

Specification For UV-C Series

BRT-B44DD7C1CS0



Features

- Deep Ultraviolet LED
- Dimension : 4.4mm(L)×4.4mm(W)
- All Metal Design Cu Substrate/Al reflector
- View Angle 30°
- Low thermal resistance

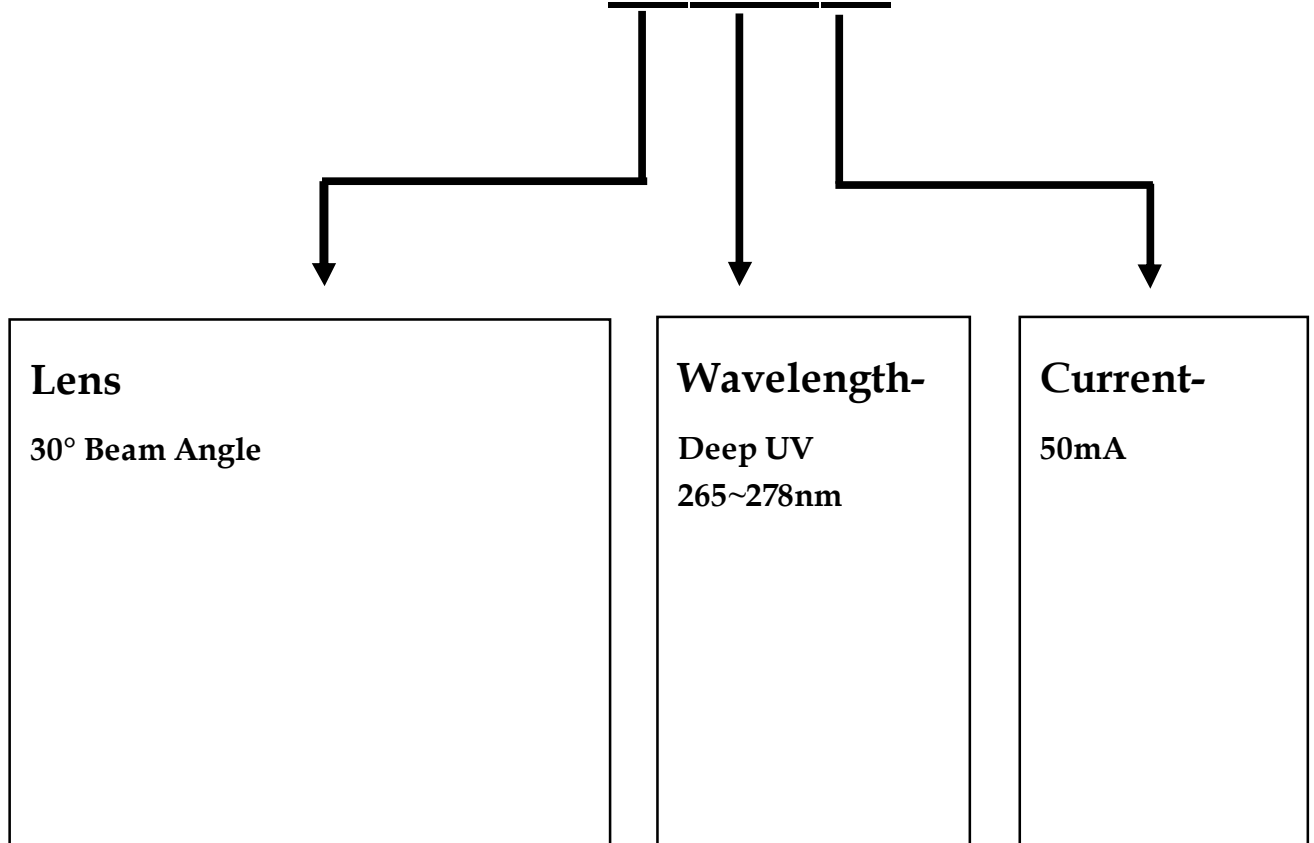
Applications

- Disinfection
- Chemical and Biological analysis

RoHS
Compliant

General Information

BRT - B44DD7C1CS0





Do not poke the Led Lens
with sharp object



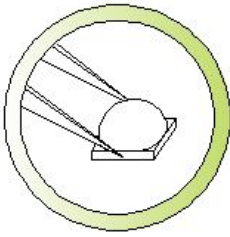
Do not stack
assembled PCB



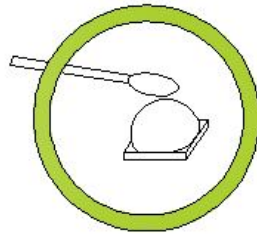
Do not hold the Led
with hand



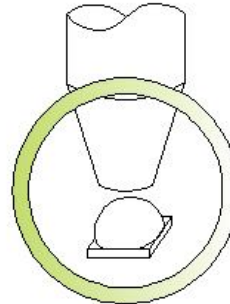
Do not press or push
the Led Lens



Hold the Led only by
the substrate



Clean the LED surface
with cotton bud



Use pick and place nozzle per
recommendation in data sheet

Absolute Maximum Ratings

(T_j=25°C)

| Parameter | Symbol | Value | Unit |
|-----------------------------------|-----------------------|---------------------|------|
| Power Dissipation | P | 0.45 | W |
| Forward Current | I _F | 50 | mA |
| Thermal Resistance, Junction-Case | R _{th, J-C1} | 15 | °C/W |
| Operating Temperature Range | T _{opr} | - 40°C to + 60°C | |
| Storage Temperature Range | T _{stg} | - 40°C to + 100°C | |
| Soldering Condition | T _{sol} | 260°C For 5 Seconds | |

Note: 1. The thermal resistance value is measured with MCPCB (Star).

