

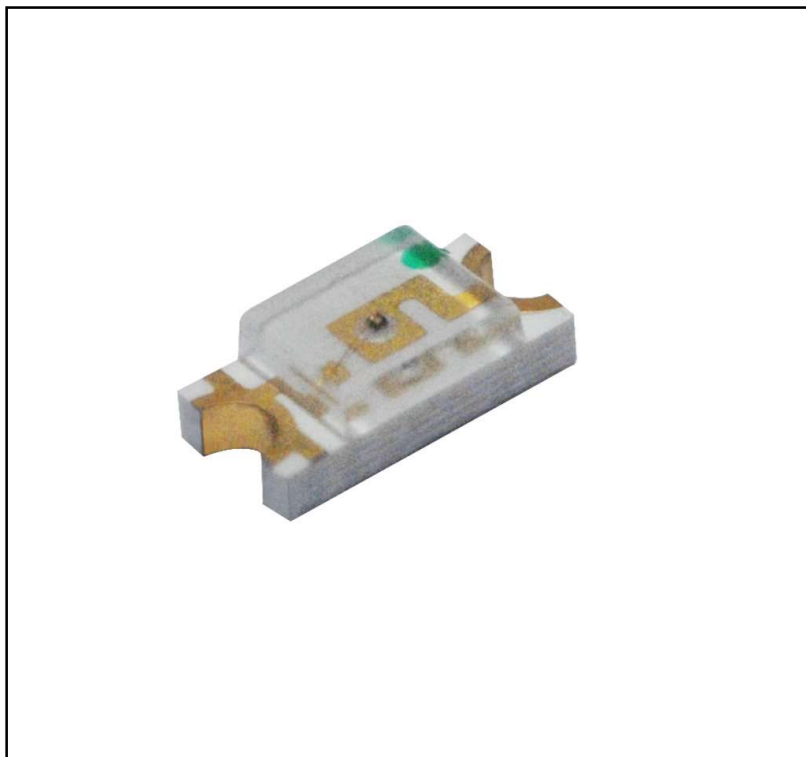
## Features

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible within infrared and vapor phase reflows older process

The product itself will remain within RoHS compliant version

## RS PRO LEDs

RS Stock No.: 0588775



RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

## Product Description

SMD LED, higher packing density, reduced storage space, lightweight makes them ideal for miniature applications. This LED is much smaller than lead frame type components. Use for applications such as:

- Flat backlight for LCD's.
- Switches and symbols.
- Backlighting in dashboard.
- Indicator and backlight in telephone

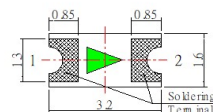
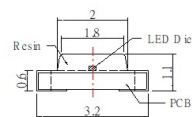
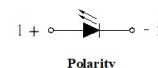
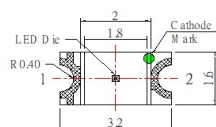
## General Specifications

LED Colour	Red, SMD LED
Dimensions	3.2 x 1.6mm, Surface Mount Chip LED Indicator

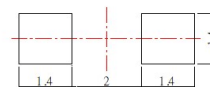
## Mechanical Specifications

### Mechanical Life

### Recommended Soldering Pad Dimensions Soldering Temperature: 260°C for 5 Seconds



### Recommended Soldering Pad Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm ( $\pm 0.010$ ) unless otherwise noted.

## Electrical Specifications

Absolute Maximum Ratings at Ta=25°C

Parameters	Symbol	Max	Unit
Power Dissipation	Pd	60	mW
Peak Forward Current <sup>(a)</sup>	IFP	100	mA
DC Forward Current	IF	25	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge (HBM)	ESD	2000	V
Operating Temperature Range	Topr	-40°C to +85°C	
Storage Temperature Range	Tstg	-40°C to +85°C	
Soldering Temperature	Tstg	260°C for 5 Seconds	

Note:

a. Pulse width ≤ 0.1ms, Duty ≤ 1/10

## Electrical Optical Characteristics at Ta=25°C

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity <sup>(a)</sup>	IV	80	115	---	mcd	IF=20mA
Viewing Angle	2θ1/2	---	120	---	Deg	IF=20mA
Peak Emission Wavelength	λp	---	632	---	nm	IF=20mA
Dominant Wavelength <sup>(b)</sup>	λd	---	624	---	nm	IF=20mA
Spectral Line Half-Width	Δλ	---	45	---	nm	IF=20mA
Forward Voltage <sup>(c)</sup>	VF	1.6	2.0	2.4	V	IF=20mA
Reverse Current	IR	---	---	10	μA	VR=5V

Notes:

