BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

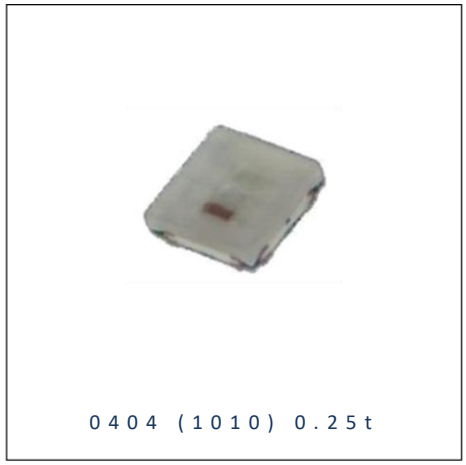
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PCB / CHIP LED
- ▶ 0404 (1010) 0.25t
- ▶ Red (622nm) / Green (525nm) / Blue (466nm)

Release Date: 02 April 2025 Version: A1.1

N0M69S00-5MA



0404 (1010) 0.25t

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RoHS Compliant

FEATURES (Red/Green/Blue):

- **Package:** PCB / CHIP LED Top View SMT Package
- **Forward Current:** 5/5/5mA*
- **Forward Voltage (typ.):** 1.9/2.5/2.5V
- **Luminous Intensity (typ.):** 165/440/85mcd@5mA
- **Colour:** Red/Green/Blue
- **Dominant Wavelength (typ.):** 622/525/466nm
- **Viewing Angle:** 120°
- **Materials:**
  - Resin: Epoxy (Water Diffused)
- **Operating Temperature:** -30~+80°C
- **Storage Temperature:** -40~+85°C
- **Grouping Parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering Methods:** Reflow soldering
- **MSL Level:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with max.4000/reel, ø178mm (7'')

* In the order of Red/Green/Blue.

APPLICATIONS:

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

CHARACTERISTICS:

Absolute Maximum Characteristics (T_a=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	5/5/5	mA
Peak Forward Current Duty Cycle 1/10, 1KHz	I_{FP}	20	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Power Dissipation	P_D	46	mW
Operating Temperature	T_{OPR}	-30~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

1. * In the order of Red/Green/Blue.

