

C3737DUVC-QBH-D

3.7×3.7mm, Deep UV LED

Surface Mount Sterilization LED

Technical Data Sheet

Features:

- High optical output power
- Long life and low light attenuation
- Environmental protection, energy saving and high reliability
- Durable, shock-proof, easy to design, suitable for multifield applications
- Built-in UVC wavelength chip, unique design and application more widely

Applications:

- Disinfection Sterilization.
- Ozone generator.
- QA equipment.
- Ultraviolet detection、communication technology
- Air sterilization, water sterilization
- Medical treatment and skin disease treatment

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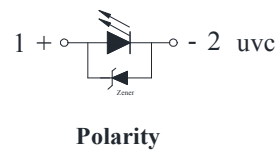
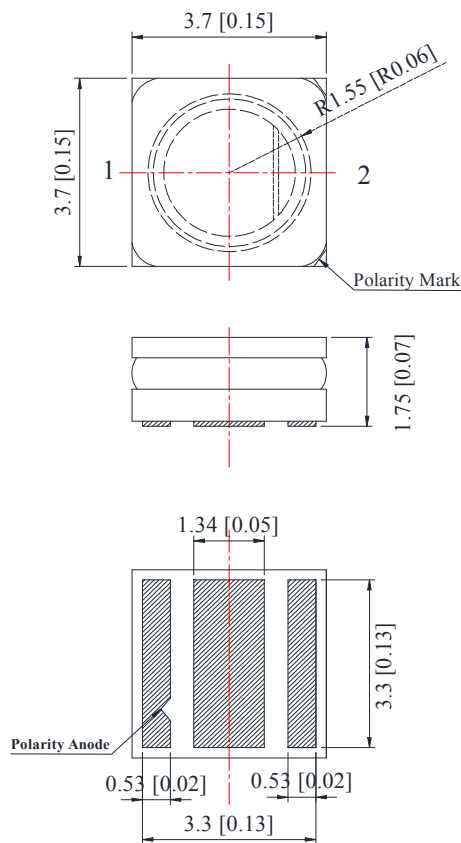
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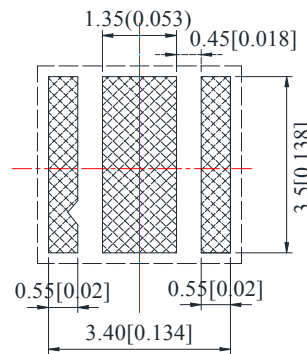
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| Part No. | Emitting Color | Lens Color |
|-----------------|----------------|--------------|
| C3737DUVC-QBH-D | Deep UV | Quartz glass |

Package Dimension:



Recommended Soldering Pad Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010") unless otherwise noted.

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Absolute Maximum Ratings at Ta=25°C

| Parameters | Symbol | Max. | Unit |
|-------------------------------------|-----------|---------------------|------|
| Power Dissipation | P_d | 1 | W |
| Peak Forward Current ^(a) | I_{FP} | 120 | mA |
| DC Forward Current | I_F | 100 | mA |
| Junction Temperature | T_a | 90 | °C |
| Operating Temperature Range | T_{opr} | -40°C to +85°C | |
| Storage Temperature Range | T_{stg} | -40°C to +85°C | |
| Soldering Temperature | T_{sld} | 260°C for 5 Seconds | |

Notes:

a. Duty Factor = 10%, Frequency = 1 kHz.

Electrical Optical Characteristics at Ta=25°C

| Parameters | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|--------------------------------------|-----------------|------|------|------|------|----------------|
| Radiant flux | Φ_e | 8 | 15 | --- | mW | IF=100mA |
| Viewing Angle | $2\theta_{1/2}$ | --- | 120 | --- | Deg | IF=100mA |
| Peak Emission Wavelength | λ_p | 270 | 275 | 280 | nm | IF=100mA |
| Spectral Line Half-Width | $\Delta\lambda$ | --- | 10 | --- | nm | IF=100mA |
| Thermal Resistance Junction To Board | $R\theta_{J-B}$ | --- | 10 | --- | °C/W | IF=100mA |
| Forward Voltage | V_F | 5.5 | --- | 7.0 | V | IF=100mA |
| Reverse Current | I_R | --- | --- | 10 | μA | VR=5V |

