

**BL3535IR12G42-T8A-850**  
**3.45x3.45mm, Infrared Emitting diode**  
**Ceramic Package Top View LED**  
**Technical Data Sheet**



**Features:**

- Small SMT ceramic package with high efficiency.
- Very long operating life.
- Low voltage DC operated.
- High radiant intensity.
- Peak Emission Wavelength  $\lambda_p=850\text{nm}$ .
- Instant light (less than 100 ns).
- High reliable.
- The product itself will remain within RoHS compliant Version.
- Double gold thread.
- 99.99% double gold wire welding is more reliable and stable.
- High color consistency, high quality, high lumen.
- Low voltage DC.
- Safer low-voltage DC operation.



**Applications:**

- Optoelectronic switch.
- Floppy disk drive.
- Free air transmission system.
- Infrared applied system.
- Smoke detector.

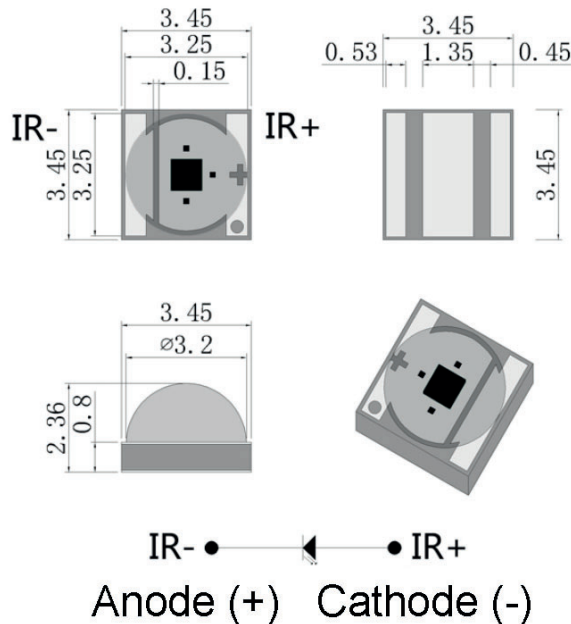
**Descriptions:**

- The C3535 Infrared Emitting Diode is a high intensity diode.
- The device is spectrally matched with phototransistor, photodiode and infrared receiver module.

**Technical Data Sheet**

Part No.	Emitting Color	Lens Color
BL3535IR12G42-T8A-850	Infrared	Water Clear

**Package Dimensions:**



**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.00mm (.039") max.

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

Parameters	Symbol	Max	Unit
Power Dissipation	Pd	3	W
Peak Forward Current <sup>(a)</sup>	IFP	1000	mA
DC Forward Current <sup>(b)</sup>	IF	700	mA
Electrostatic Discharge (HBM)	ESD	2000	V
LED Junction Temperature	Tj	120	°C
Operating Temperature Range	Topr	-40°C to +80°C	
Storage Temperature Range	Tstg	-40°C to +85°C	
Soldering Temperature	Tsld	260°C for 5 seconds	

**Notes:**

- a. Derate linearly as shown in derating curve.
- b. Duty Factor = 10%, Frequency = 1 kHz

### Electrical Optical Characteristics at Ta=25°C

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Radiant Intensity	IE	300	430	---	mW/sr	IF=700mA
Radiant Flux	Po	300	500	---	mW	IF=700mA
Viewing Angle <sup>(b)</sup>	2θ1/2	---	60	---	deg.	IF=350mA
Peak Emission Wavelength	λp	---	850	---	nm	IF=350mA
Spectral Line Half-Width	Δλ	---	45	---	nm	IF=350mA
Forward Voltage	VF	1.4	---	2.0	V	IF=350mA
Thermal Resistance Junction/ Solder Point	Rth	---	7	---	°C/W	IF=350mA
Reverse Current	IR	---	---	50	μA	VR=5V

