Luckylight

1W-3W SMT Ceramic Package Top View

Infrared LED

Technical Data Sheet

Part No.: C3535SIR2C-2B

Features:

- ◇ Small SMT ceramic package with high efficiency.
- ◇ Very long operating life (up to100k hours).
- ◇ Low voltage DC operated.
- ◇ High radiant intensity.
- ◇ Peak Emission Wavelength λp=850nm.
- ◇ Instant light (less than 100 ns).
- ◇ High reliable.
- ◇ The product itself will remain within RoHS compliant Version.

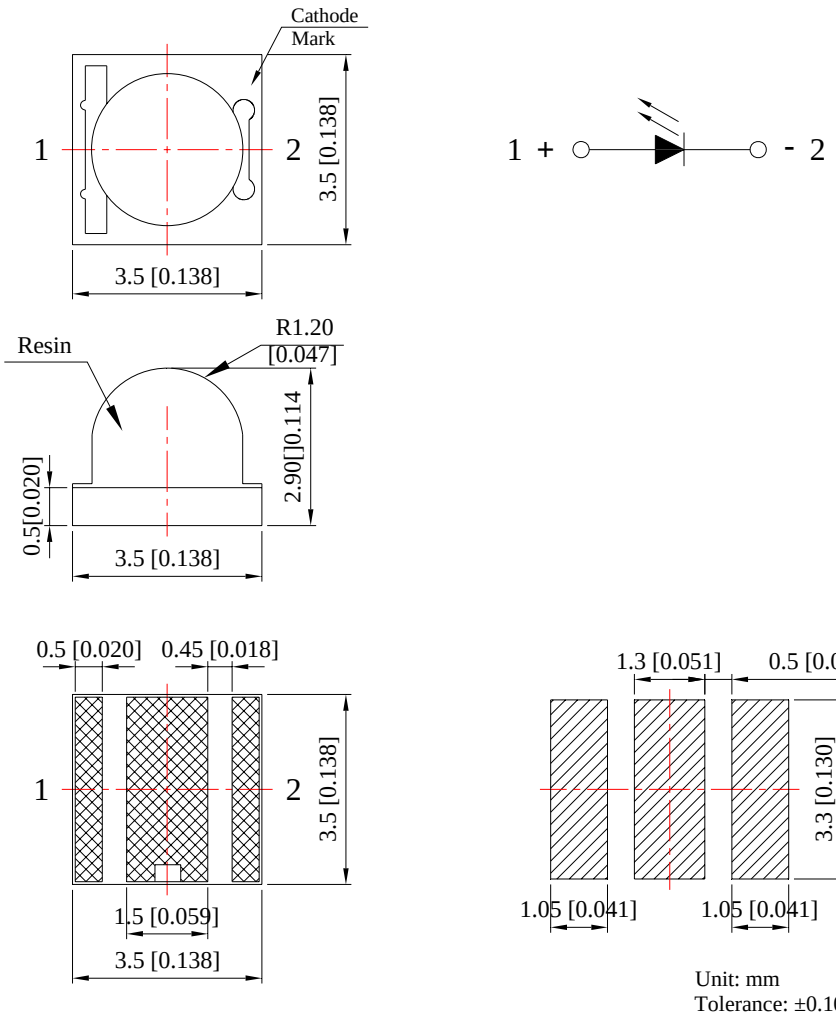
Descriptions:

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

Applications:

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

Package Dimension:



Part No.	Chip Material	Lens Color	Emitting Color
C3535SIR2C-2B	GaAlAs	Water Clear	Infrared

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.10mm (.004") unless otherwise specified.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameters	Symbol	Max.	Unit
Power Dissipation	PD	1-3	W
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	<1400	mA
Continuous Forward Current	IF	350	mA
LED Junction Temperature	Tj	150	℃
Operating Temperature Range	Topr	-40℃ to +85℃	
Storage Temperature Range	Tstg	-40℃ to +100℃	
Soldering Temperature	Tsld	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