Notes:

a. Luminous flux measurement tolerance: ±10%.

b. Wavelength measurement tolerance: ±1nm

c. Forward voltage measurement tolerance: ±0.1V

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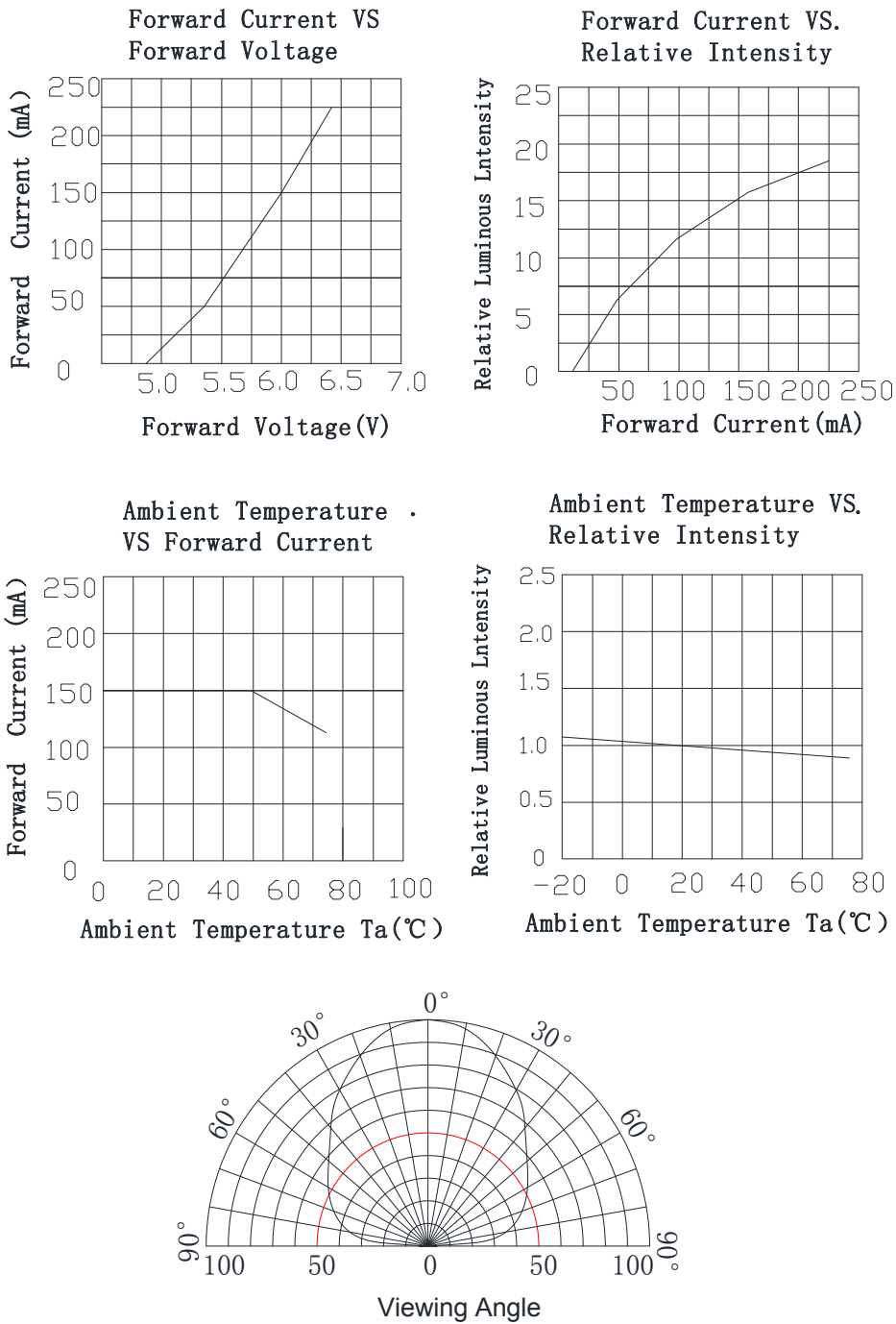
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Typical Electrical / Optical Characteristics Curves (25°C Ambient Temperature Unless Otherwise Noted)



