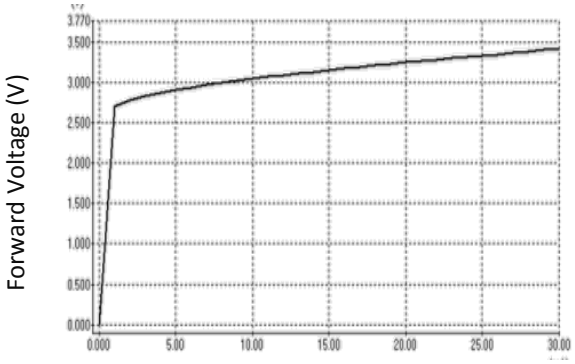
Forward Current v.s. Forward Voltage

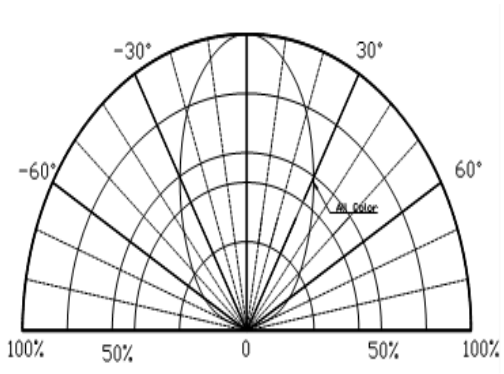


Directive Radiation



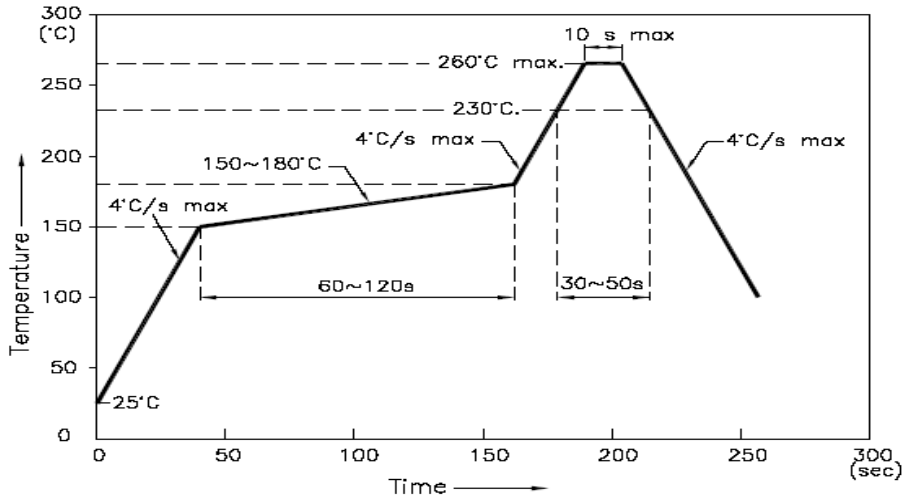
ELECTRO-OPTICAL CHARACTERISTICS (BLUE):

Relative Spectral Distribution	Forward Current v.s. Forward Voltage
	

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Reflow Solder:



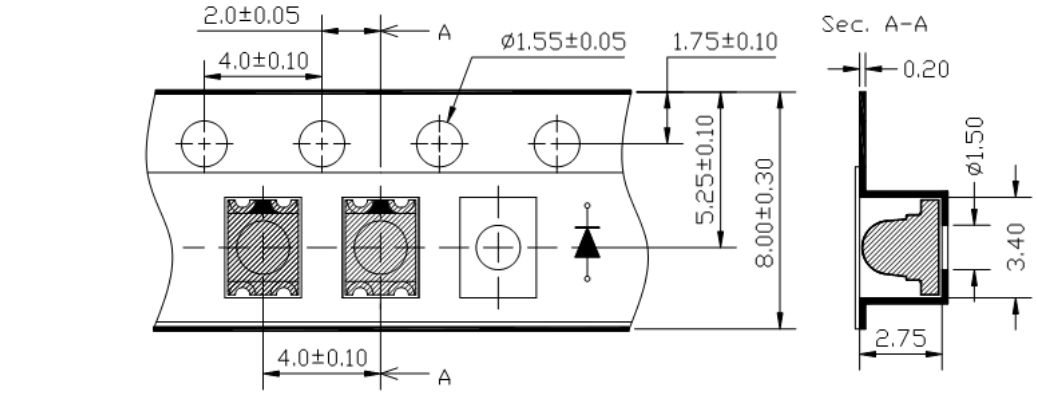
Note:

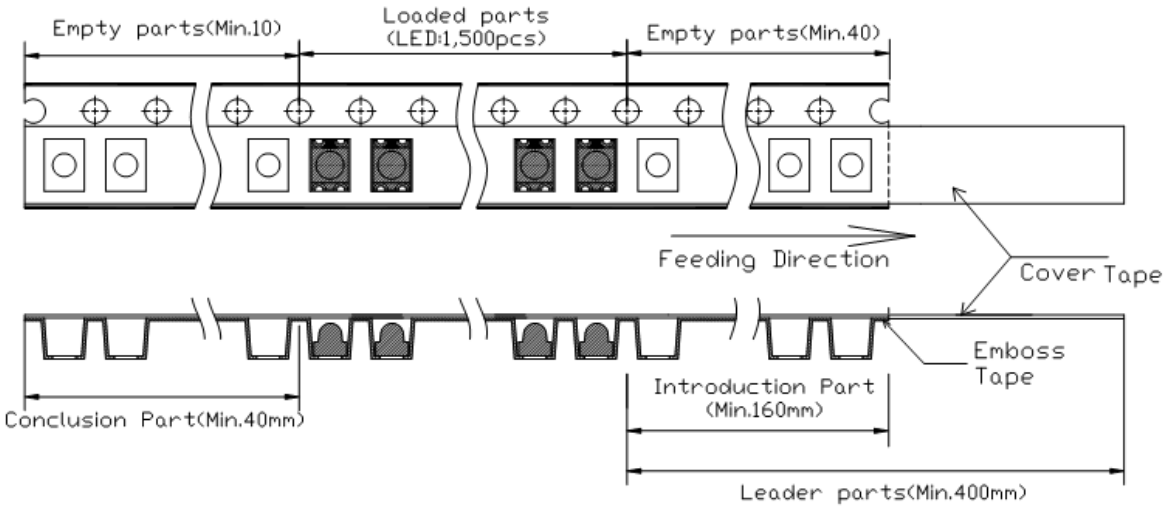
1. Recommend reflow temperature 245°C. Maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 2 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

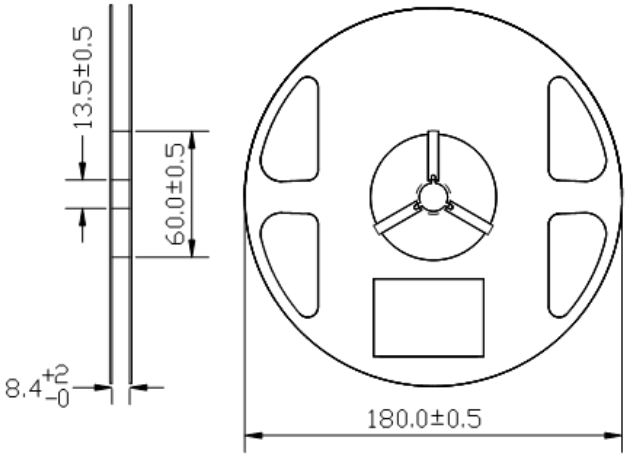
PACKING SPECIFICATION:

Reel Dimension:

3000pcs/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.

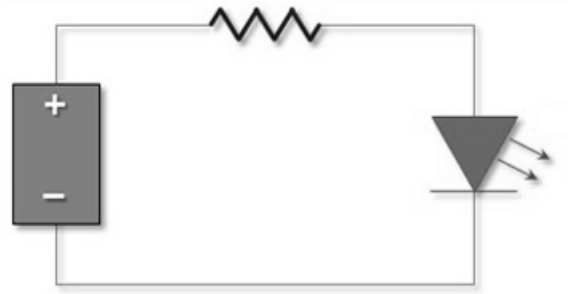
Baking:

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 Blue) 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	22/03/2016	Datasheet set-up.