

JMS-850LED3535-E42120-V1.00

850nm LED with 3535 Ceramic Package

■ Features:

- * Infrared 835~875nm Optical Wavelength
- * High efficiency and ESD threshold (HBM MIL-STD-883 Class 2)
- * Good thermal dissipation and optical uniformity
- * 3535 ceramic package with 120 degree emission angle
- * RoHs and REACH compliant
- * MSL2 qualified by J-STD-020



■ Applications:

- * Automotive
- * Data communication
- * Light Source for Infrared CCTV (Surveillance Camera)

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Storage Temperature	T _{stg}	-40 ~ +100	°C
Lead Solder Temperature*	T _{sol}	260	°C
Maximum Forward Current	I _F	1,400	mA
ESD threshold	HBM	2,000	V

* Solder Time < 10 seconds

■ Electrical and optical characteristics (Ta = 25°C)

Item	Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
1	DC Forward Current *	I _F	-	-	350	1,400	mA
2	Pulse Forward Current **	I _{PF}	-	-	-	1,800	mA
3	Reverse Voltage	V _R	-	-	-	-5	V
4	Reverse Current	I _R	-5V	-	-	10	uA
5	Junction Temperature ***	T _j	-	-	-	150	°C
6	Center Wavelength	λ _c	-	835	-	875	nm
7	Emission Angle	2θ _{1/2}	-	-	120	-	Deg.

* For other ambient, limited setting of current will depend on de-rating curves.

** D=0.01s , Duty Cycle 1/10

*** When drive at maximum current, Junction Temperature (T_j) must be kept below 150 °C

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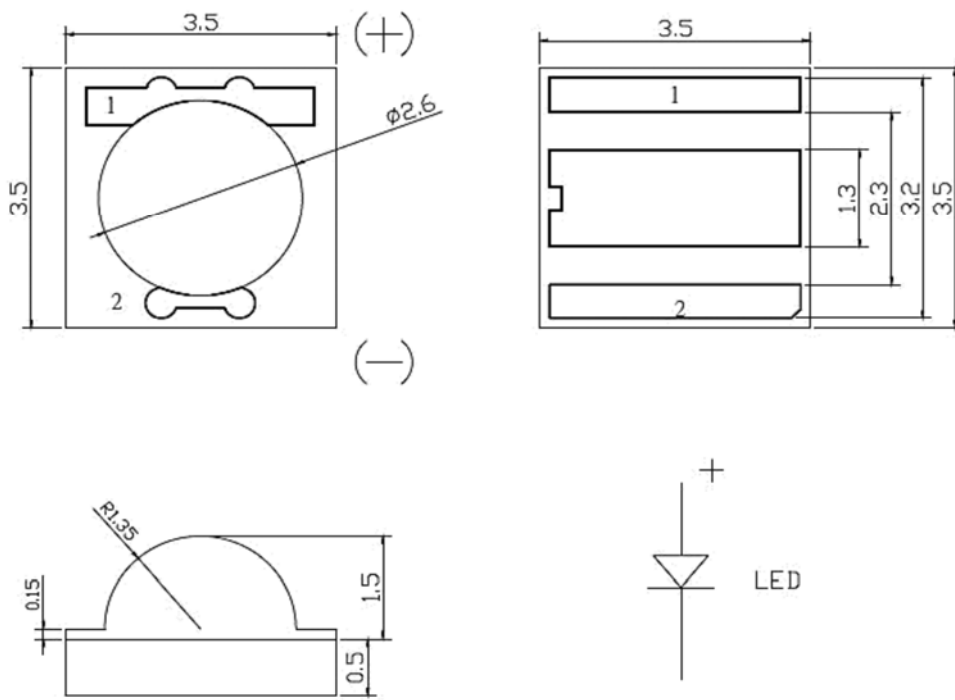
■ Bin Code Selection

Drive Current (350mA)	Min (Po)	Max (Po)	Unit
P23	250	275	mW
P24	275	300	mW
P31	300	325	mW

Drive Current (350mA)	Min (V _F)	Max (V _F)	Unit
V1	1.4	1.6	V
V2	1.6	1.8	V
V3	1.8	2.0	V