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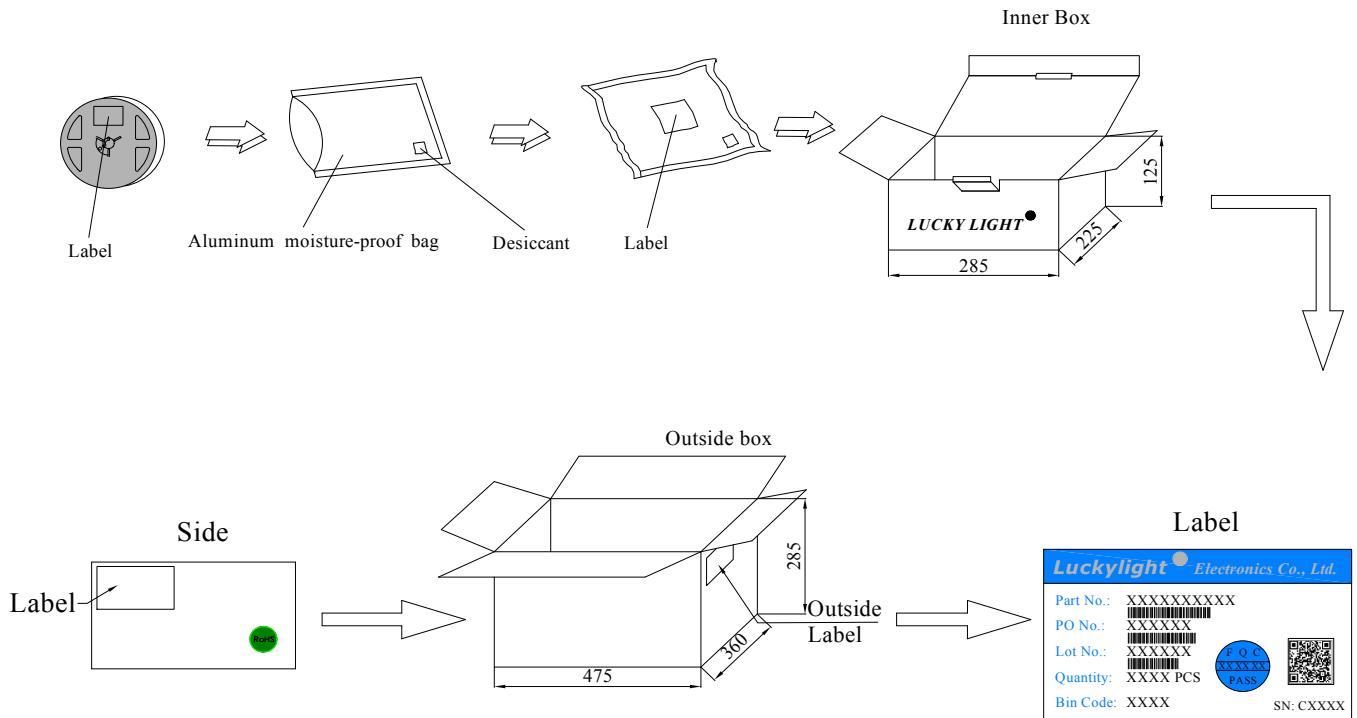
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Packing & Label Specifications:

Moisture Resistant Packaging:



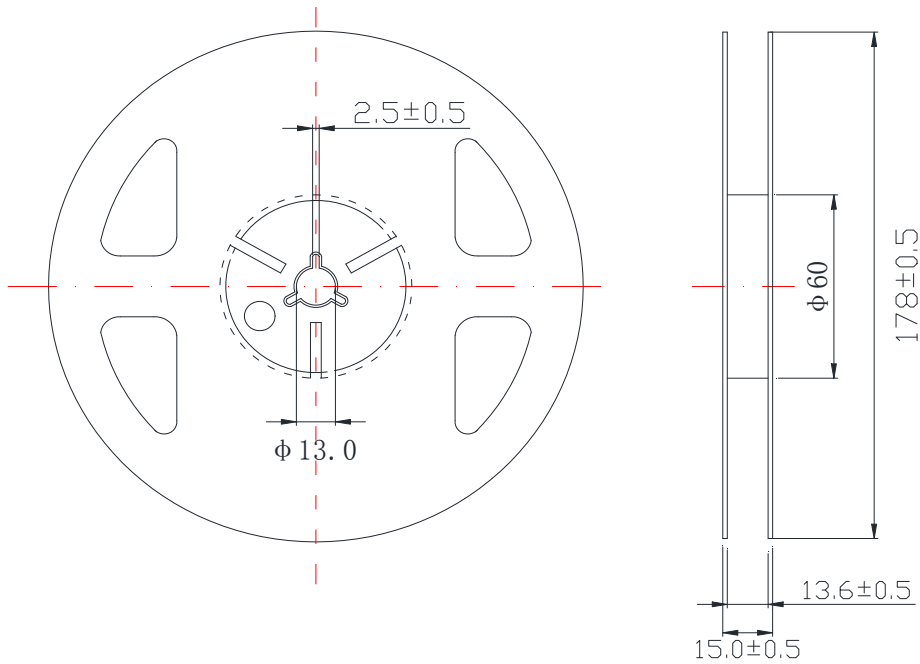
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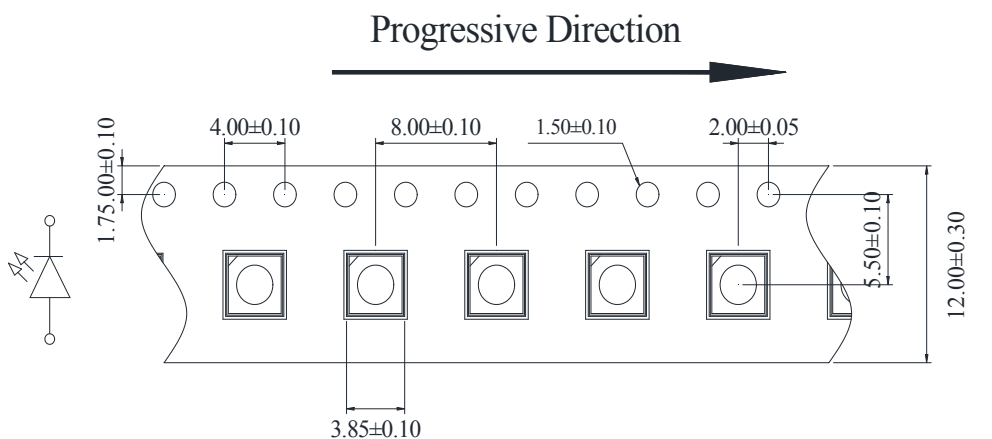
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Reel Dimensions:



Carrier Tape Dimensions:

Loaded quantity 1000 PCS per reel.

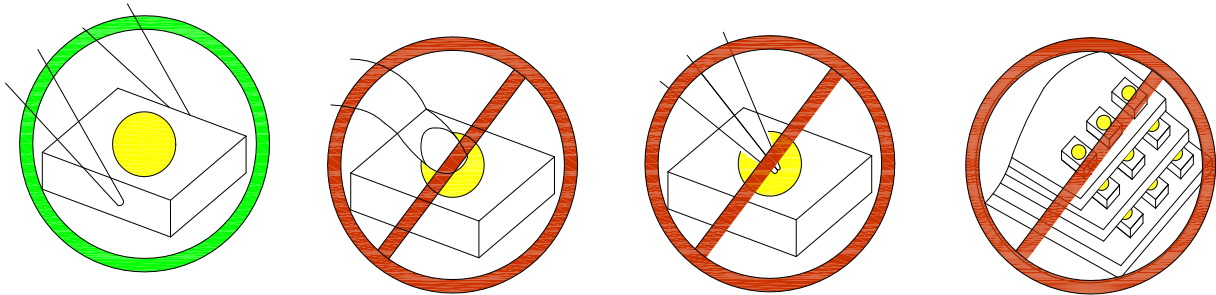


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CAUTIONS

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.



