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
- ▶ 0603 (1608) 0.6t
- ▶ Green 562nm

Release Date: 26 May 2022 Version: A1.1

N0G05S25

0603 0.6t Series

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RoHS Compliant

FEATURES:

- **Package:** PCB / CHIP LED Top View
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 2.0V
- **Luminous Intensity (typ.):** 15mcd@20mA
- **Colour:** Green
- **Wavelength (typ.):** 562nm
- **Viewing angle:** 140°
- **Materials:**
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 2a
- **Packing:** 8mm tape with max.4000/reel, ø180mm (7’’)

APPLICATIONS:

- Backlighting
- Indication Light
- Switch light
- Dashboard

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30	mA
Peak Forward Current Duty 1/10; width 0.1ms	I_{FP}	100	mA
Power Dissipation	P_D	80	mW
Reverse Voltage	V_R	8	V
Reverse Current @8V	I_R	10	µA
Junction Temperature	T_j	110	°C
Electrostatic Discharge (HBM)	ESD	2000	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C

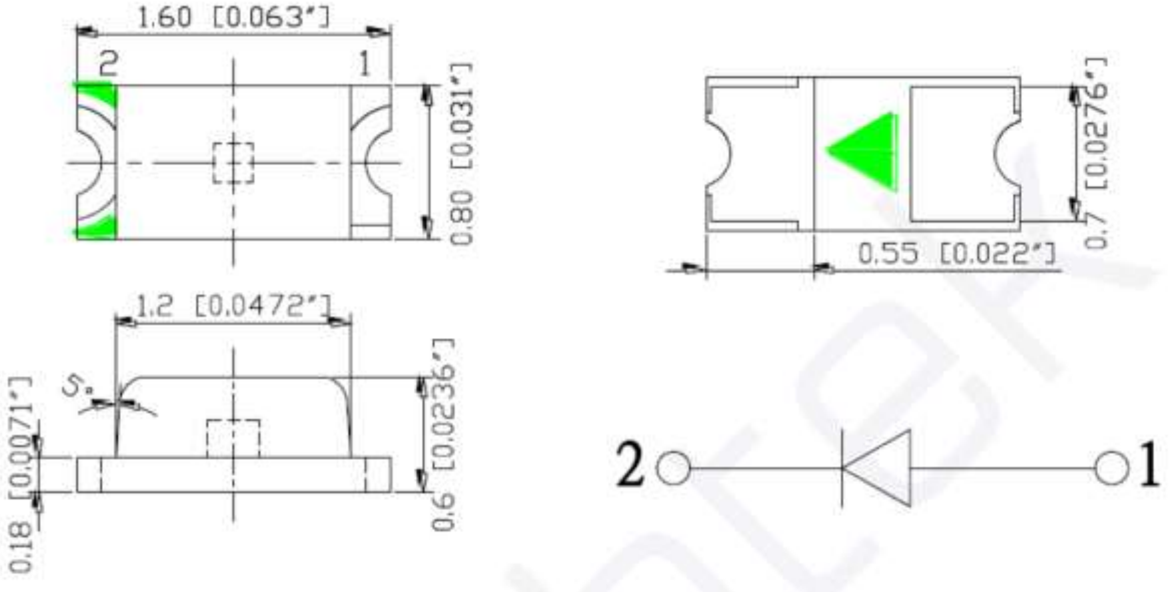
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.6	---	2.5	V	I_F=20mA
Luminous Intensity	I_V	5	15	---	mcd	I_F=20mA
Dominant Wavelength	λ_D	556	---	568	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	140	---	deg	I_F=20mA