Initial Electrical/Optical Characteristics

(T_j=25°C)

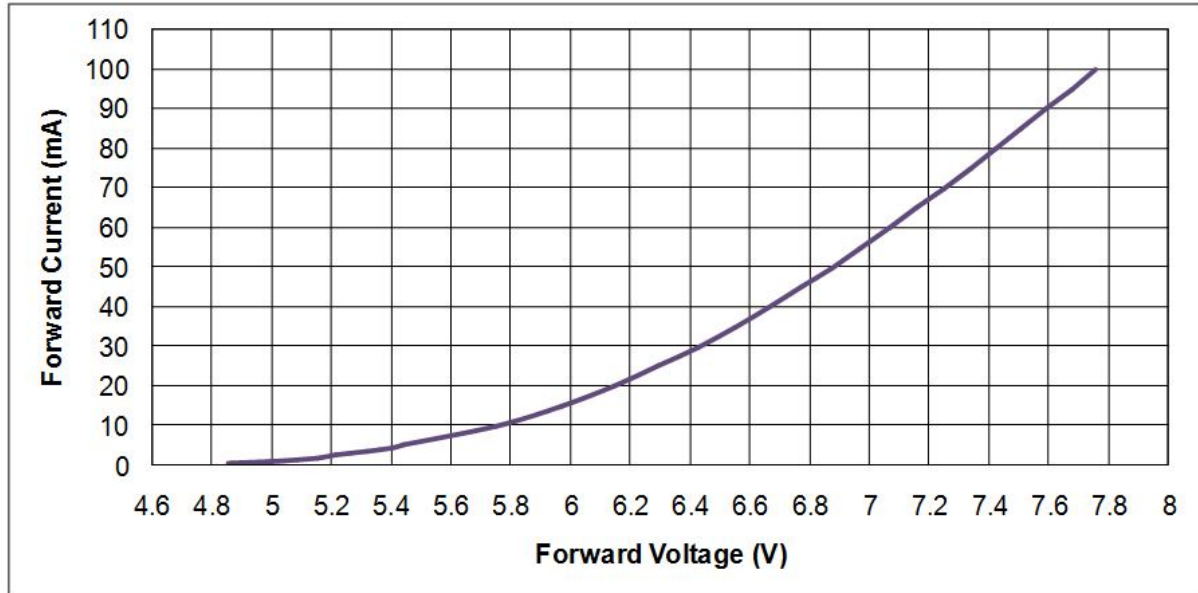
| Parameter | Symbol | Min | Typ | Max | Test Condition | Unit |
|--------------------|----------------|-----|-----|-----|-----------------------|--------------------|
| Peak wavelength | λ _p | 265 | - | 278 | I _F = 50mA | nm |
| Radiant Flux | Φ _e | 2.5 | 4 | - | | mW |
| Radiant Irradiance | E _e | - | 9 | - | | mW/cm ² |
| Forward Voltage | V _F | 5 | 6 | 9 | | V |
| Spectra half-width | Δλ | - | 15 | - | | nm |

Note

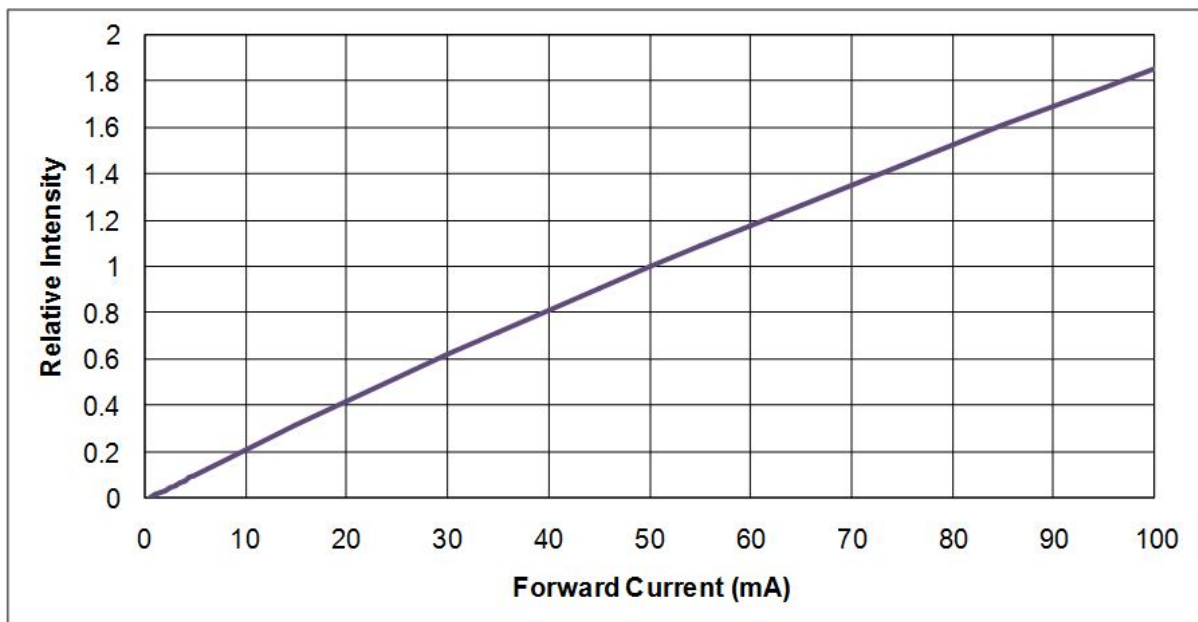
1. Forward voltage measurement allowance is ± 0.2V.
2. Radiant flux measurement allowance is ± 10%.
3. Irradiance tested at a distance 10mm from lens top.
4. Wavelength measurement allowance is ± 3nm.

