



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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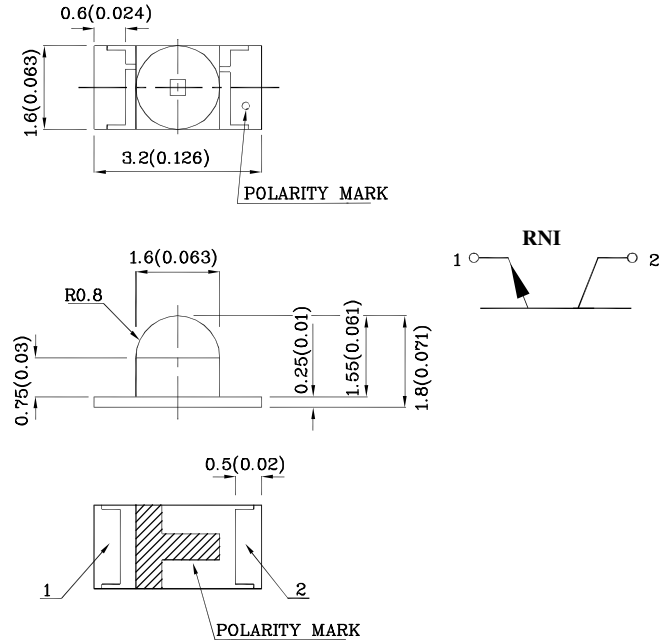


### Features

- Long life and robust package
- Standard Package: 2,000pcs/ Reel
- MSL (Moisture Sensitivity Level): 3
- RoHS compliant



### Package Schematics



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.2(0.008)$  unless otherwise noted.
3. Specifications are subject to change without notice.

### Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
V <sub>BR CEO</sub>	Collector-to-Emitter Breakdown Voltage	30			V	I <sub>C</sub> =100μA E <sub>e</sub> =0mW/cm <sup>2</sup>
V <sub>BR ECO</sub>	Emitter-to-Collector Breakdown Voltage	5			V	I <sub>E</sub> =100μA E <sub>e</sub> =0mW/cm <sup>2</sup>
V <sub>CE(SAT)</sub>	Collector-to-Emitter Saturation Voltage			0.8	V	I <sub>C</sub> =2mA E <sub>e</sub> =20mW/cm <sup>2</sup>
I <sub>CEO</sub>	Collector Dark Current			100	nA	V <sub>CE</sub> =10V E <sub>e</sub> =0mW/cm <sup>2</sup>
T <sub>R</sub>	Rise Time (10% to 90%)		15		μs	V <sub>CE</sub> =5V I <sub>C</sub> =1mA R <sub>L</sub> =1KΩ
T <sub>F</sub>	Fall Time (90% to 10%)		15		μs	
I <sub>(ON)</sub>	On State Collector Current	0.4	1		mA	V <sub>CE</sub> =5V E <sub>e</sub> =1mW/cm <sup>2</sup> λ=940nm

### Absolute Maximum Ratings at TA=25°C

Parameter	Maximum Ratings
Collector-to-Emitter Voltage	30V
Emitter-to-Collector Voltage	5V
Power Dissipation at (or below) 25°C Free Air Temperature	100mW
Operating / Storage Temperature Range	-40°C T <sub>o</sub> +85°C

A Relative Humidity between 40% and 60% is recommended in ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)

Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

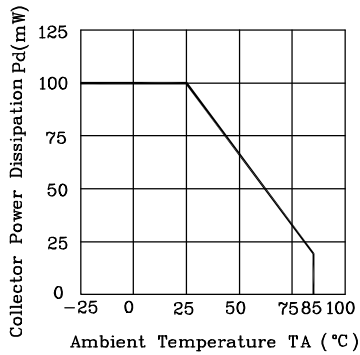


Fig.2 Spectral Sensitivity

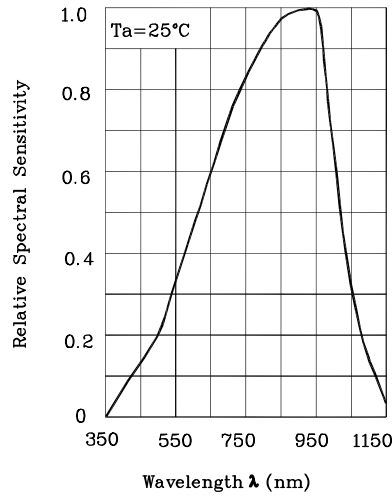


Fig.3 Relative Collector Current vs. Ambient Temperature

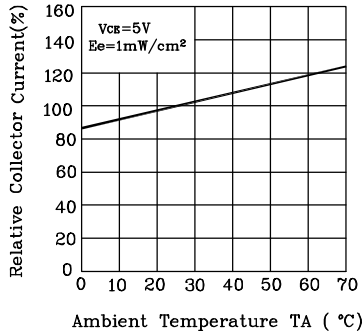


Fig.4 Collector Current  $I_c = f(E_e), V_{ce} = 5\text{V}, T_a = 25^\circ\text{C}$