■ Outline Dimension

Unit: mm



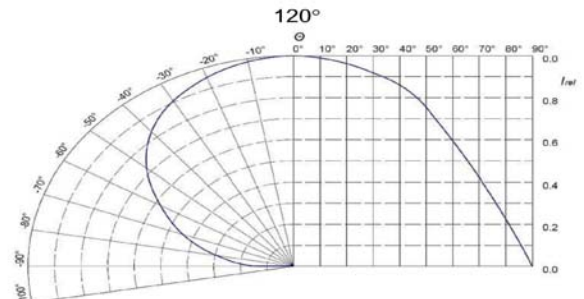
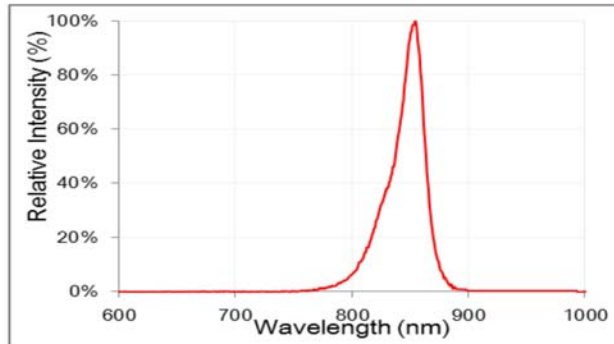
§ All dimensions are in millimeters.

§ Tolerance is ± 0.13 mm unless other specified.

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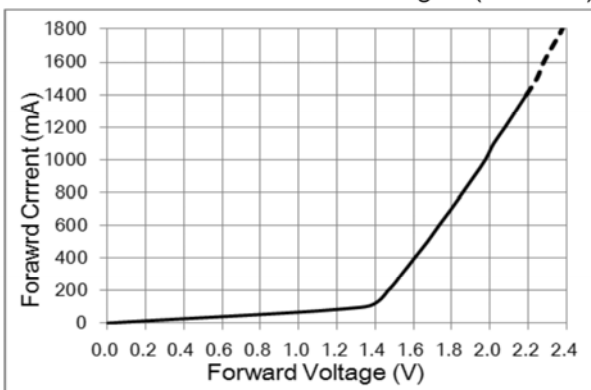
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■ Relative Spectral Distribution

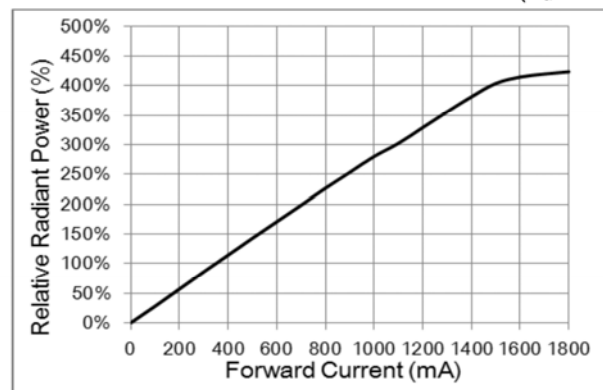


■ Relative Electronic-Optical Characteristics

Forward Current vs. Forward Voltage (T_a=25°C)

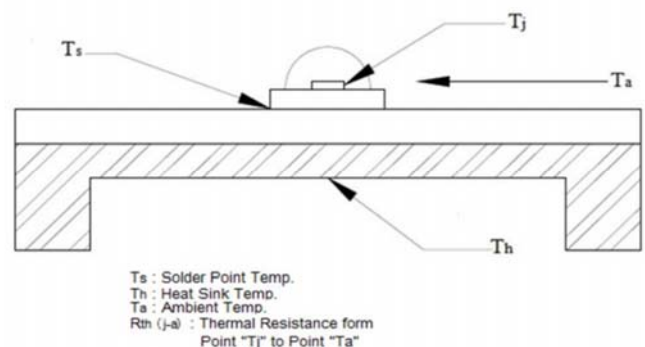
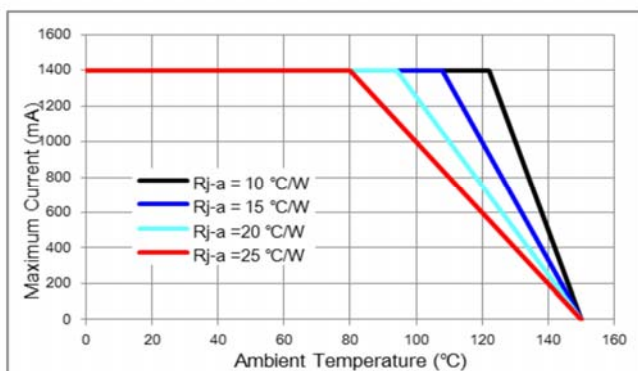