- 1.4 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.

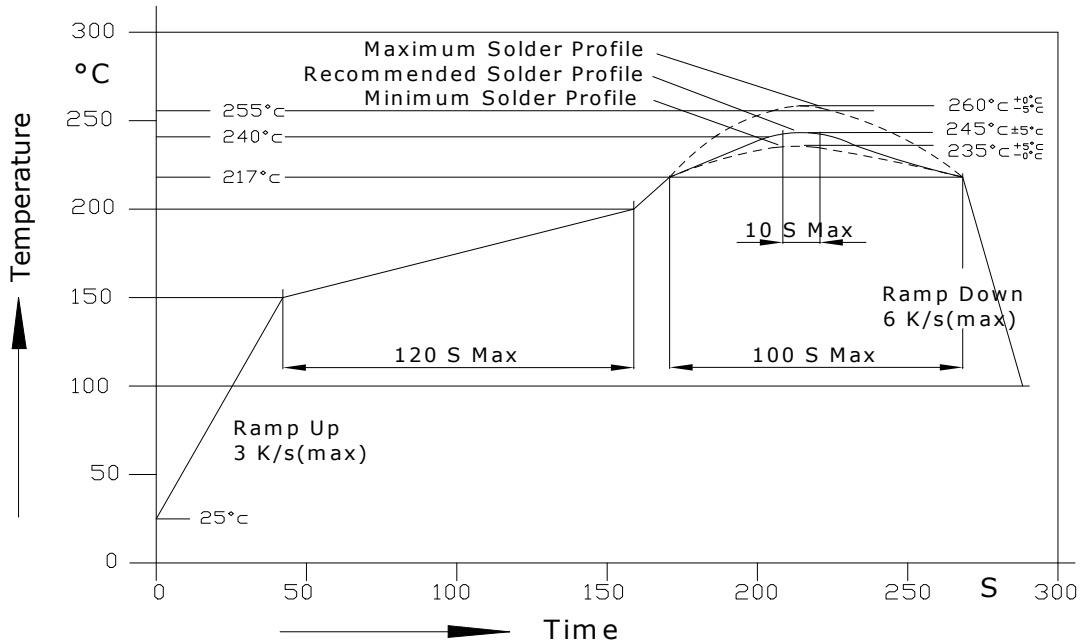
2. Storage:

- 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.

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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.

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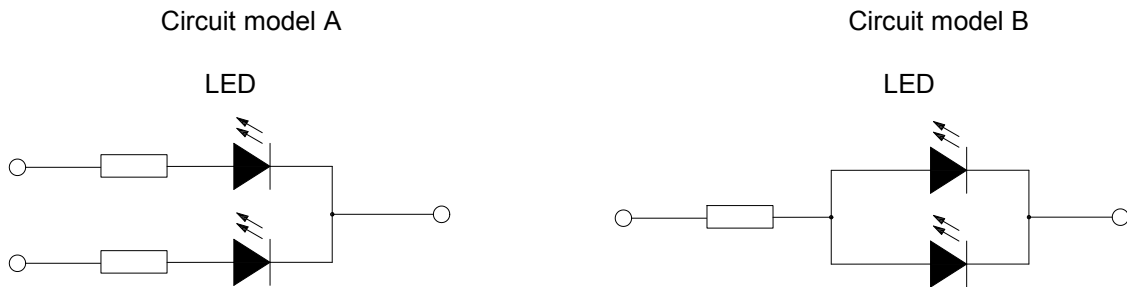
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4. Drive Method:

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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