1. Luminous intensity (I_V) ±10%, Forward Voltage (V_F) ±0.1V.

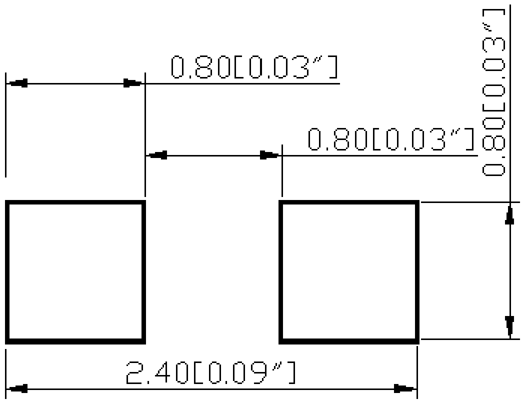
OUTLINE DIMENSION:

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
b	1.6	1.9	V
c	1.9	2.2	
d	2.2	2.5	

Luminous Intensity Classifications (I_F = 20mA):

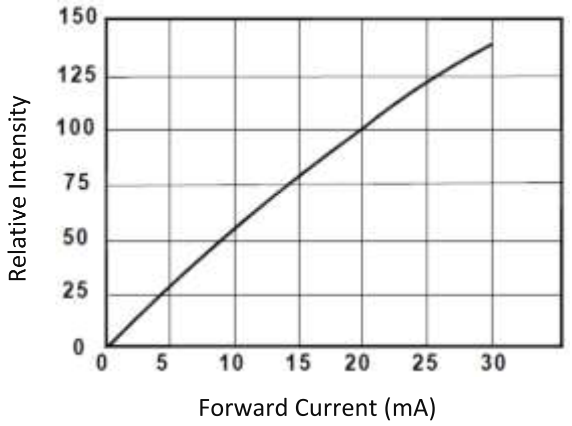
Code	Min.	Max.	Unit
8	5	8	mcd
9	8	12.5	
A	12.5	16	
B	16	20	
C	20	25	

Dominant Wavelength Classifications (I_F = 20mA):

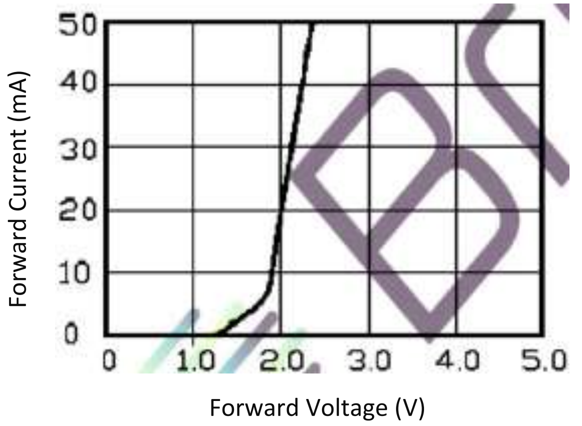
Code	Min.	Max.	Unit
e	556	559	nm
f	559	562	
g	562	565	
h	565	568	

ELECTRO-OPTICAL CHARACTERISTICS:

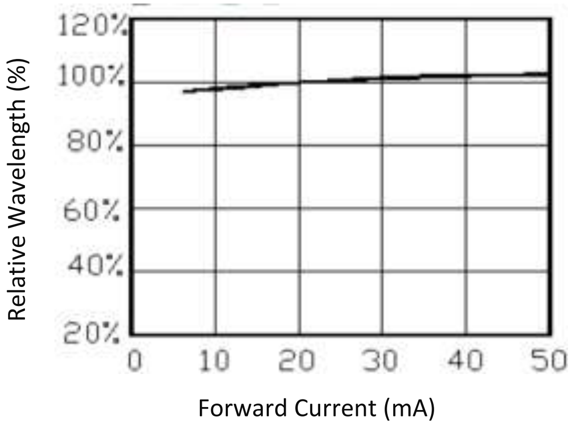
Relative Intensity v.s. Forward Current



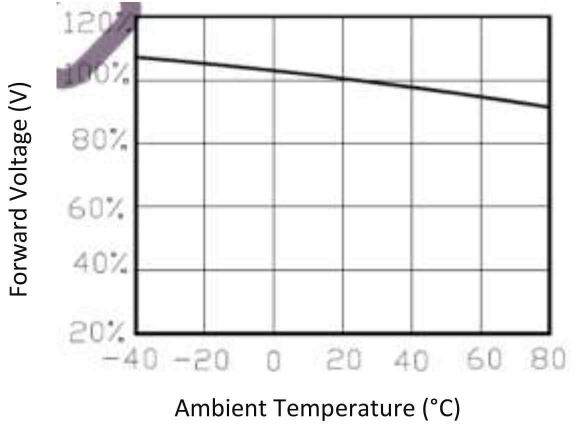
Forward Current v.s. Forward Voltage



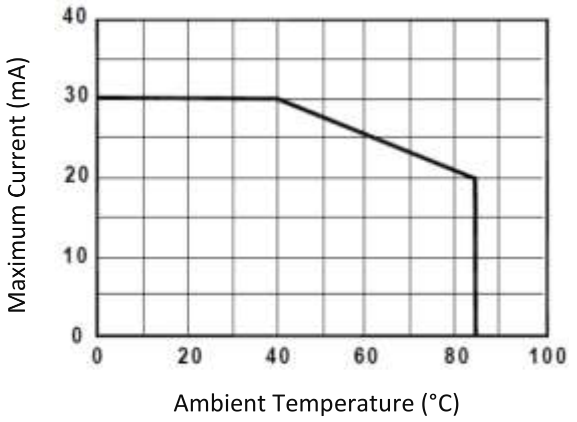
Forward Current v.s. Wavelength



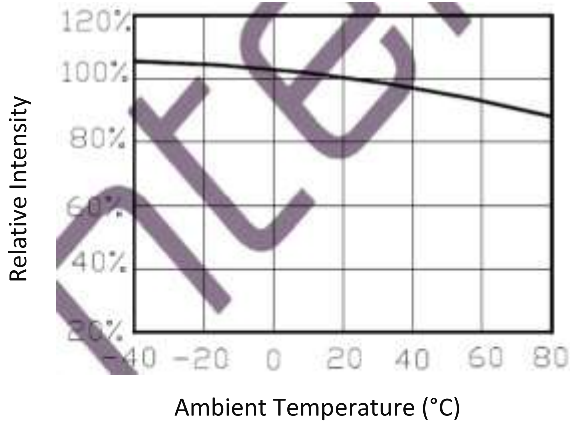
Forward Voltage v.s. Temperature

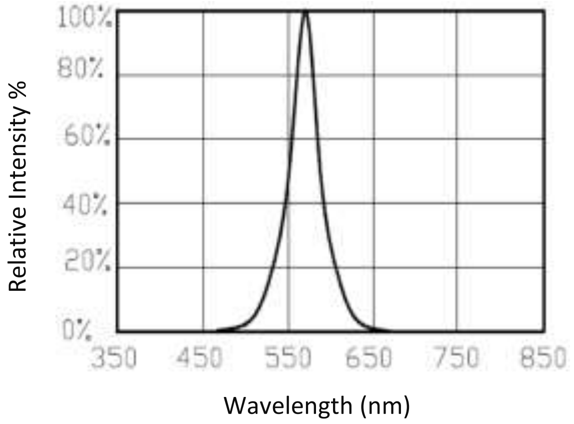
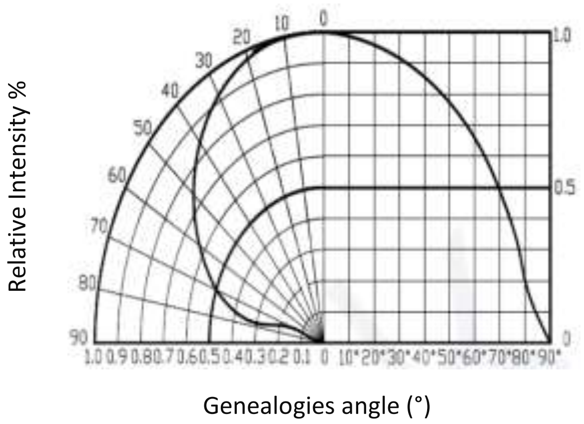