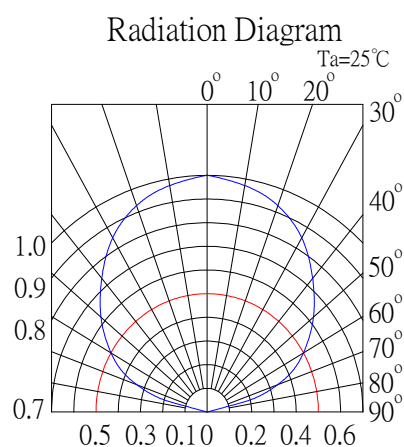
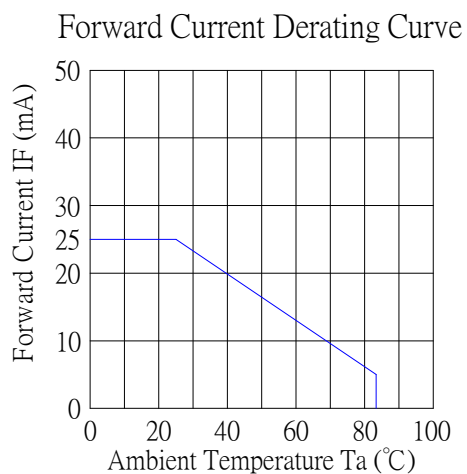
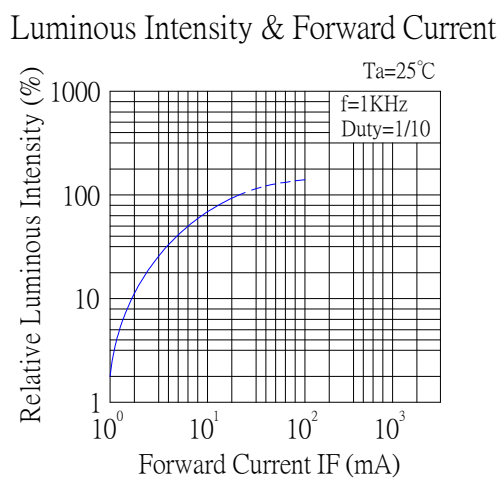
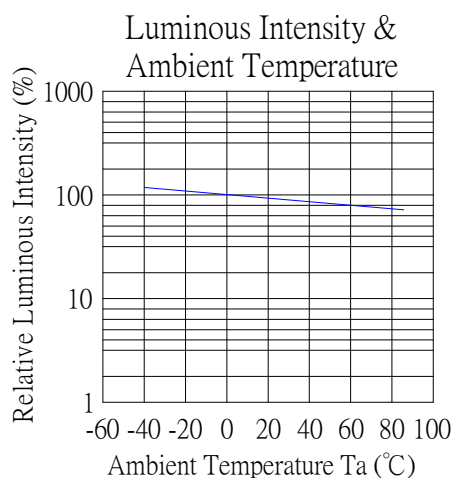
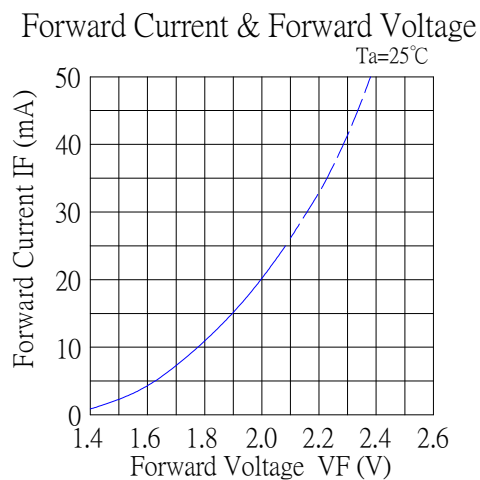
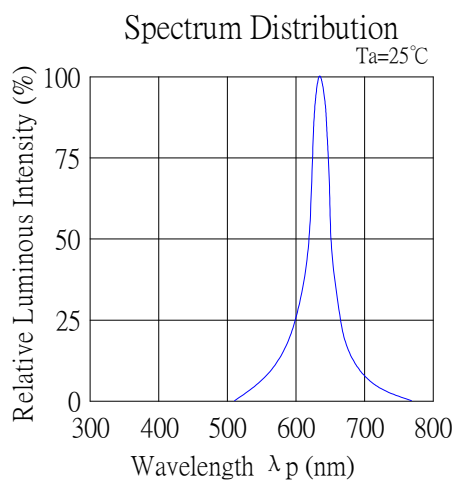
a. Luminous Intensity measurement tolerance: ±10%.

b. Wavelength measurement tolerance: ±1nm

c. Forward voltage measurement tolerance: ±0.1V

## Typical Electrical / Optical Characteristics Curves

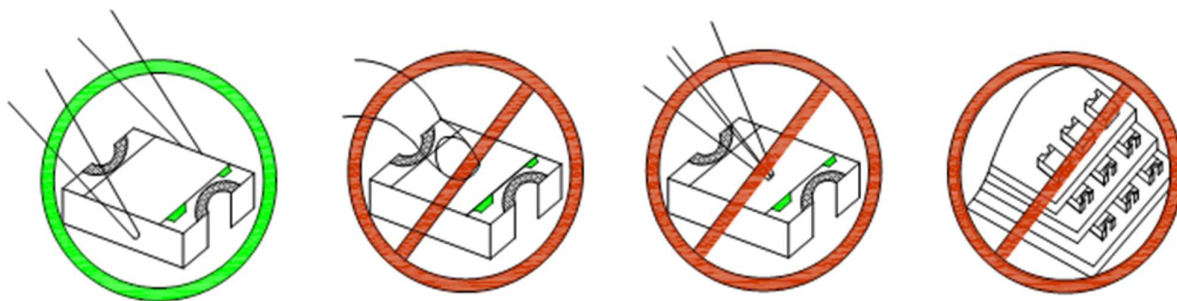
(25°C Ambient Temperature Unless Otherwise Noted)