Characteristic Diagram

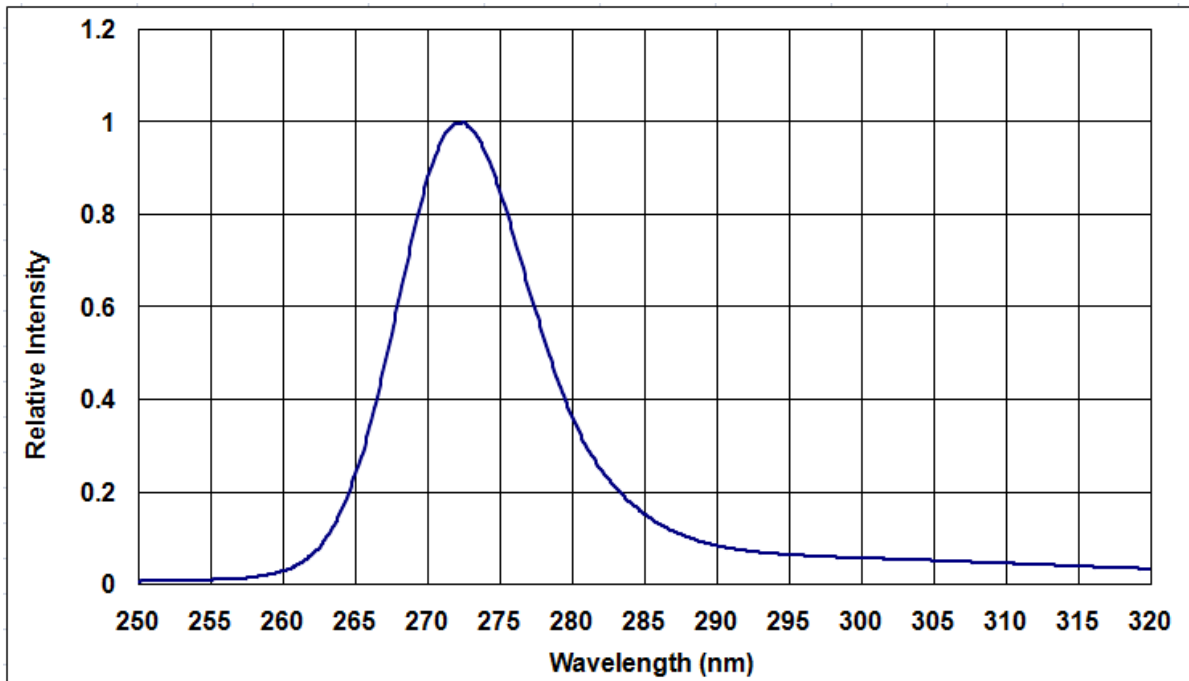
- Forward Current vs. Forward Voltage



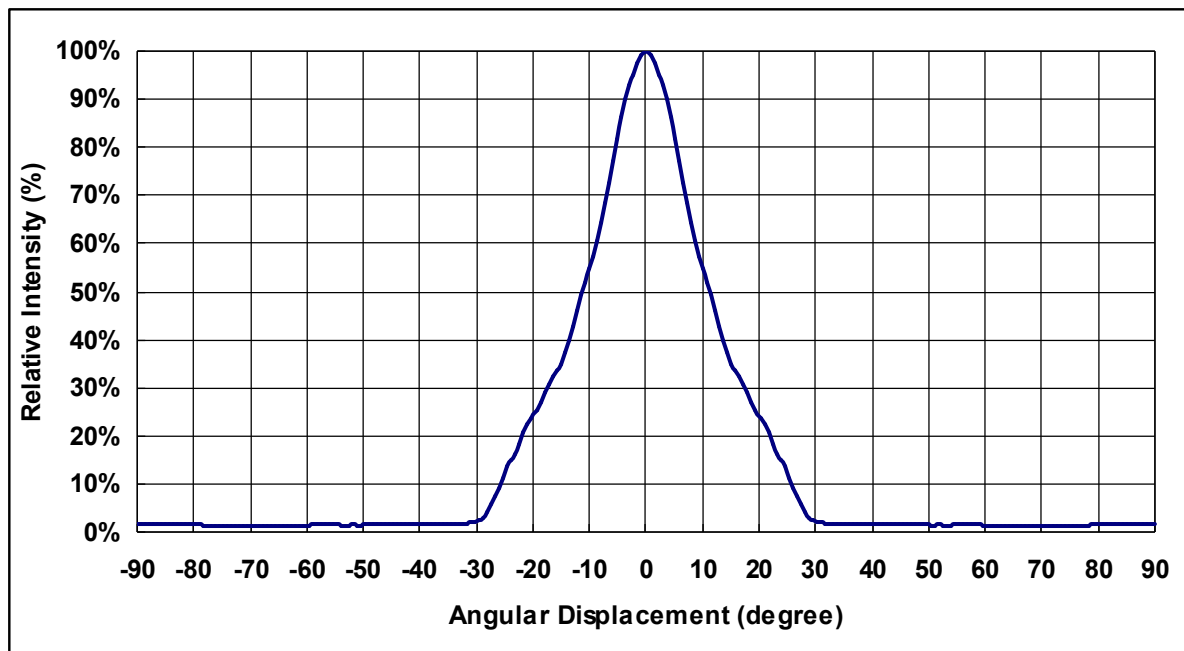
- Relative Intensity vs. Forward Current