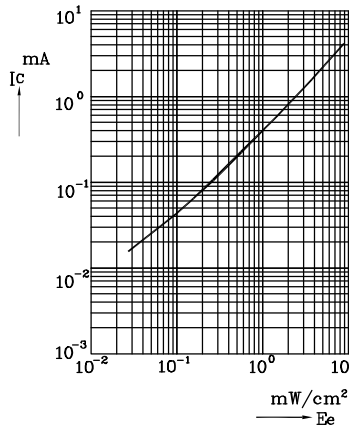


Fig.5 Collector Dark Current vs. Ambient Temperature

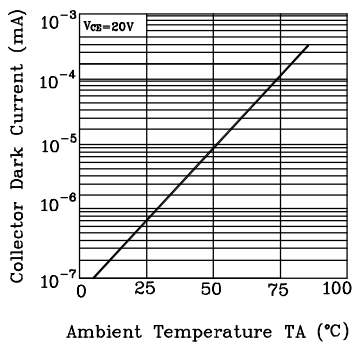


Fig.6 Collector Current vs. Collector-Emitter Voltage

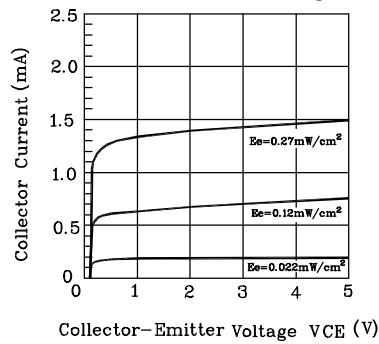
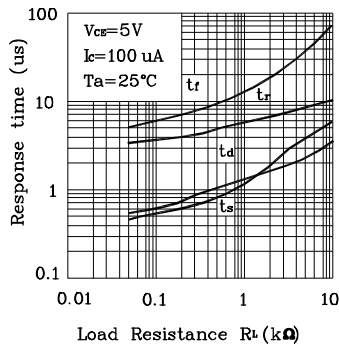
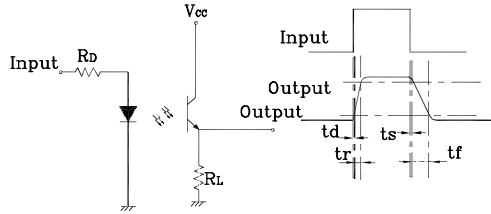


Fig.7 Response Time vs. Load Resistance

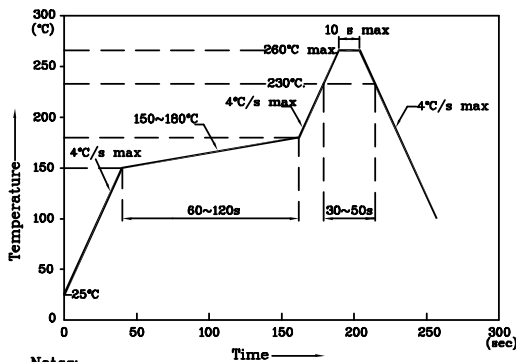


Test Circuit for Response Time



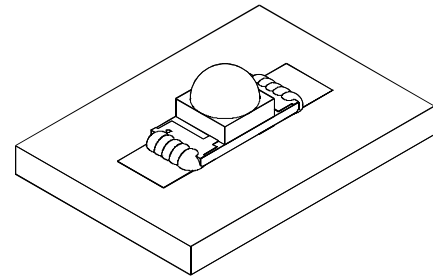
LED is recommended for reflow soldering and soldering profile is shown below.