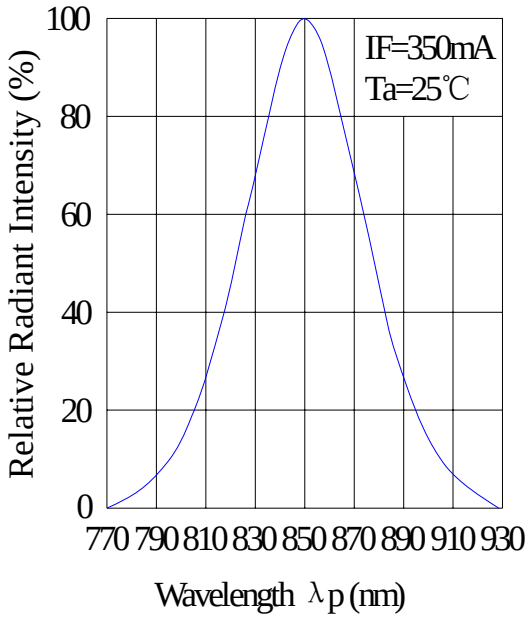
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Radiant Flux	Po	275	300	---	mw	IF=350mA
	Po	600	780	---	mw	IF=1000mA
Viewing Angle *	2θ1/2	---	60	---	Deg	IF=350mA (Note 1)
Peak Emission Wavelength	λp	---	850	---	nm	IF=350mA
Spectral Bandwidth	△λ	---	45	---	nm	IF=350mA
Forward Voltage	VF	1.40	---	2.00	V	IF=350mA
Reverse Current	IR	---	---	50	μA	V_R=5V

Notes:

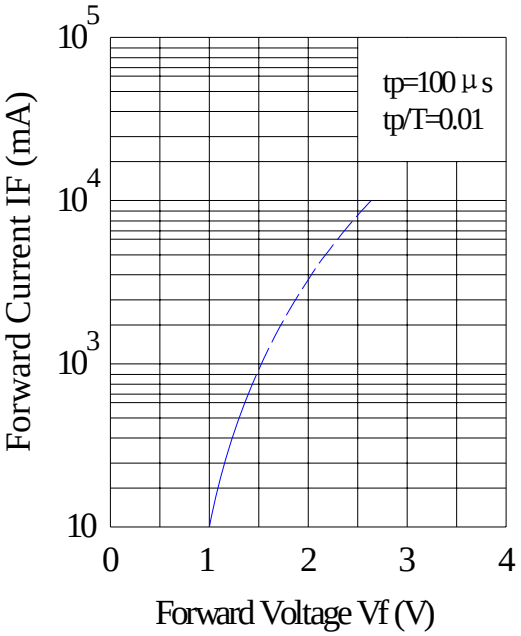
1. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