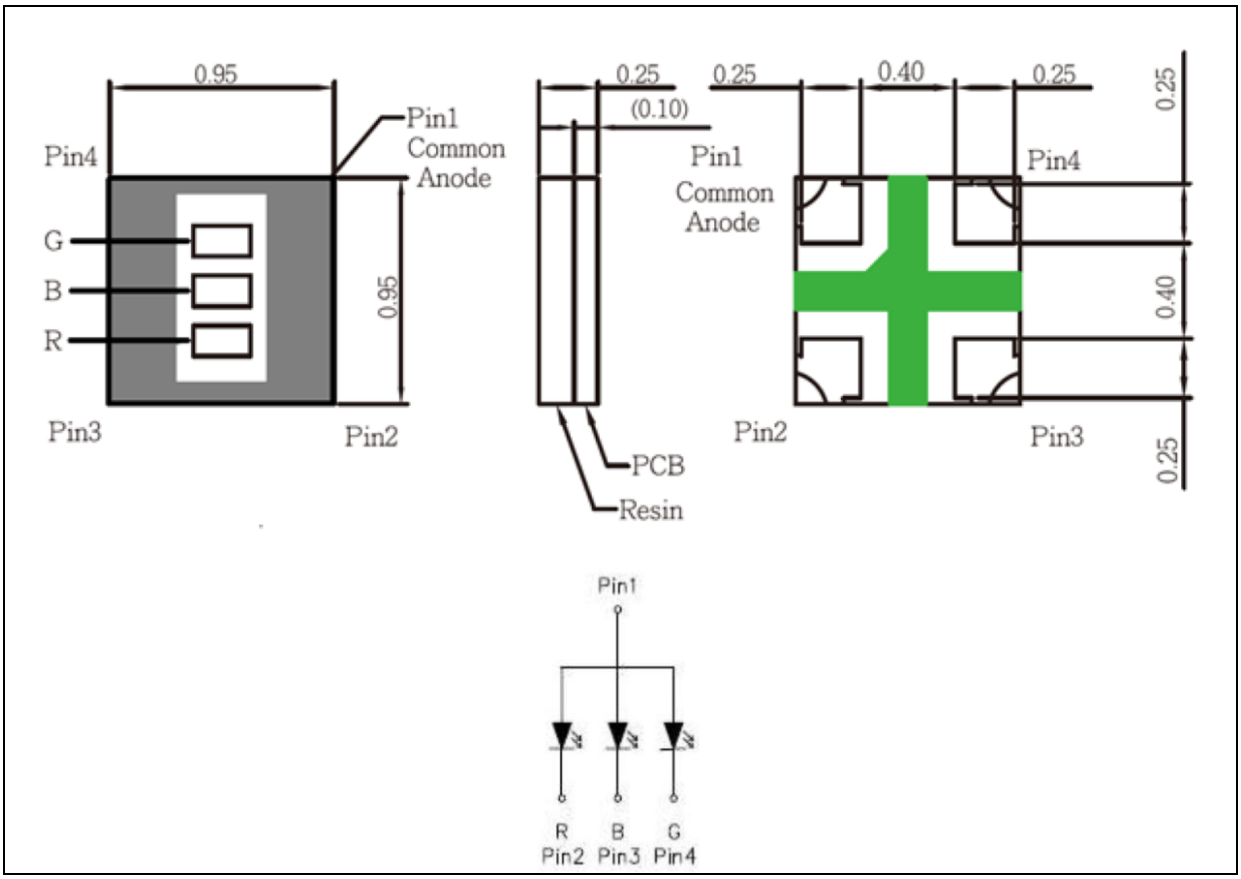
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.5/2.0/2.2*	1.9/2.5/2.5	2.7/3.3/3.5	V	I_F=5mA
Luminous Intensity	I_V	---	165/440/85	---	mcd	I_F=5mA
Dominant Wavelength	λ_D	---	622/525/466	---	nm	I_F=5mA
Spectral Line Half Bandwidth	$\Delta\lambda$	---	13/25/16	---	nm	I_F=5mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=5mA

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

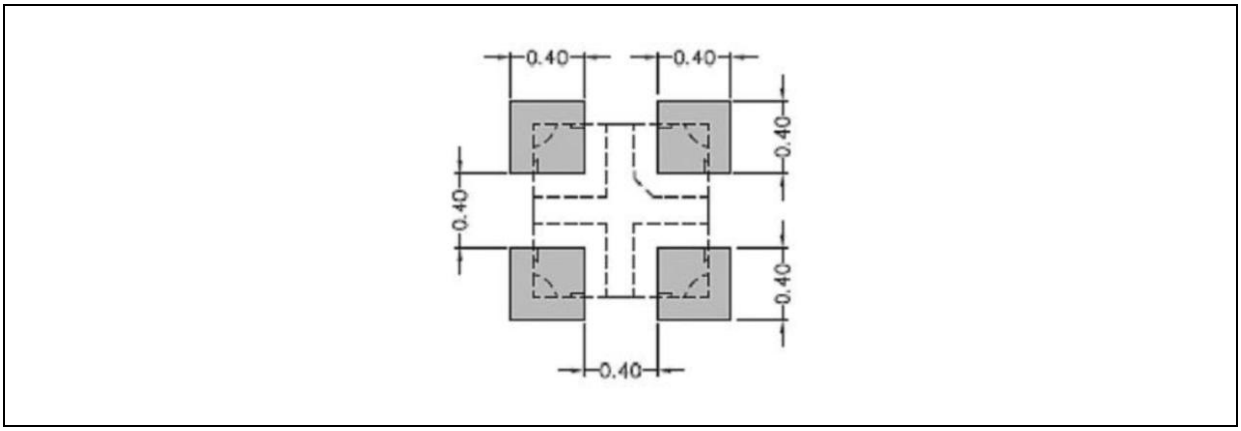
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.1mm, 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 = 5mA):

Code		Min.	Max.	Unit
Red	☐	1.5	2.7	V
Green	☐	2.0	3.3	V
Blue	☐	2.2	3.5	V

Luminous Intensity Classifications (I_F = 5mA):