**Notes:**

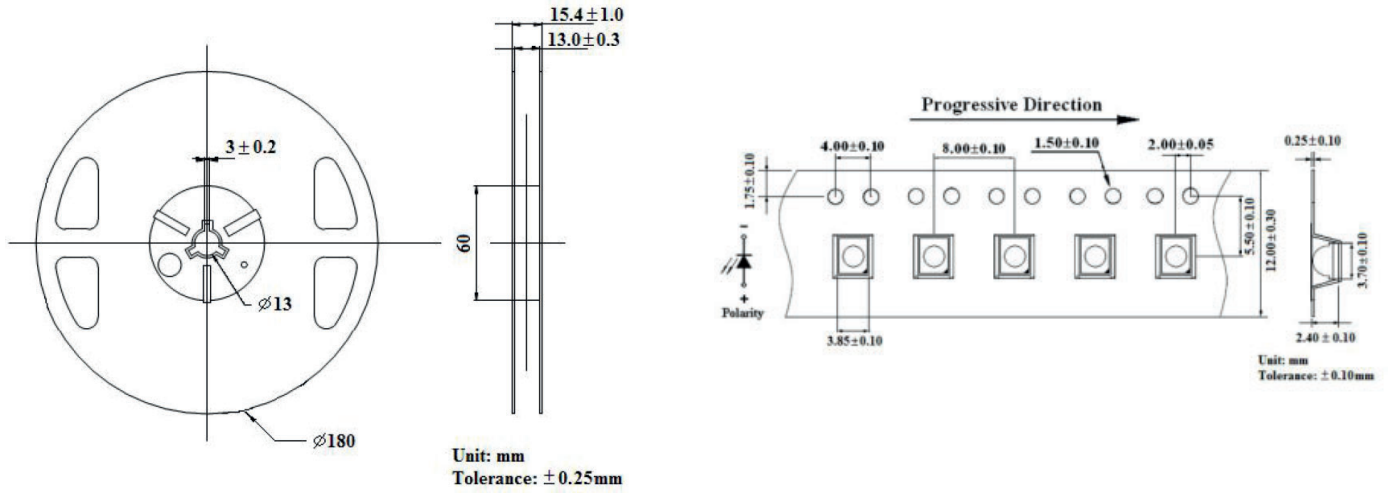
- a. 2θ1/2 is the off-axis angle where the luminous intensity is 1/2 the peak intensity

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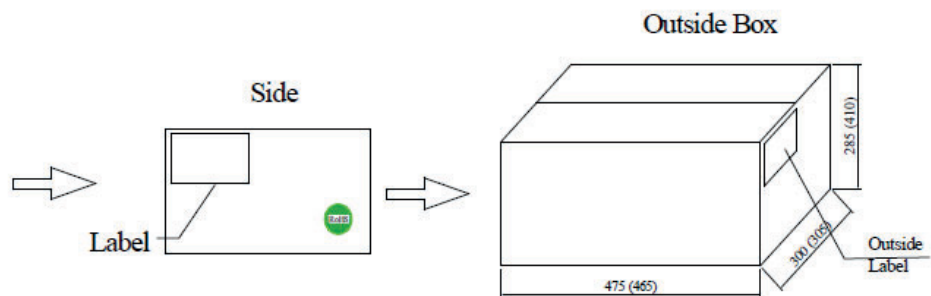
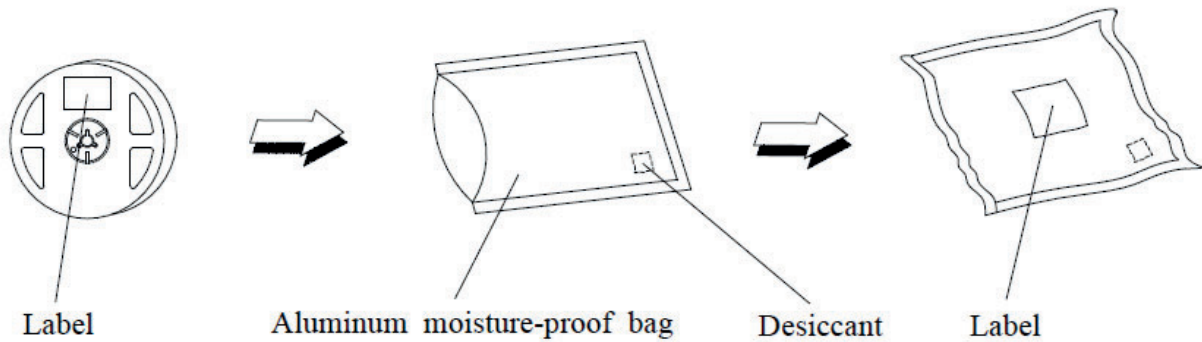
**Reel and Tape Dimensions:**

Loaded quantity 1000 pcs per reel.