- **Spectral Power Distribution**



- **Typical Radiation Pattern**



● Bin Code List for Reference

(Tj=25°C)

| Item | Bin code | Symbol | Condition | Min. | Max. | Unit |
|-----------------|----------|----------|---------------|------|------|------|
| Forward Voltage | E0 | V_F | $I_F=50$ [mA] | 5 | 5.5 | V |
| | E5 | | | 5.5 | 6 | |
| | F0 | | | 6 | 6.5 | |
| | F5 | | | 6.5 | 7 | |
| | G0 | | | 7 | 7.5 | |
| | G5 | | | 7.5 | 8 | |
| | H0 | | | 8 | 8.5 | |
| | H5 | | | 8.5 | 9 | |
| Radiant Flux | A25 | Φ_e | $I_F=50$ [mA] | 2.5 | 6.5 | mW |

※ Rank name : E5A25

➤ Forward Voltage = E5

➤ Radiant Flux = A25

Outline Dimension

B44DD7C1CS0

Unit : mm

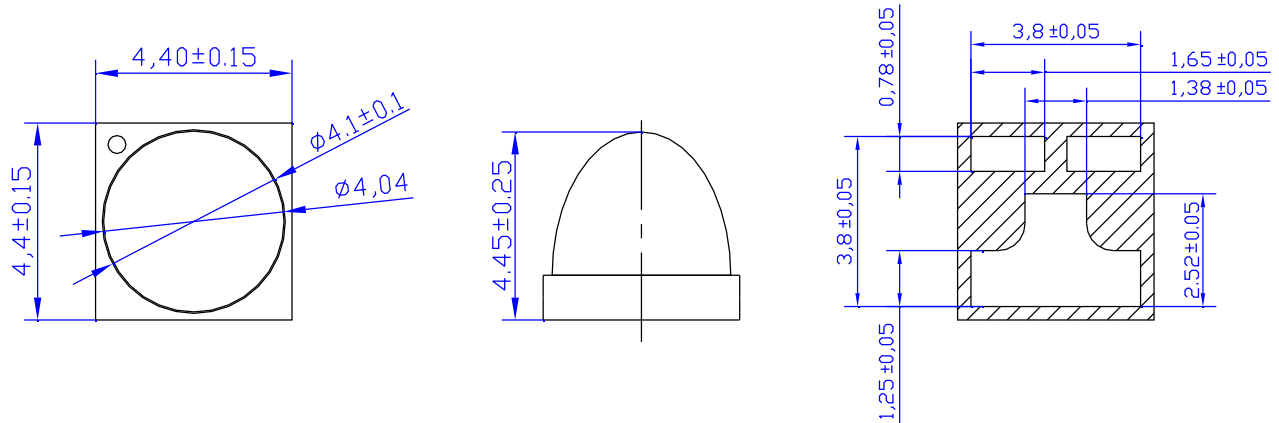
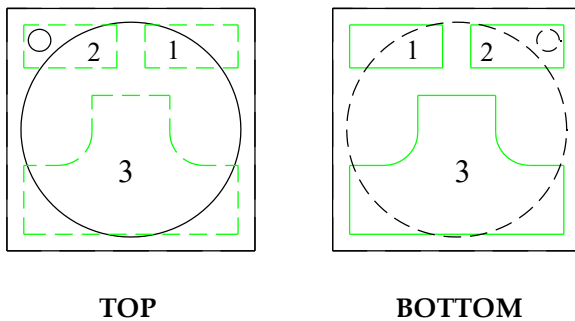


Fig. Package Outline Drawing.

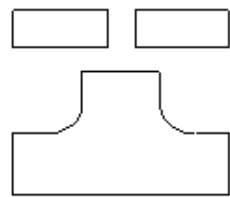
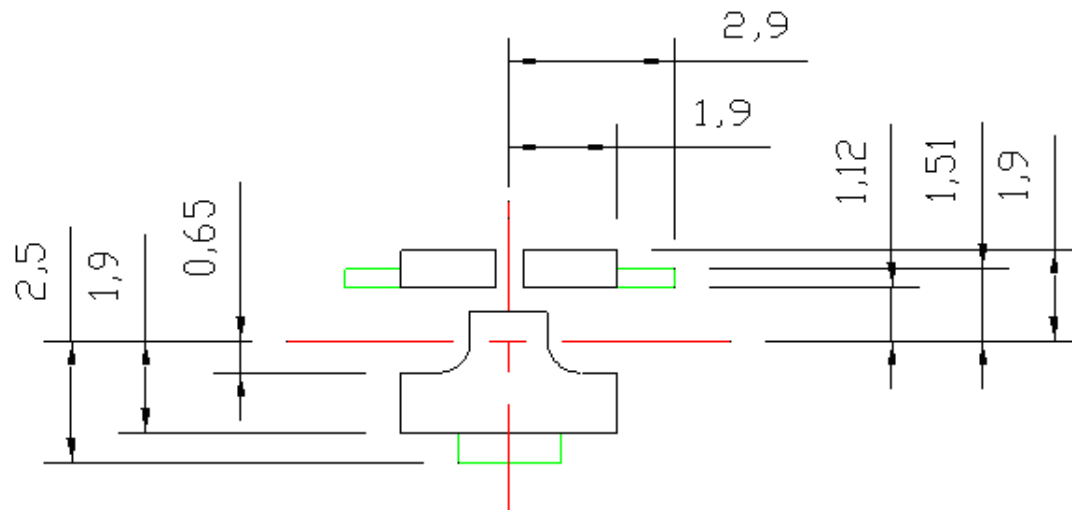
Pad Configuration



