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

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- ▶ PLCC4 SMD
- ▶ 3528+Lens 3.7t Series
- ▶ Red (615~630nm)

Release Date: 08 December 2022 Version: A1.0

N0R63S51-50MA

3528 1.9t Series

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RoHS Compliant

FEATURES:

- **Package:** PLCC4 Top View White SMT Package
- **Forward Current:** 50mA
- **Forward Voltage (typ.):** 2.2V
- **Luminous Intensity (typ.):** 12000mcd (12.5lm)@50mA
- **Colour:** Red
- **Wavelength:** 615~630nm
- **Viewing angle:** 25°
- **Materials:**
  - Package: Heat Resistant Polymer
  - Resin: Silicon (Water Clear)
  - L/T Finish: Ni/Ag plated Copper Alloy
- **Operating Temperature:** -40~+100°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant Wavelength
- **Soldering methods:** IR Reflow
- **MSL:** acc. to JEDEC Level 3 (J-STD20D)
- **Packing:** 12mm tape with max.700/reel, ø178mm (7'')

APPLICATIONS:

- Decorative Lighting
- Indicator
- Backlighting
- Dashboard
- Display
- Information Board
- Light Strip

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	50	mA
Pulse Forward Current Duty 1/10, width 0.1mS	I_{PF}	100	mA
Power Dissipation	P_D	180	mW
Reverse Voltage	V_R	5	V
Reverse Current @10V	I_R	10	μA
Junction Temperature	Tj	125	°C
Operating Temperature	T_{OPR}	-40~+100	°C
Storage Temperature	T_{STG}	-40~+100	°C
Soldering Temperature	T_{SD}	260	°C
Forward Voltage at Low Current @1μA	V_{F2}	0.9	V

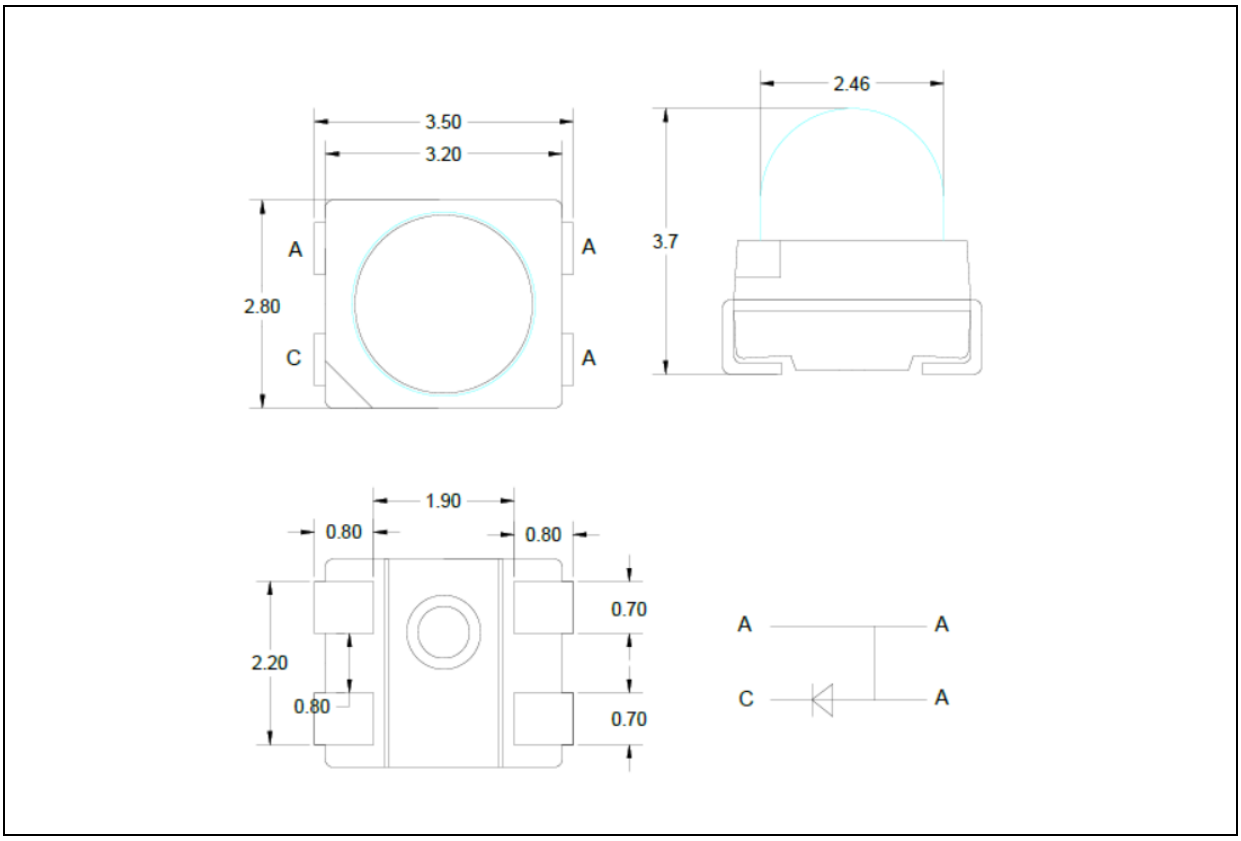
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.9	---	2.5	V	I_F=50mA
Luminous Intensity	I_V	8000	12000	---	mcd	I_F=50mA
Luminous Flux	Φ_v	8.15	12.5	---	lm	I_F=50mA
Dominant Wavelength	λ_D	615	---	630	nm	I_F=50mA
Viewing Angle	$2\theta_{1/2}$	---	25	---	deg	I_F=50mA