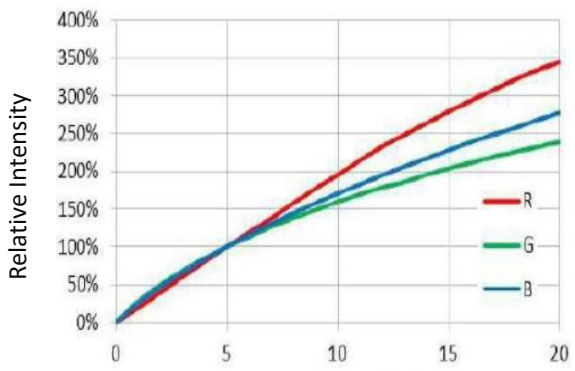
Code		Min.	Max.	Unit
Red	R	112	180	mcd
	S	180	285	
	T	285	360	
Green	T	285	360	mcd
	U	360	350	
	V	450	560	
	W	560	715	
Blue	Q	71	112	mcd
	R	112	180	
	S	180	285	

Dominant Wavelength Classifications (I_F = 5mA):

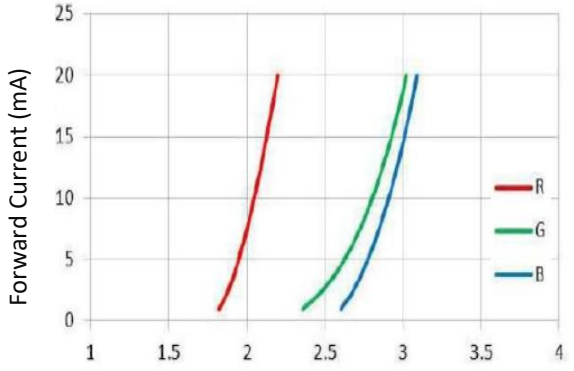
Code		Min.	Max.	Unit
Red	2	618	623	nm
	3	623	628	
	4	628	633	
Green	0	524	528	nm
	2	528	532	
	4	532	536	
Blue	1	464	468	nm
	3	468	472	

ELECTRO-OPTICAL CHARACTERISTICS:

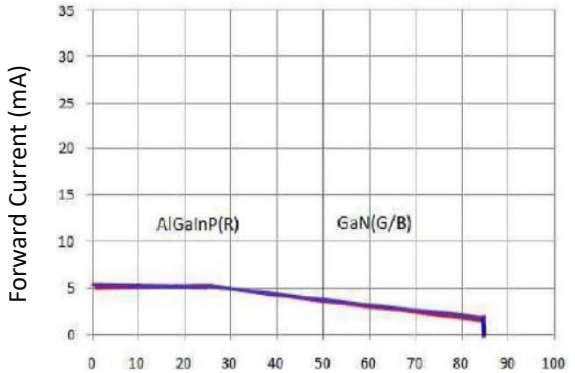
Relative Intensity v.s. Forward Current



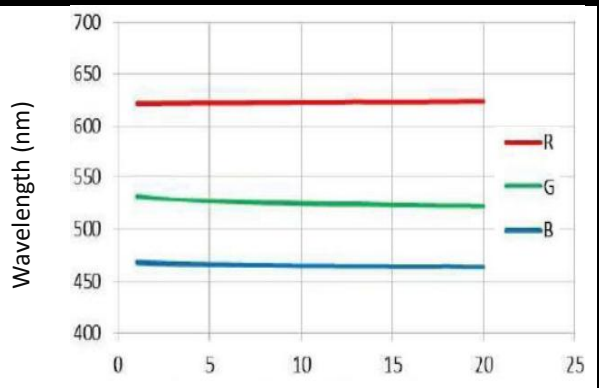
Forward Voltage v.s. Forward Current



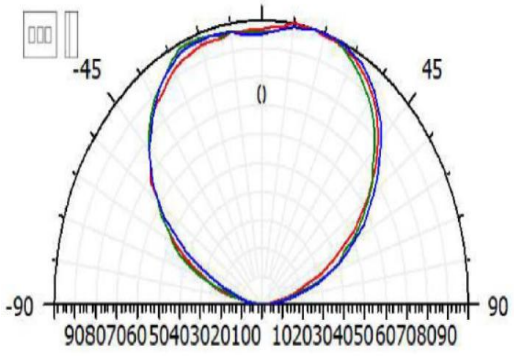
Forward Current v.s. Ambient Temperature