## CAUTIONS

## 1. Handling Precautions

- 1.1. Handle the component along the side surfaces by using forceps or appropriate tools.
- 1.2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.
- 1.3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



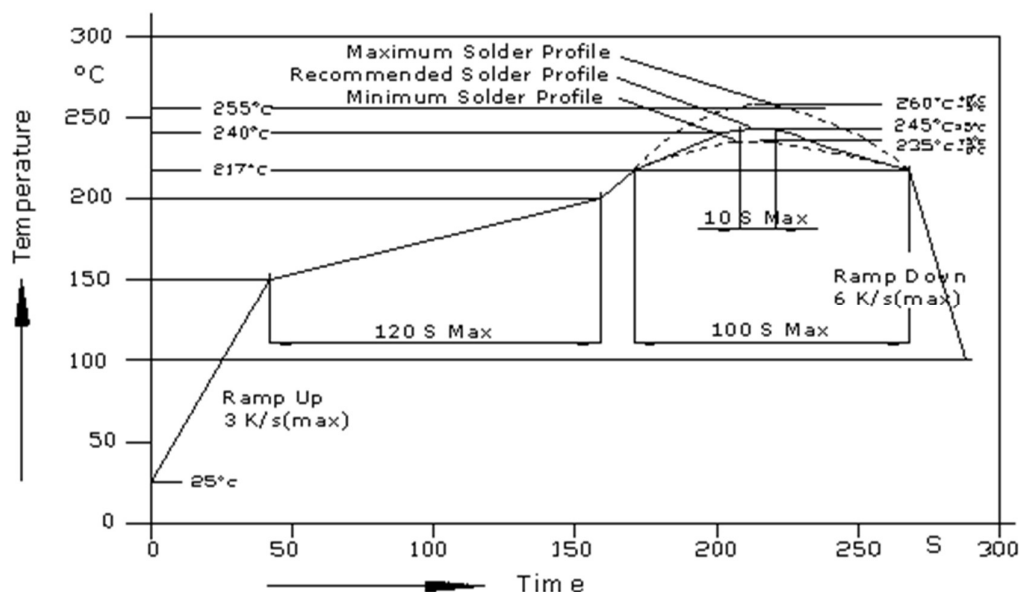
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

## 2. Storage

- 2.1. Do not open moisture proof bag before the products are ready to use.
- 2.2. Before opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.
- 2.3. The LEDs should be used within a year.
- 2.4. After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.
- 2.5. The LEDs should be used within 168 hours after opening the package.
- 2.6. If the moisture adsorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 65±5°C for 24 hours.

## 3. Soldering Condition

## 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

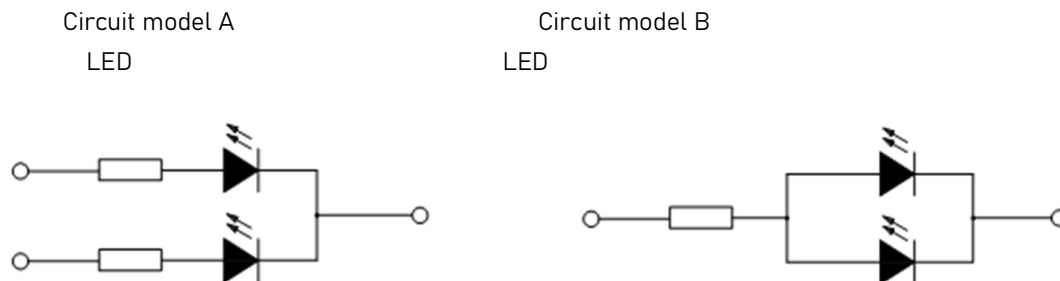
3.5 Recommended soldering conditions:

Reflow soldering		Soldering iron	
Pre-heat	150~200°C	Temperature	300°C Max.
Pre-heat time	120 sec. Max.	Soldering time	3 sec. Max.
Peak temperature	260°C Max.		(one time only)
Soldering time	10 sec. Max.(Max. two times)		

3.6 Because different board designs use different number and types of devices, solder pastes, reflow ovens, and circuit boards, no single temperature profile works for all possible combinations. However, you can successfully mount your packages to the PCB by following the proper guidelines and PCB-specific characterization.

## 4. Drive Method

4.1. An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.



- a Recommended circuit.
- b The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

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