1. Luminous intensity (I_V) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%, Wavelength ±1.5nm

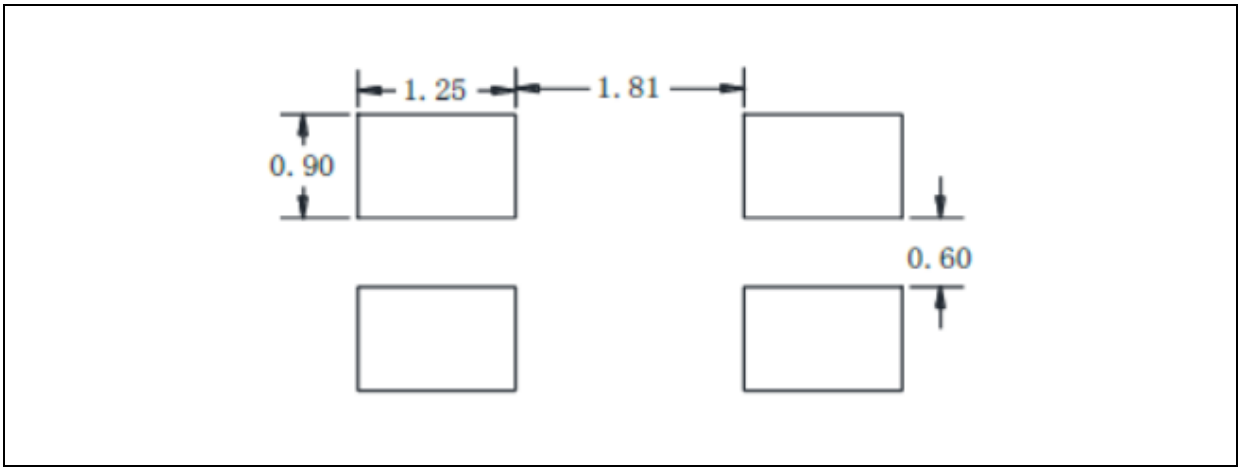
OUTLINE DIMENSION:

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 = 50mA):

Code	Min.	Max.	Unit
3A-n	1.9	2.5	V

Luminous Intensity Classifications (I_F = 50mA):