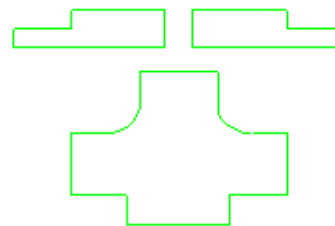
| PAD | Function |
|-----|----------|
| 1 | Cathode |
| 2 | Anode |
| 3 | Thermal |

Fig. Pad configuration.

Recommended Solder Pattern



**SOLDER
MASK**



**COPPER
LAYER**

Fig. Solder Pad Layout.

Shipping Package Style

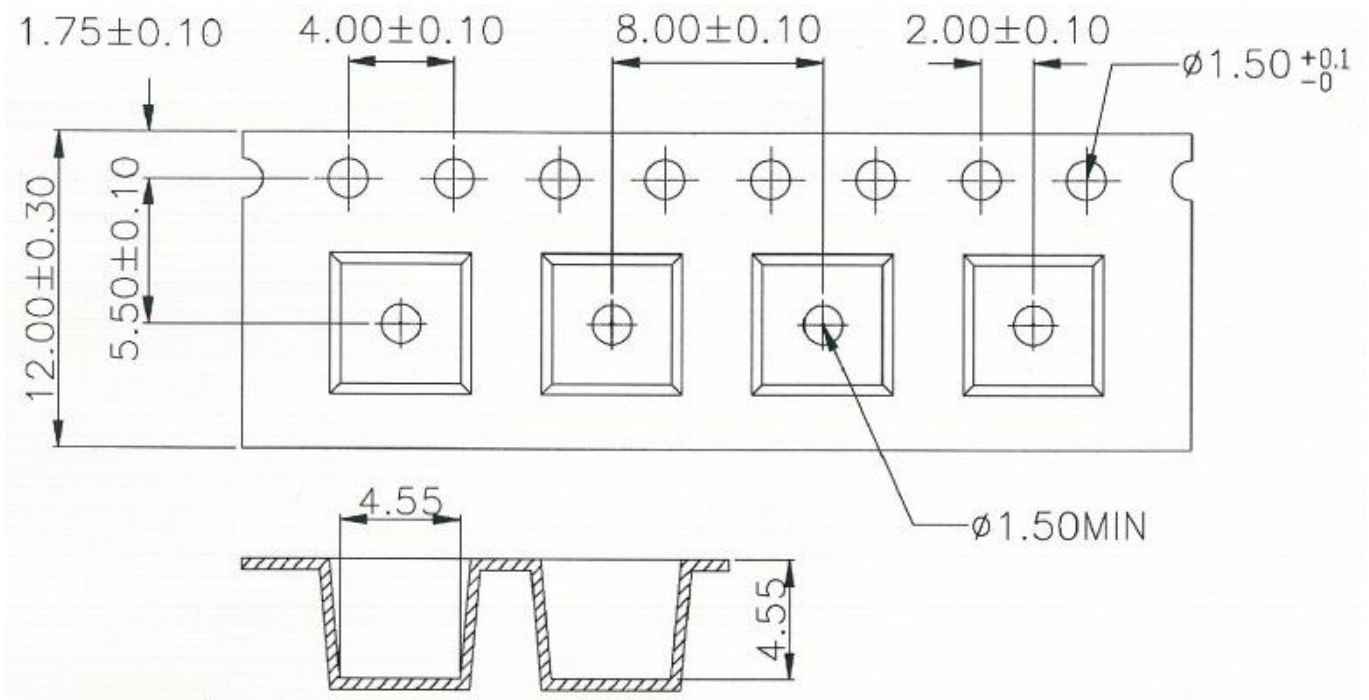
Lens Type

Tapping Dimension Packaging Specification

30 Degree Lens Type :

- Moisture proof bag.
- 1 Reel/bag.
- Q'ty: 500 (MAX)/Reel.

Unit : mm



Label Formation

| | |
|--------------------|----------------------|
| P/N: XXXXXXXXXXXXX | BIN Rank : XXXXXXXXX |
| LOT: XXXXXXXXXXXXX | Q'ty : XXXX PCS XXX |