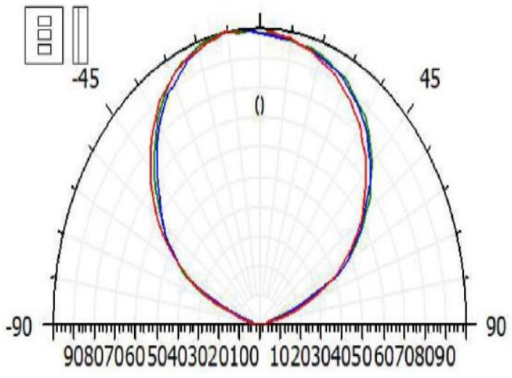
Wavelength Shift v.s. Forward Current



Directive Radiation

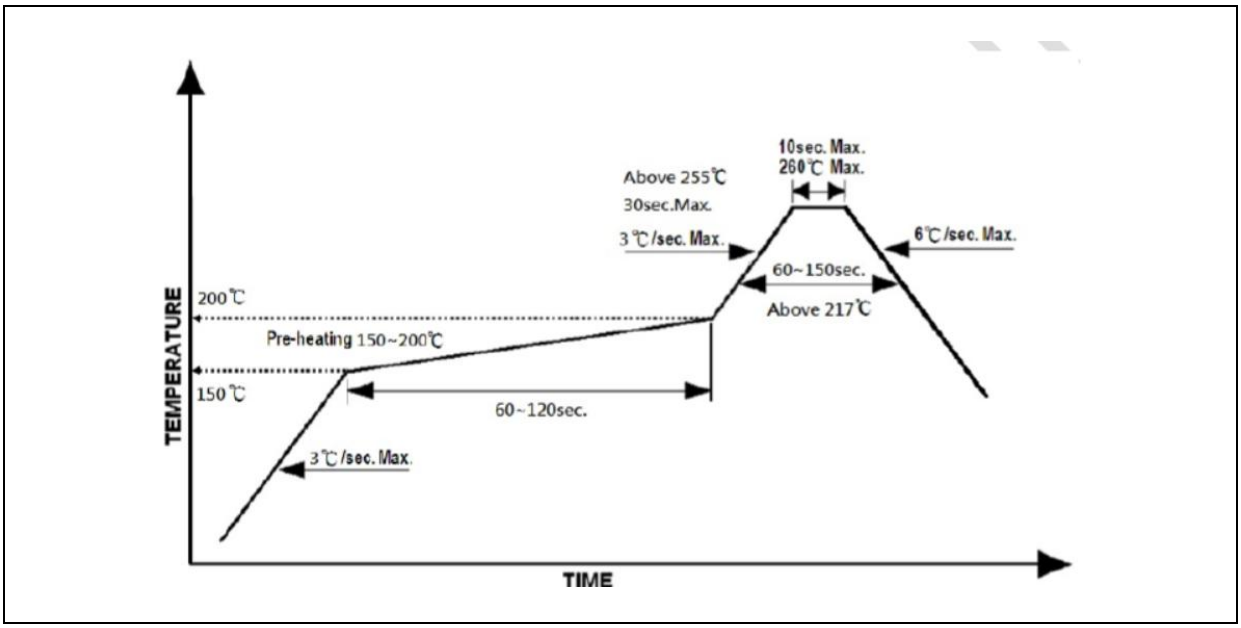


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Reflow Solder:



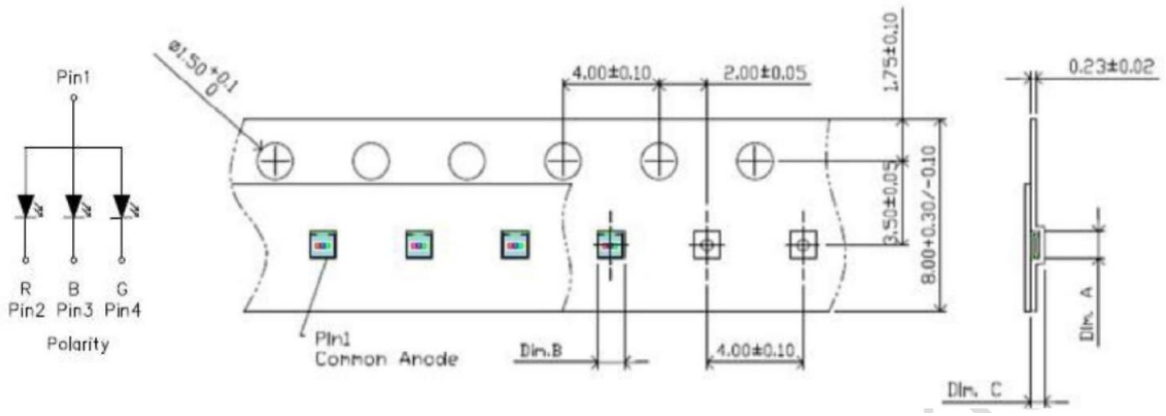
Note:

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

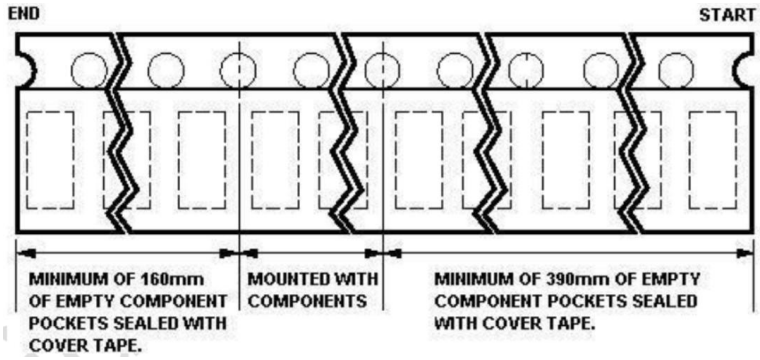
PACKING SPECIFICATION:

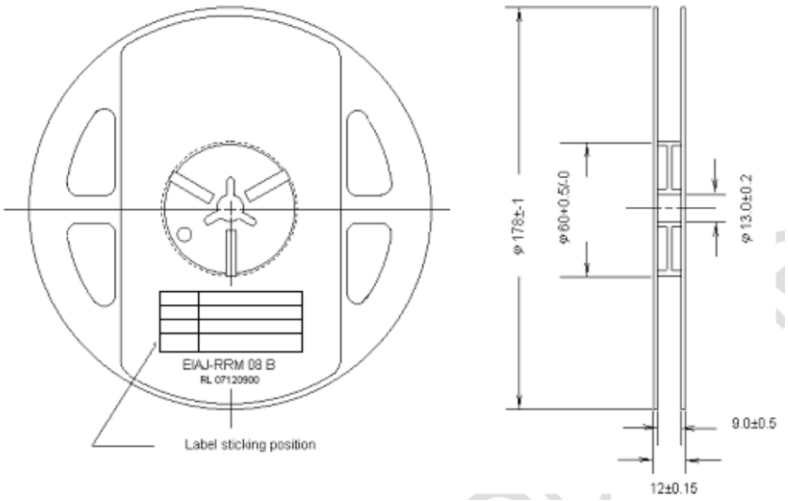
Reel Dimension:

Max.4000pcs/reel



Dim. A	Dim. B	Dim. C	Q'ty/Reel
1.11±0.05	1.11±0.05	0.35±0.05	4k





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 and to be stored at <10% R.H. and apply baking.

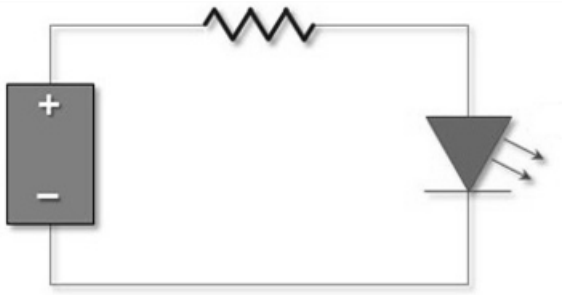
Baking:

It is required to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±5°C x 12~24hrs and <5%RH, taped / reel 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	22/04/2024	Datasheet set-up.
A1.1	02/04/2025	New datasheet format.