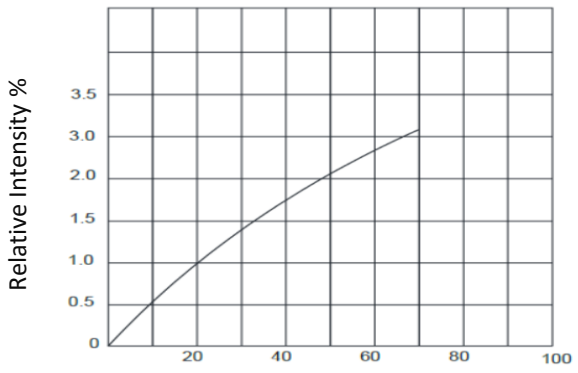
Code	Min.	Max.	Unit
GR-n	8000	16000	mcd
	8.15	15	lm

Dominant Wavelength Classifications (I_F = 50mA):

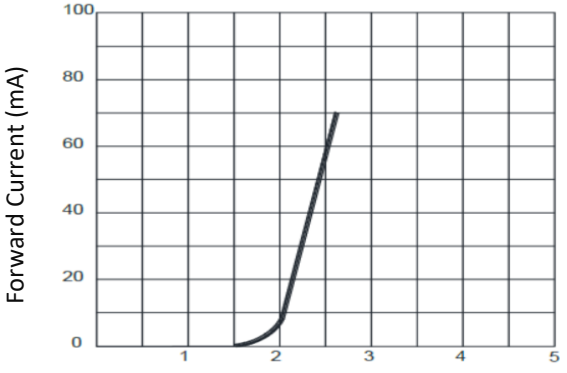
Code	Min.	Max.	Unit
WR	615	630	nm

ELECTRO-OPTICAL CHARACTERISTICS:

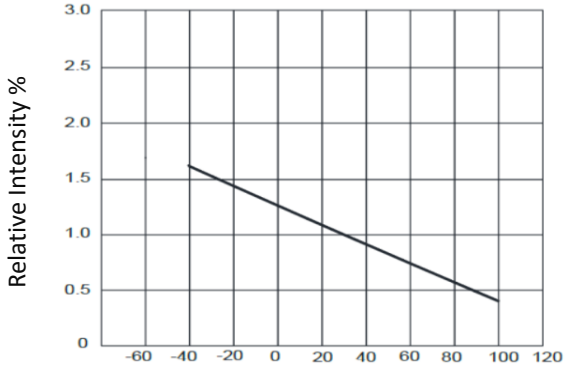
Relative Intensity v.s. Forward Current



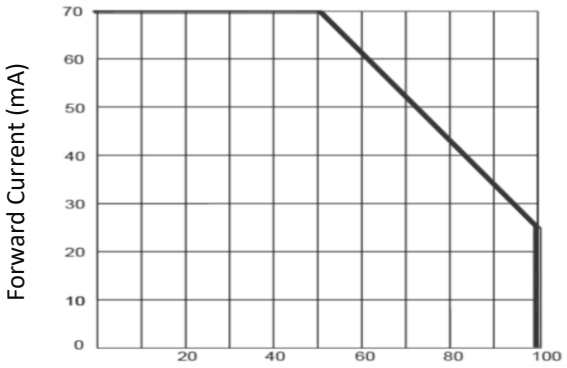
Forward Current v.s. Forward Voltage



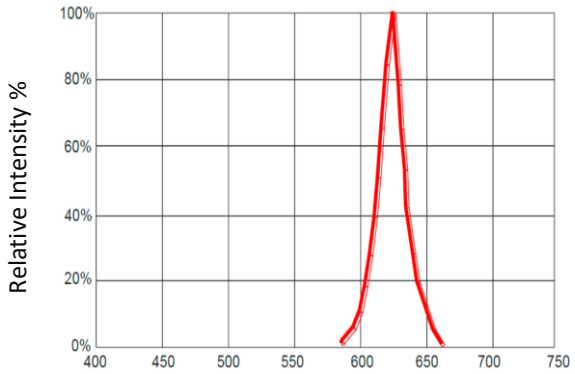
Relative Intensity v.s. Temperature



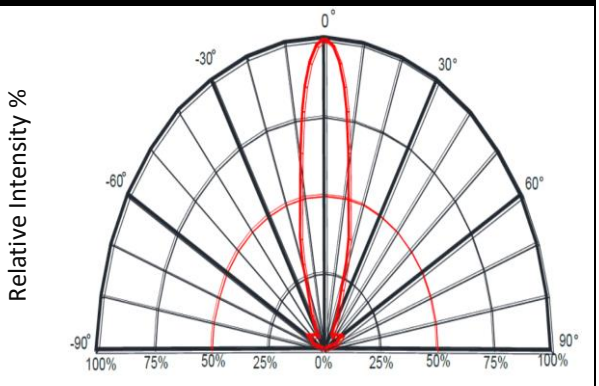
Forward Current Derating Curve



Relative Intensity v.s. Wavelength

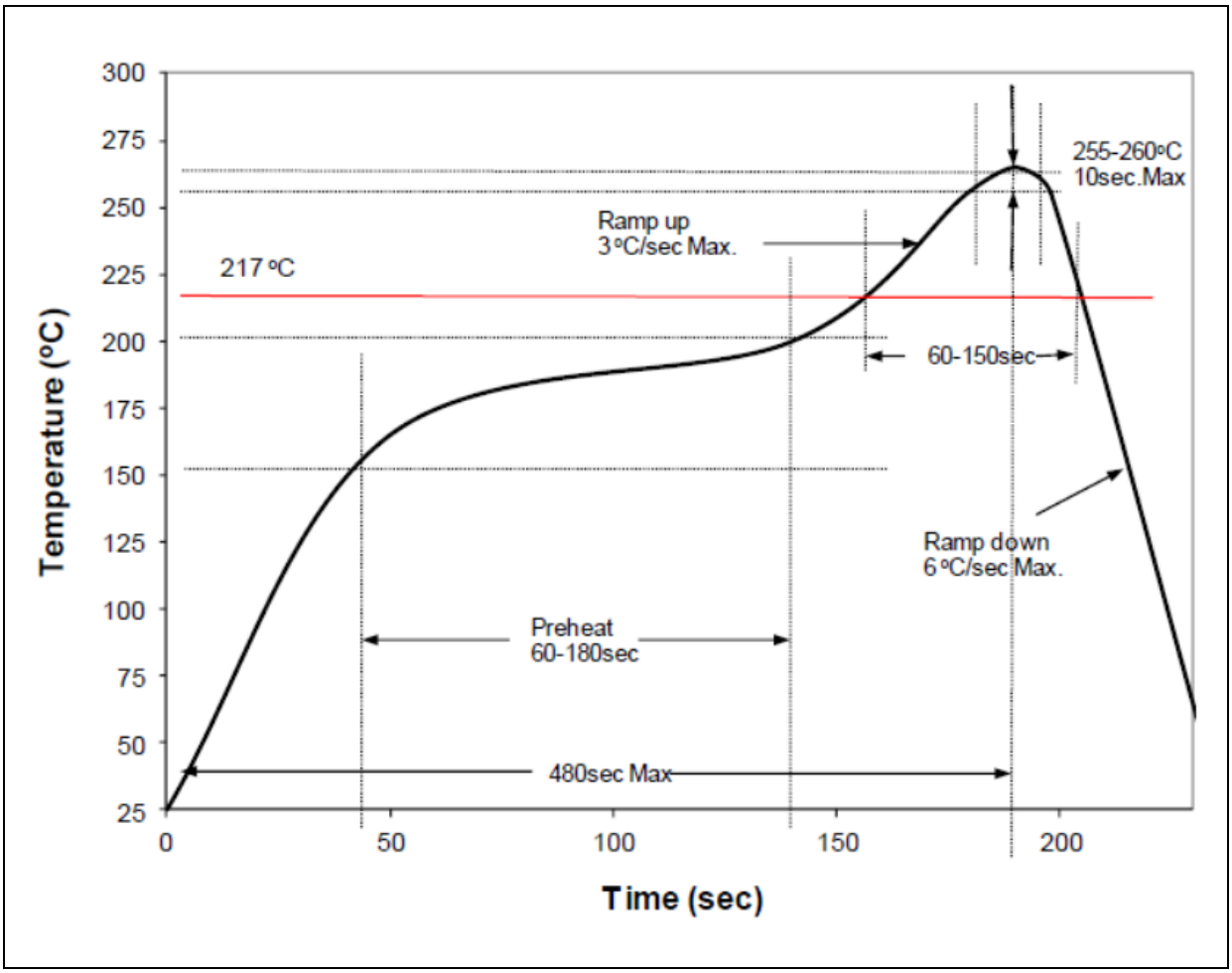


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

IR Reflow Lead-free Solder:



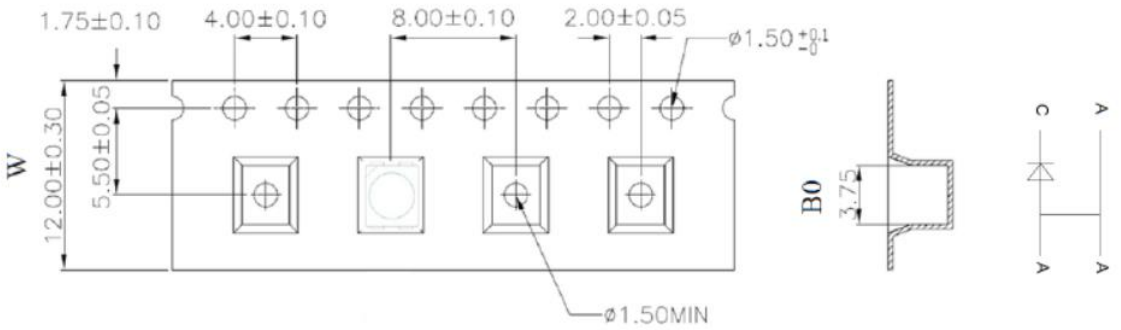
Note:

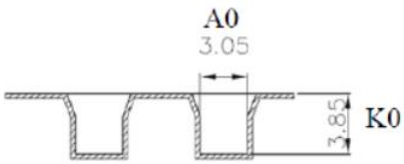