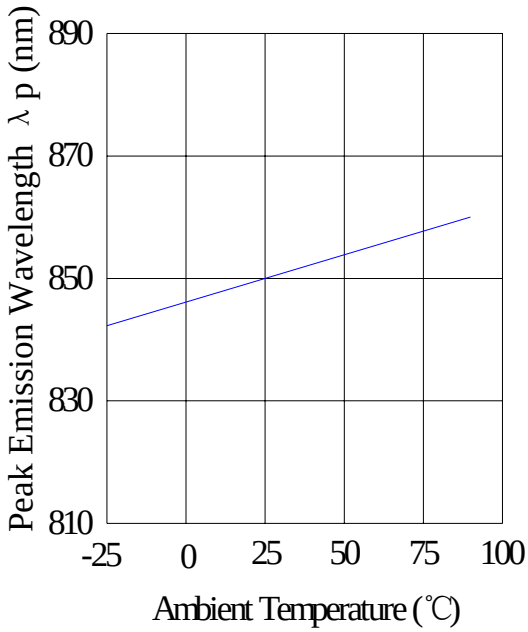
Spectral Distribution



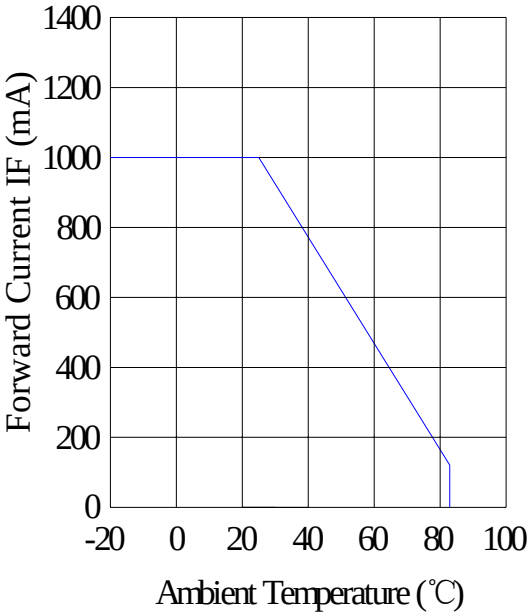
Forward Current & Forward Voltage



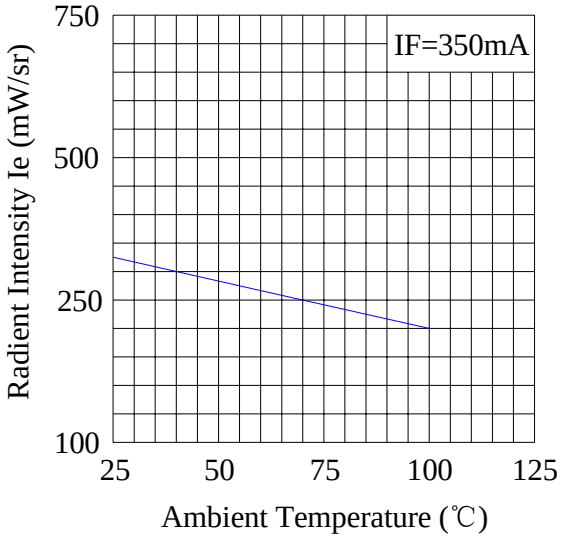
Peak Emission Wavelength & Ambient Temperature



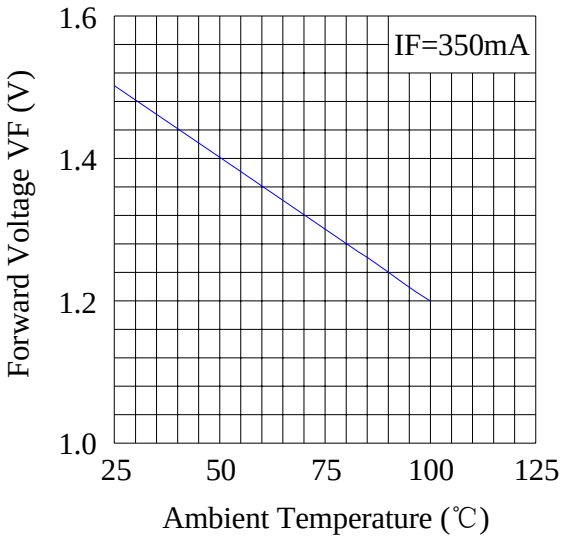
Forward Current & Ambient Temperature



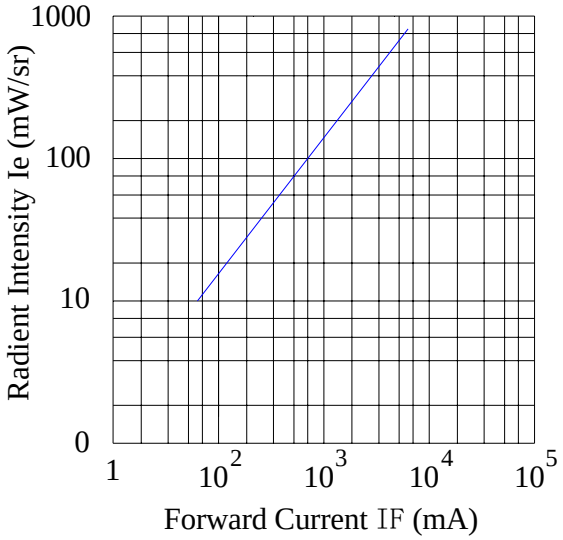
Relative Intensity &
Ambient Temperature



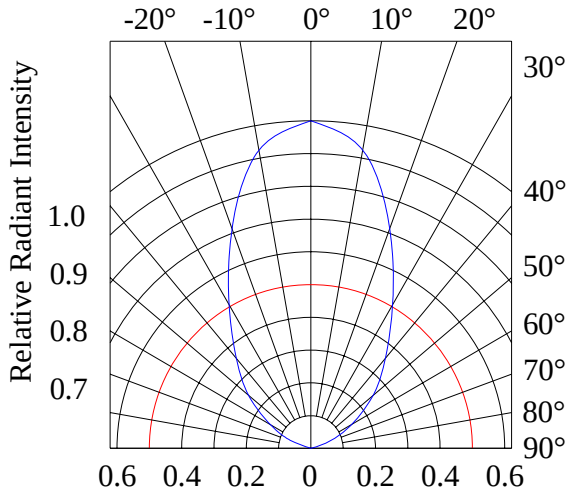
Forward Voltage &
Ambient Temperature



Relative Intensity & Forward Current



Relative Radiant Intensity
& Angular Displacement



Reliability Test Items And Conditions:

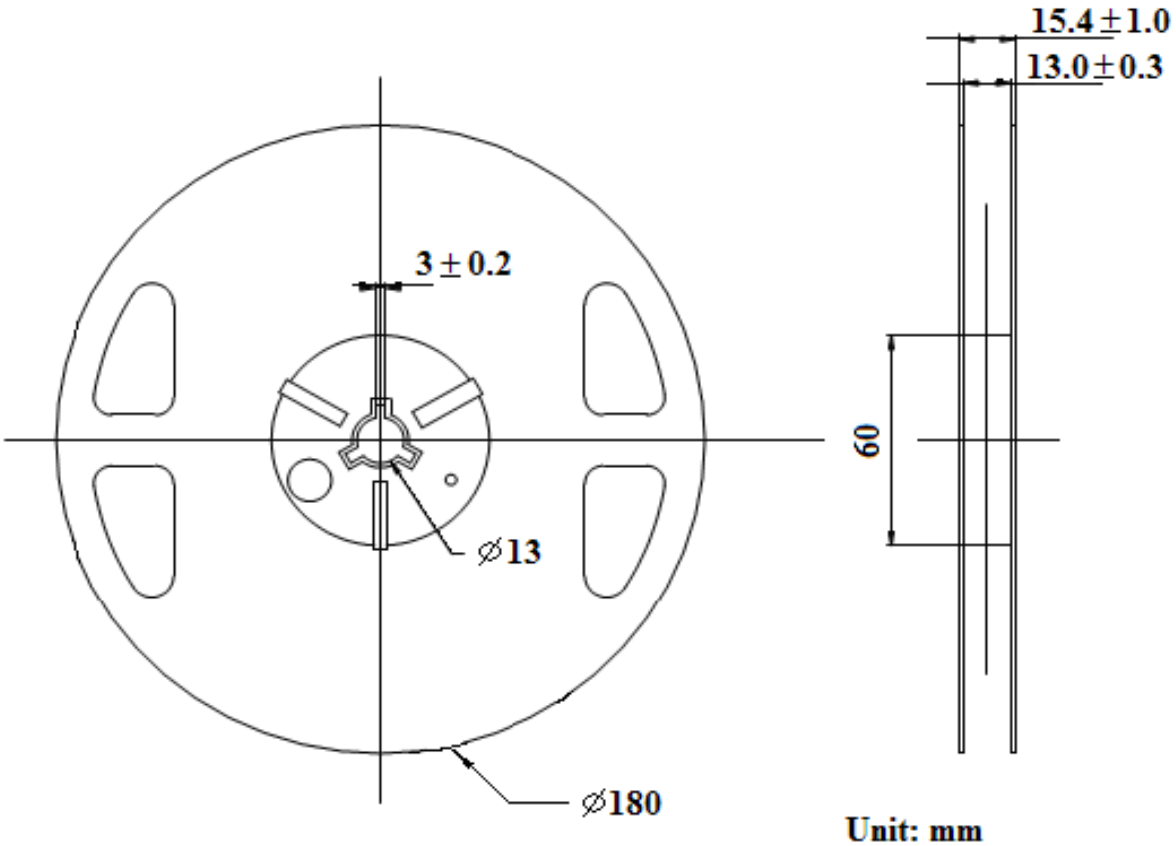
The reliability of products shall be satisfied with items listed below:

Confidence level: 90%.

LTPD: 10%.

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat	JEITA ED-4701 300 302	Tsld=260±5℃,10sec 3mm from the base of the epoxy bulb	1 time	0/100
Solder ability	JEITA ED-4701 300 303	Tsld=235±5℃,5sec (using flux)	1time over 95%	0/100
Thermal Shock	JEITA ED-4701 300 307	0℃~100℃ 15sec,15sec	100 cycles	0/100
Temperature Cycle	JEITA ED-4701 100 105	-40℃~25℃~100℃~25℃ 30min,5min,30min,5min	100 cycles	0/100
Moisture Resistance Cycle	JEITA ED-4701 200 203	25℃~65℃~-10℃ 90%RH 24hrs/1cycle	10 cycles	0/100
High Temperature Storage	JEITA ED-4701 200 201	Ta=100℃	1000hrs	0/100
Terminal Strength (Pull test)	JEITA ED-4701 400 401	Load 10N (1kgf) 10±1sec	No noticeable damage	0/100
Terminal Strength (bending test)	JEITA ED-4701 400 401	Load 5N (0.5kgf) 0°~90°~0° bend 2 times	No noticeable damage	0/100
Temperature Humidity Storage	JEITA ED-4701 100 103	Ta=60℃, RH=90%	1000hrs	0/100
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40℃	1000hrs	0/100
Steady State Operating Life		Ta=25℃, IF=350mA	1000hrs	0/100
Steady State Operating Life of High Humidity Heat		Ta=60℃, RH=90%, IF=350mA	500hrs	0/100
Steady State Operating Life of Low Temperature		Ta=-30℃, IF=350mA	1000hrs	0/100