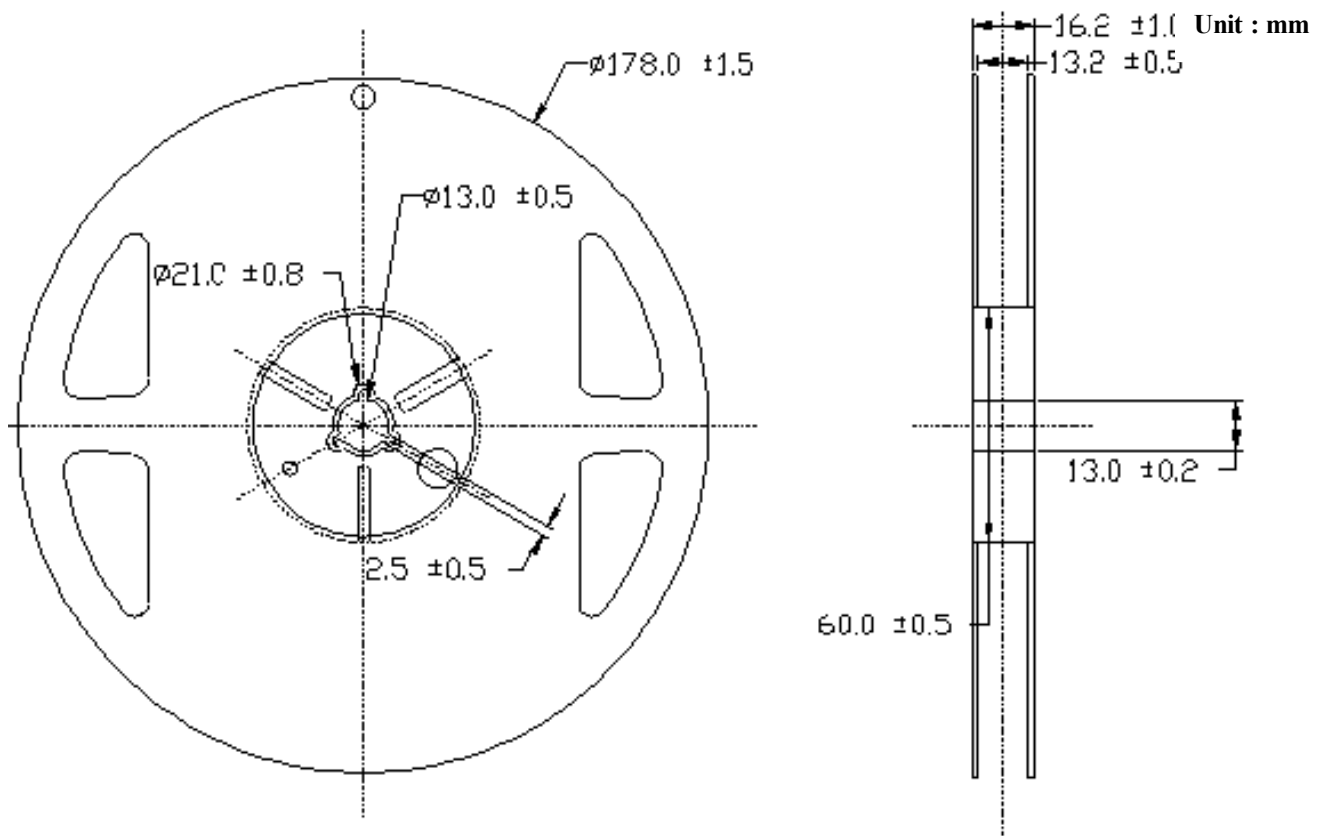
75mm*8mm

Package

| Box Type | Dimension (mm) | Reel/Box | 30°Lens Type(Pcs) |
|---------------|----------------|-------------|-------------------|
| Small Box(S) | 230x85x265 | 5 Reel/Box | 2500 |
| Middle Box(M) | 470x265x270 | 30 Reel/Box | 15000 |
| Large Box(L) | 470x435x270 | 50 Reel/Box | 25000 |

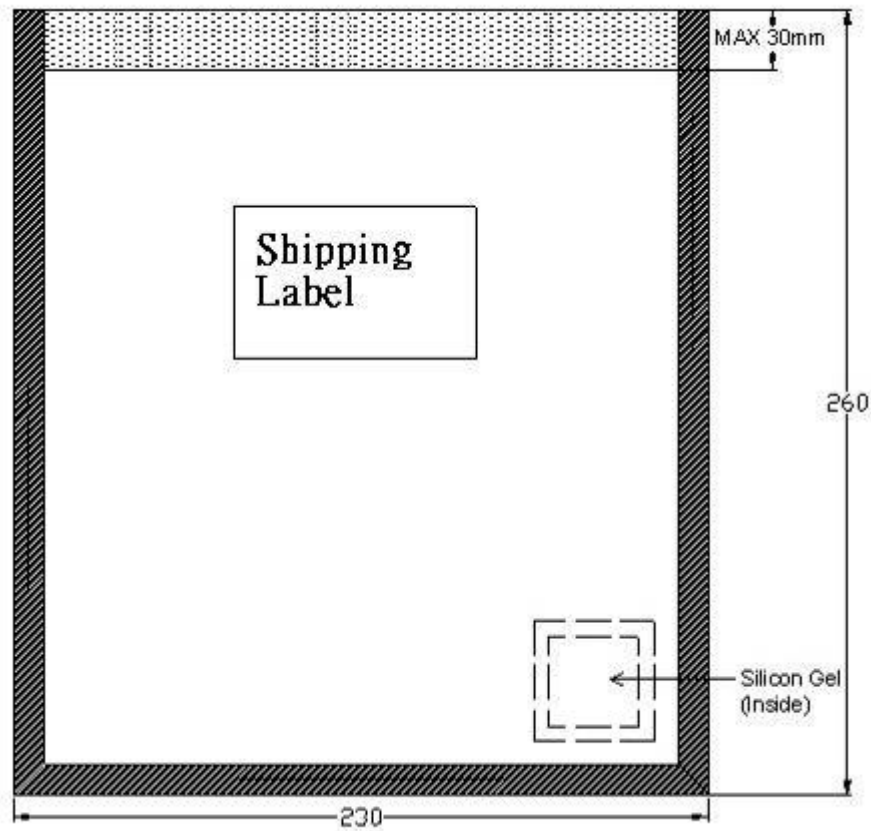
Reel Packaging :