1. Maximum reflow soldering: 1 time.
2. Recommended reflow temperature 240°C. The maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

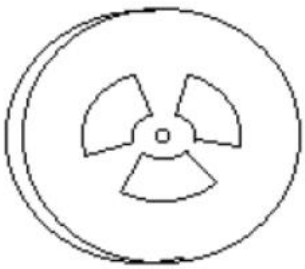
Reel Dimension:

Max.700pcs/reel





Item	Spec. (mm)	Tolerance(mm)
W	12.00	±0.30
A0	3.05	±0.10
B0	3.75	±0.10
K0	3.85	±0.05



Diameter : 178 mm
Width : 12 mm
700 pcs/Reel
Antistatic 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.

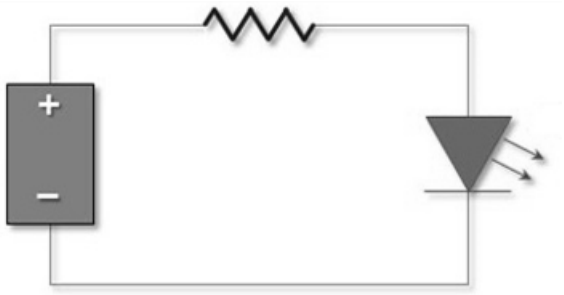
Baking:

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, for 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	08/12/2022	Datasheet set-up.