Relative Radiant Power vs. Forward Current (T_a=25°C)



■ Thermal design for de-rating

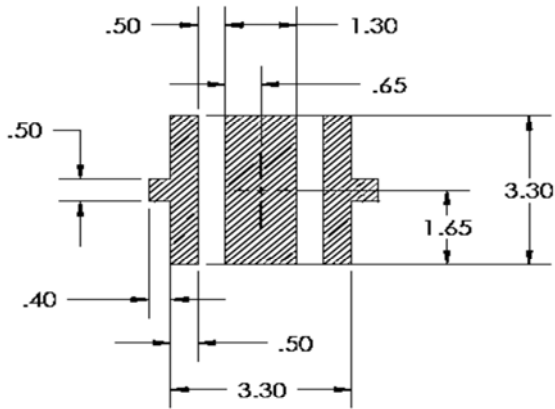
The maximum forward current is determined by the thermal resistance between LED junction and ambient. It is crucial for the end product to be designed in a manner that minimizes the thermal resistance from solder point to ambient that would optimize the LED life and optical characteristics.



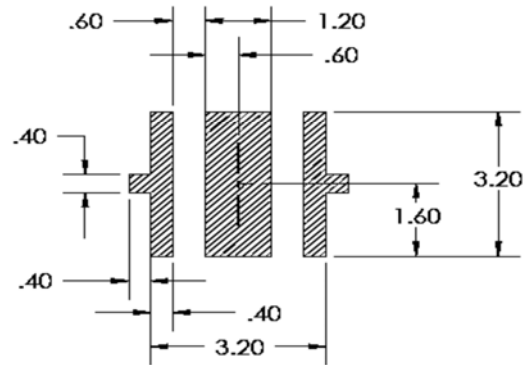
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■ Suggest Stencil Pattern



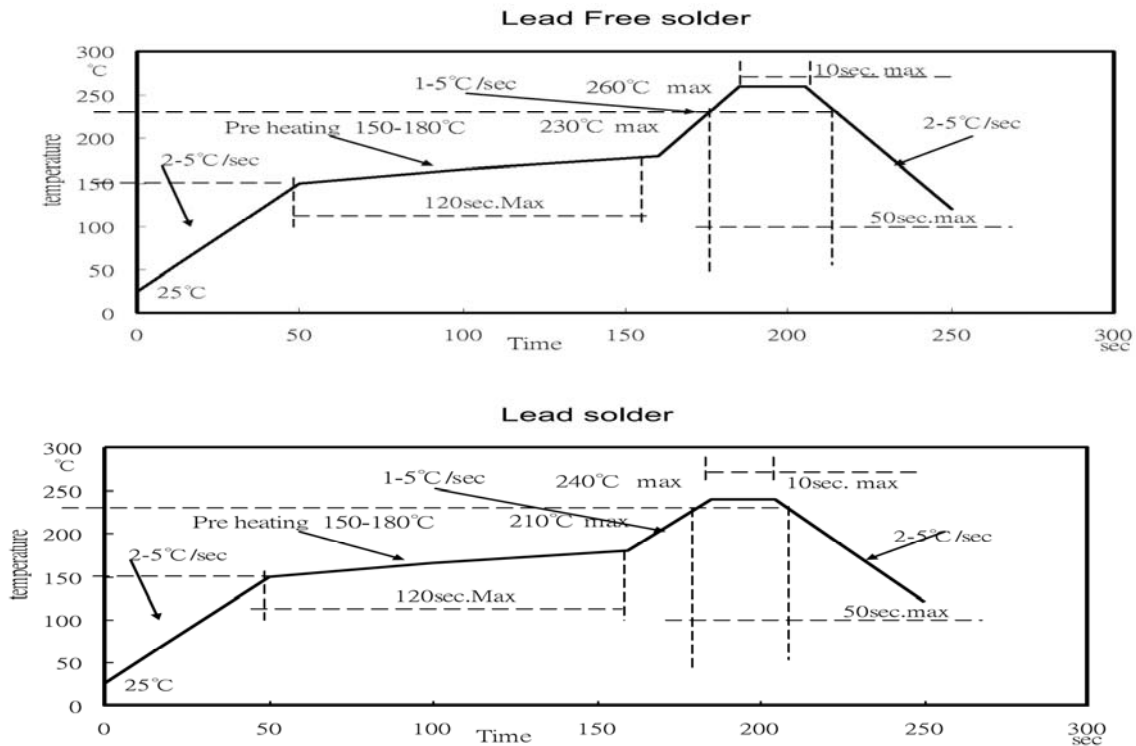
RECOMMENDED PCB SOLDER PAD



RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

§ Suggest stencil $t = 0.12$ mm

■ IR Reflow Profile



Notes:

1. The recommended reflow temperature is 240°C(±5°C). The maximum soldering temperature should be limited to 260°C.
2. Do not stress the silicone resin while it is exposed to high temperature.
3. The reflow process should not exceed 3 times.