**Packing & Label Specifications:**

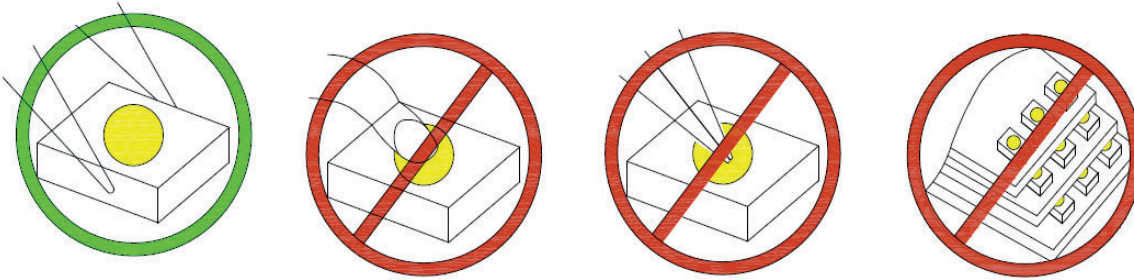
Moisture Resistant Packaging:



## 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.



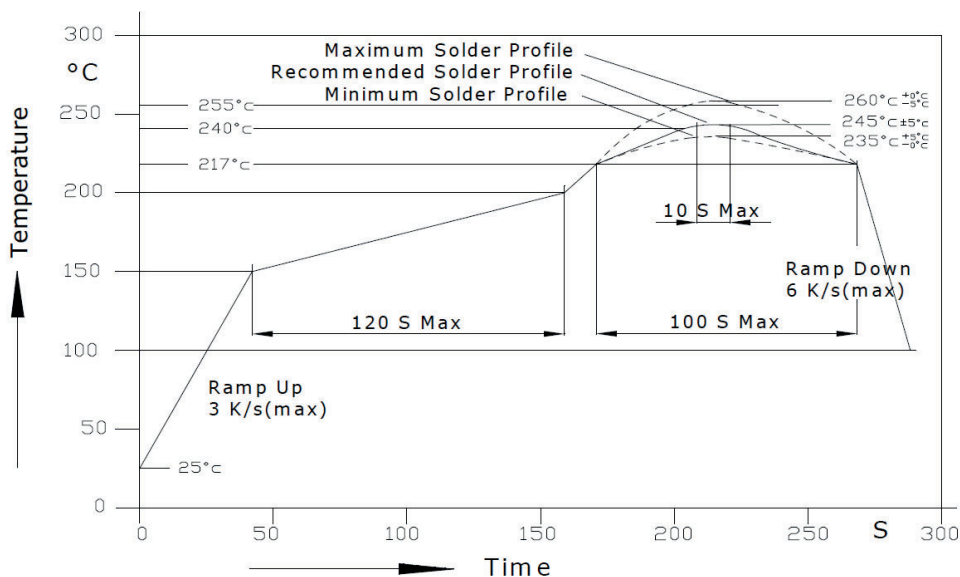
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using 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 24 hours after opening the package.
- 2.6. If the moisture adsorbent material has fabled 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



#### Recommended soldering conditions:

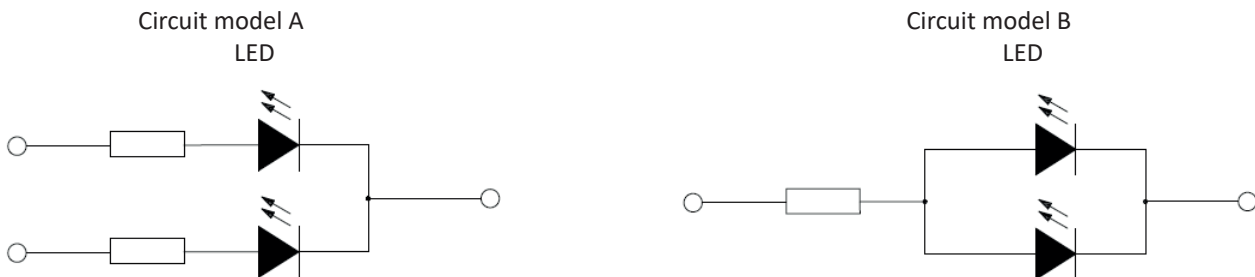
- 3.2. Reflow soldering should not be done more than two times.
- 3.3. When soldering, do not put stress on the LEDs during heating.
- 3.4. After soldering, do not warp the circuit board.
- 3.5. Recommended soldering conditions:

Soldering iron		Reflow soldering	
Temperature	300°C Max.	Pre-heat	150-200°C Max.
		Pre-heat Time	120 sec. Max.
Soldering Time	3 sec. Max. (one time only)	Solder Wave	260°C Max.
		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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