Temperature Derating Chart



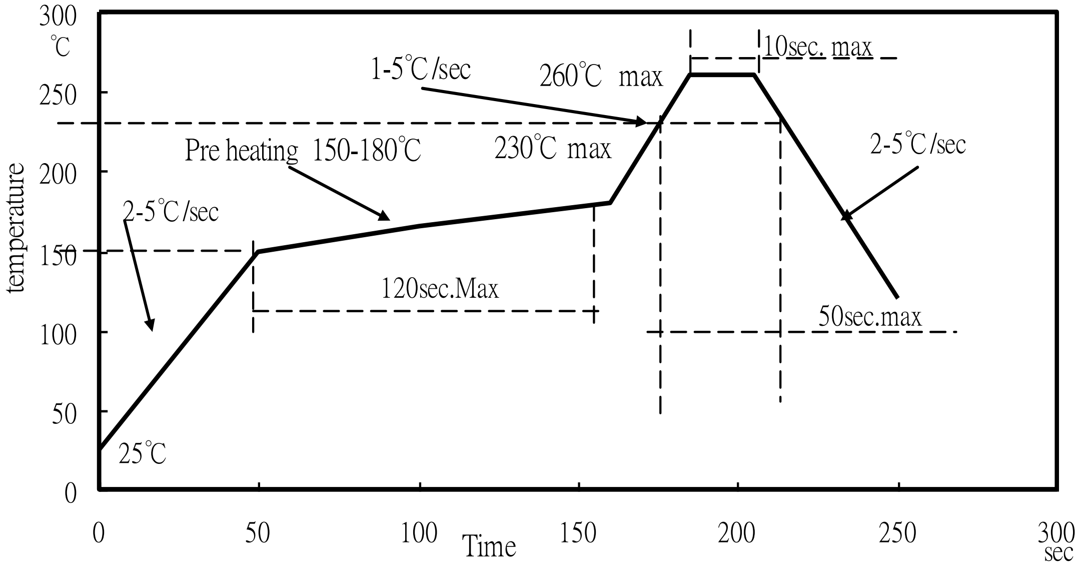
Relative Intensity Flux v.s. Junction Temperature



Relative Intensity v.s. Wavelength	Relative Intensity v.s. Angular Displacement
	

RECOMMENDED SOLDERING PROFILE:

Reflow solder:



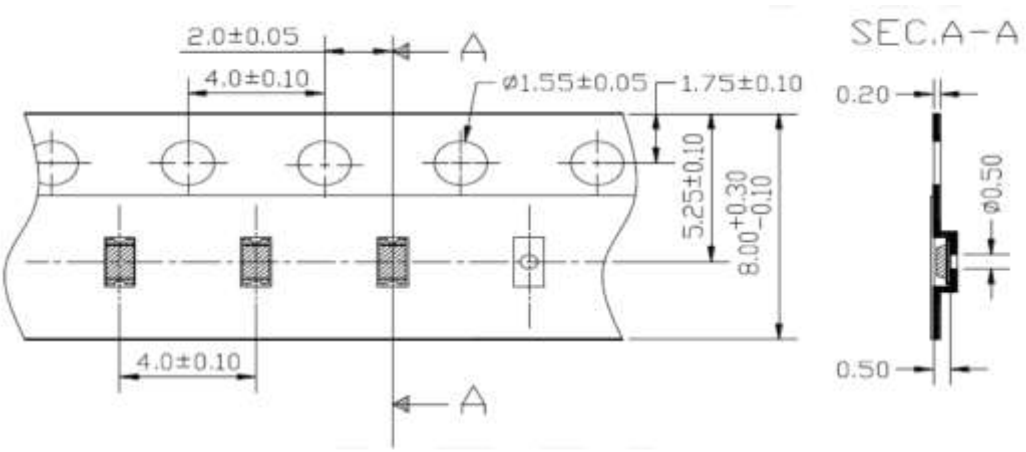
Note:

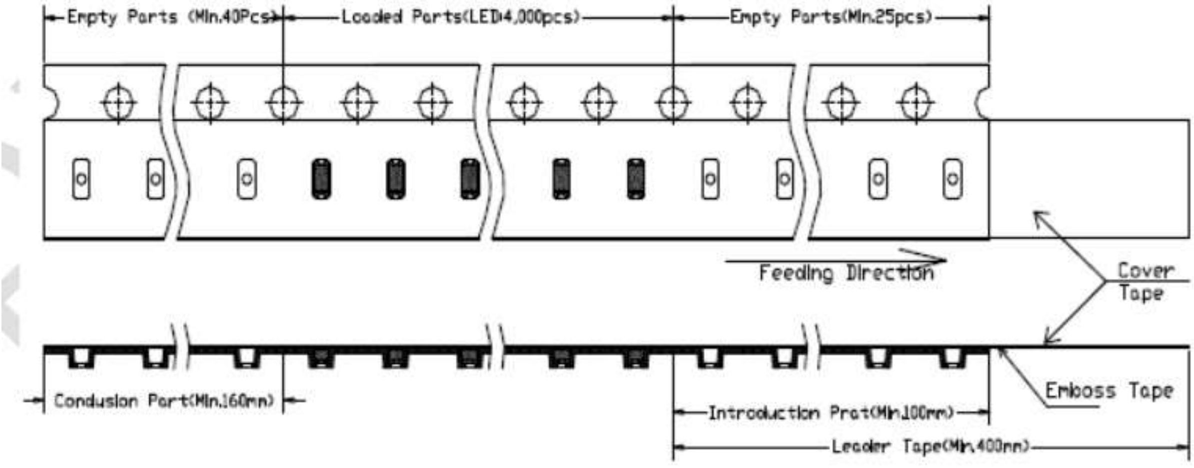
1. Recommend reflow temperature 240°C. The maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 3 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

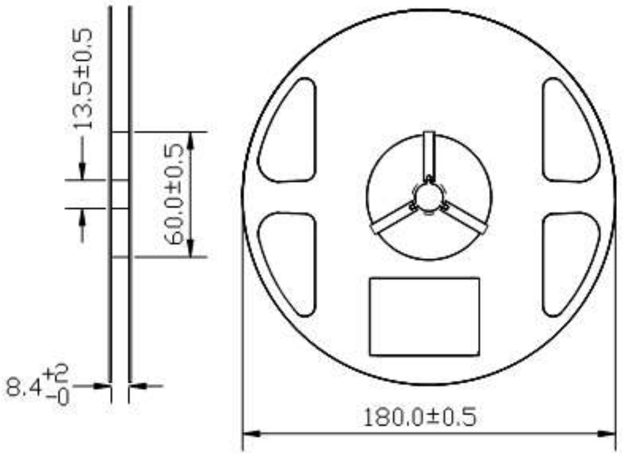
PACKING SPECIFICATION:

Reel Dimension:

Max.4000pcs/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 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.

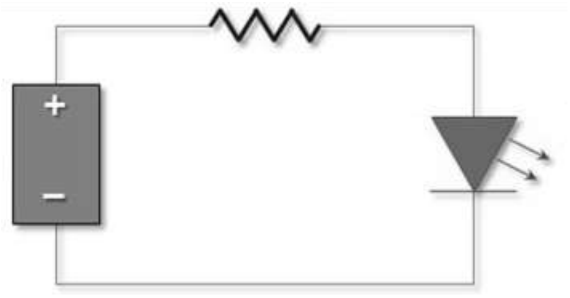
Baking:

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	19/06/2017	Datasheet set-up.
A1.1	25/05/2022	New datasheet format.