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■ Precautions

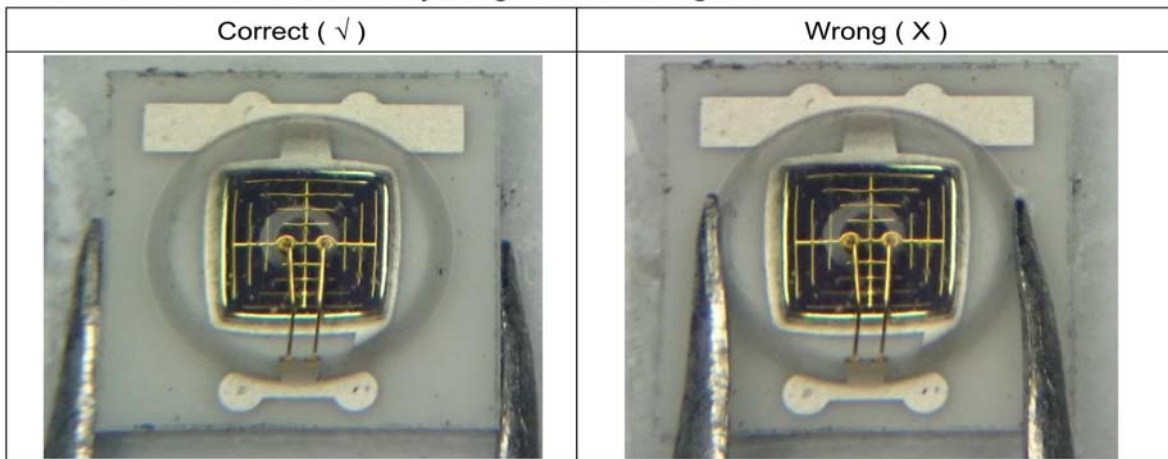
1. Recommendation for using LEDs

- 1.1 The LEDs should not be exposed to dust or debris. Excessive dust and debris may cause a drastic decrease in the luminosity.
- 1.2 Avoid mechanical stress on the LED surface.
- 1.3 Do not touch the LED surface. It would affect the optical performance of the LED due to the damage of LED.
- 1.4 Pick & place tools are recommended for the remove of LEDs from the factory tape & reel packaging

2. Package handling

Please follow the guideline to pick LEDs.

- 2.1 Use tweezers to pick LEDs.
- 2.2 Do not touch the surface by using tweezers & fingers.



3. Surface cleaning

In the case which a small amount of dirt and dust particles remain on the surface, a suitable cleaning solution can be applied.

- 3.1 Try a gentle wiping with dust-free cloth.
- 3.2 If needed, use dust-free cloth and isopropyl alcohol to gently clean the dirt from the lens surface.
- 3.3 Do not use other solvents as they may directly react with the LED assembly.
- 3.4 Do not use ultrasonic cleaning which will damage the LEDs.

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4. Carrier tape handling

The following items are recommended when handling the carrier tape of LEDs.

- 4.1 Do not twist the carrier tape.
- 4.2 The inward bending diameter should not be smaller than 6cm for each carrier tape.
- 4.3 Do not bend the tape outward.



5. Storage

5.1 The moisture-proof bag is sealed :

The LEDs should be stored at 30°C or less and 90%RH or less. And the LEDs are limited to use within one year, while the LEDs is packed in moisture-proof package with the desiccants inside.

5.2 The moisture-proof bag is opened :

The LEDs should be stored at 30°C or less and 60%RH or less. Moreover, the LEDs are limited to solder process within 168hrs. If the humidity indicator card shows the pink color in 10% even higher or exceed the storage limiting time since opened, that we recommended to baking LEDs at 60°C at least 24hrs. To seal the remainder LEDs return to the moisture-proof bag, it's recommended to be with workable desiccants.