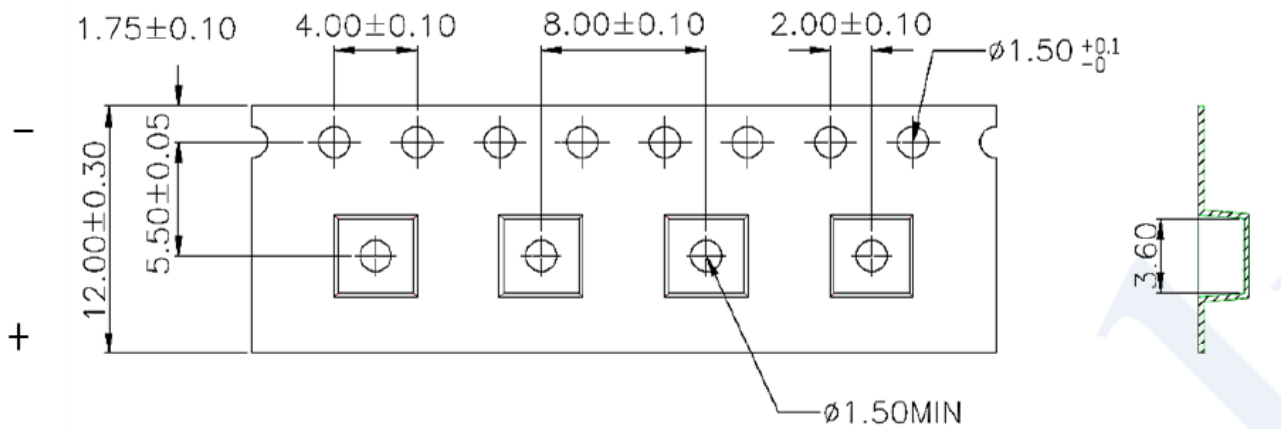
Reel Dimensions:



Unit: mm
Tolerance: ±0.25mm

Carrier Tape Dimensions:

Loaded quantity 1000PCS per reel.



Please read the following notes before using the product:

1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

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℃ or less and 80%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℃ or less and 60%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) 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: 60±5℃ for 24 hours.

3. Soldering Condition

When soldering, for Lamp without stopper type and must be leave a minimum of 3mm clearance from the base of the lens to the soldering point.

To avoided the Epoxy climb up on lead frame and was impact to non-soldering problem, dipping the lens into the solder must be avoided.

Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering conditions:

Soldering Iron		Wave Soldering	
Temperature Soldering Time	300℃ Max. 3 sec. Max. (one time only)	Pre-heat Pre-heat Time Solder Wave Soldering Time	100℃ Max. 60 sec. Max. 260℃ Max. 5 sec. Max.

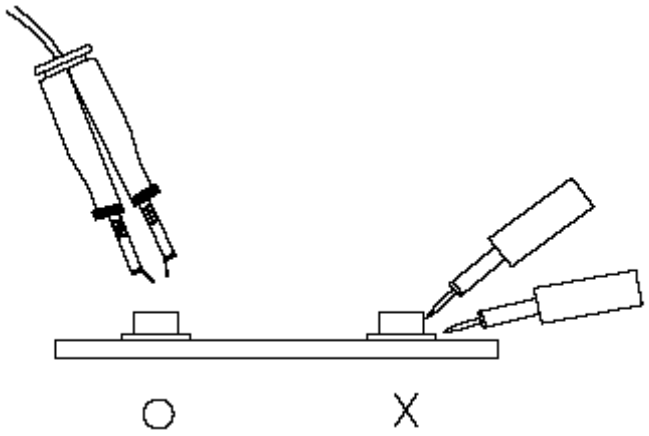
Note: Excessive soldering temperature and / or time might result in deformation of the LED lens or catastrophic failure of the LED.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260℃ for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



6. Caution in ESD

Static Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.