Reflow Soldering Profile for SMD Products (Pb-Free Components)

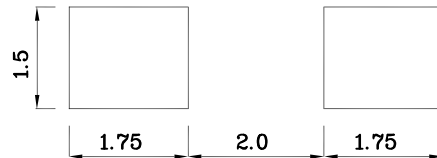


- Notes:
1. Maximum soldering temperature should not exceed 260°C
  2. Recommended reflow temperature: 145°C-260°C
  3. Do not put stress to the epoxy resin during high temperatures conditions

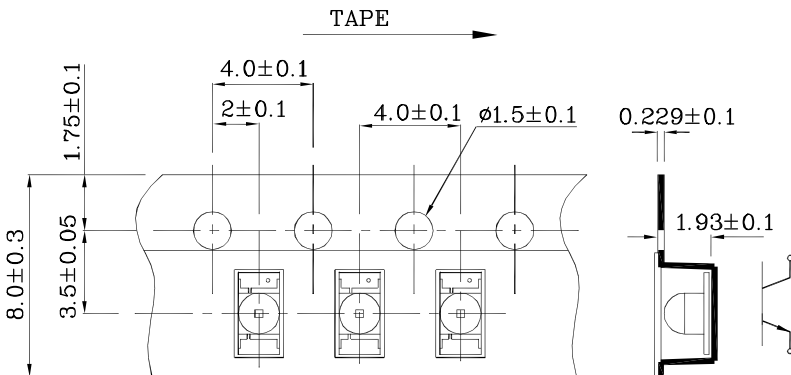
❖ The device has a single mounting surface. The device must be mounted according to the specifications.



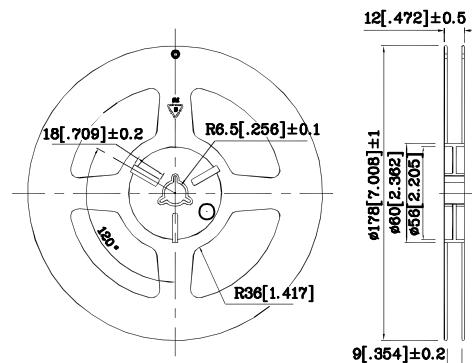
❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



❖ Tape Specification (Units : mm)



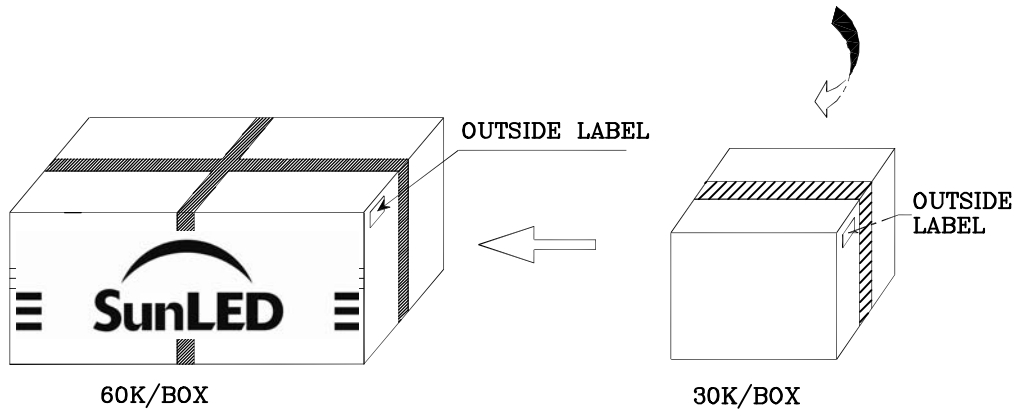
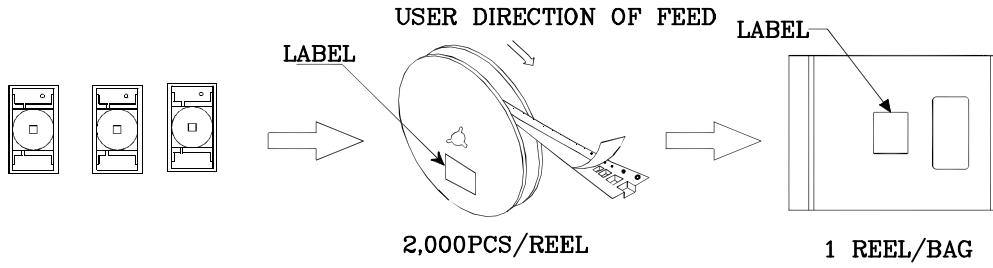

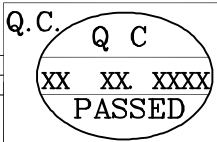
❖ Reel Dimension








**PACKING & LABEL SPECIFICATIONS**

P/NO : XZxxx55x	
QTY : 2,000 pcs	CODE: XXX
S/N : XX	
LOT NO :	
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	

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