Reel Part :



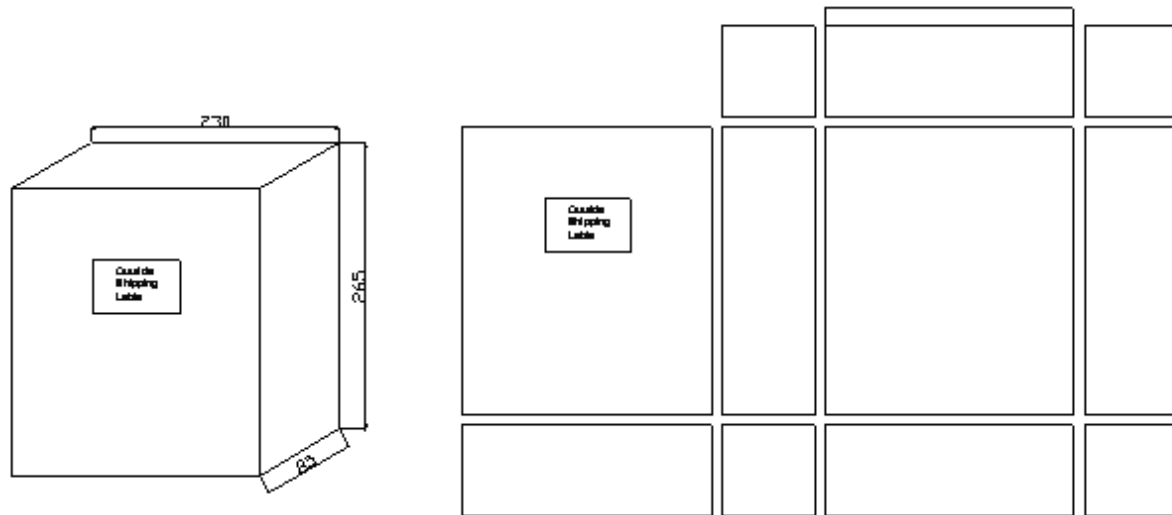
Anti Statistic Bag :

Unit : mm



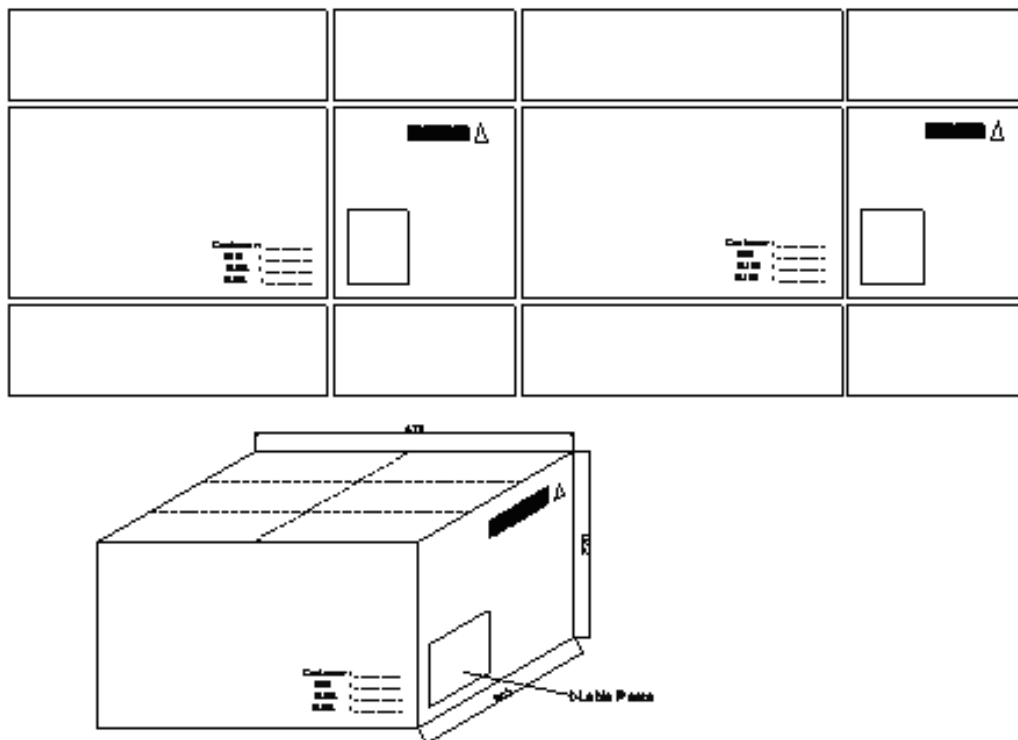
Small Box

Unit : mm



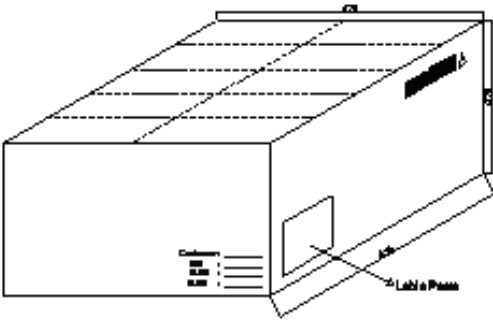
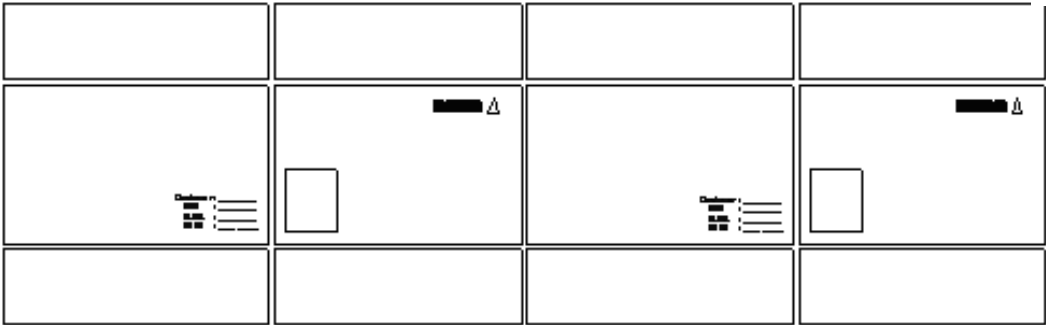
Middle Box

Unit : mm



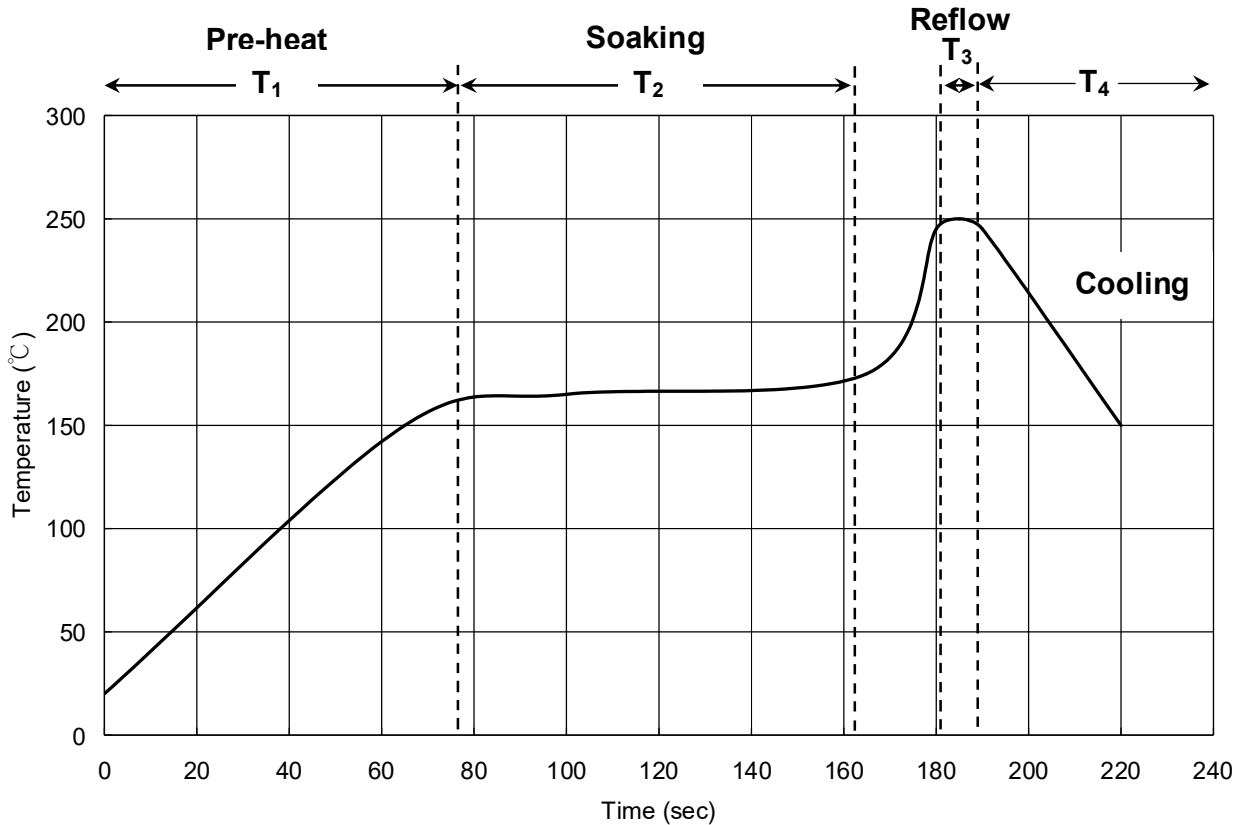
Large Box

Unit : mm



Recommended Solder Profile

Soldering Recommended soldering conditions:



| | | |
|----------------|----------------------------|-------------------|
| T ₁ | Ramp up rate | 1.0 ~ 3.0 °C /sec |
| | Pre-heat time | 50 ~ 80 sec |
| T ₂ | Soaking temperature | 155 ~ 185 °C |
| | Dwell time during soaking | 60 ~ 120 sec |
| T ₃ | Reflow temperature | 240 ~ 250 °C |
| | Reflow time | Max 10 sec |
| | Ramp up rate during reflow | 1.2 ~ 2.3 °C /sec |
| T ₄ | Cooling | 1.0 ~ 6.0 °C /sec |

Note: Suggest using Sn96Ag3Cu0.5 lead free solder.

Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary.

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