

# Specification For UV-C Series

**BRT-B44RD7B1CS0**



## Features

- Deep Ultraviolet LED
- Dimension : 4.4mm(L)×4.4mm(W)
- All Metal Design Cu Substrate/Al reflector
- View Angle 60°
- Low thermal resistance

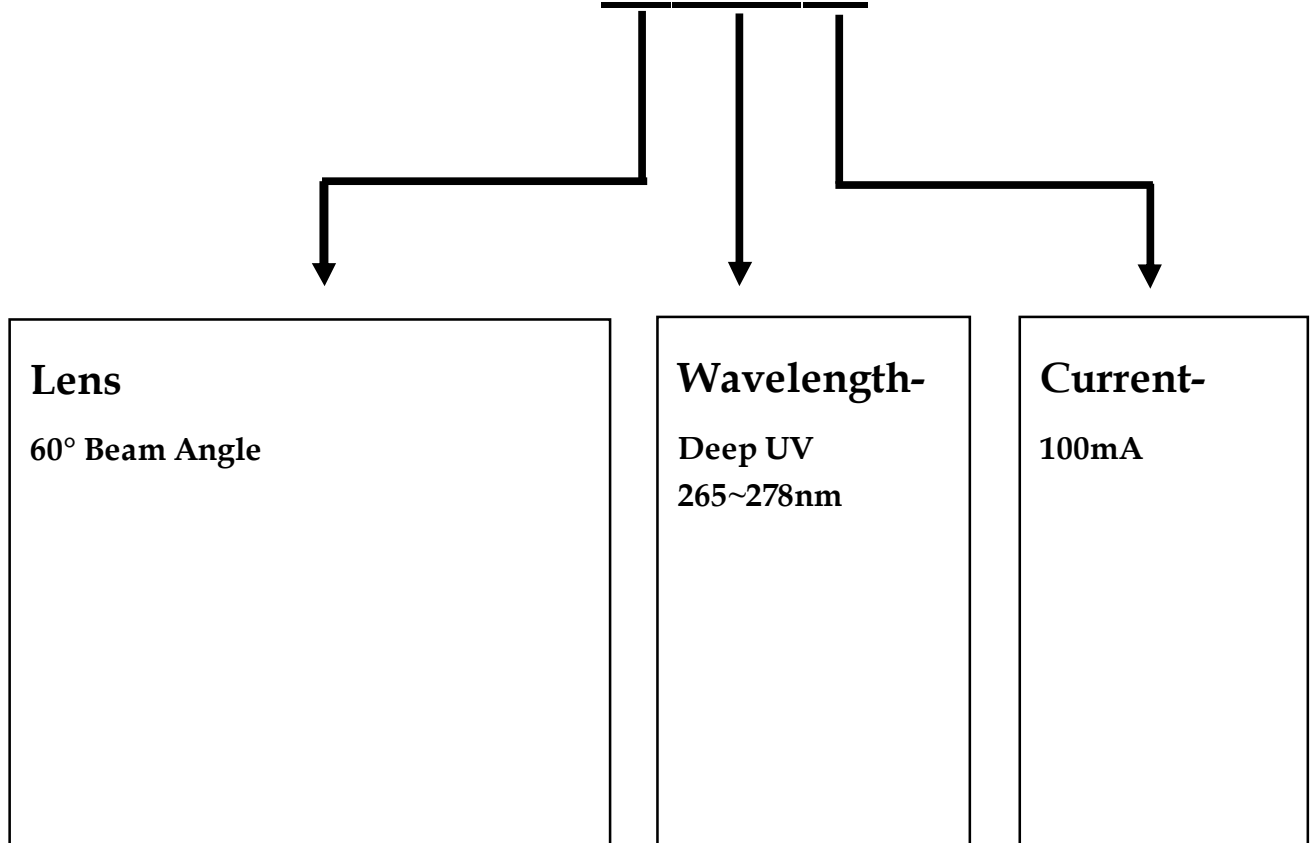
## Applications

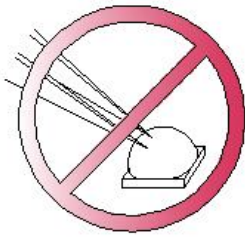
- Disinfection
- Chemical and Biological analysis

**RoHS**  
Compliant

General Information

# BRT - B44RD7B1CS0





Do not poke the Led Lens  
with sharp object



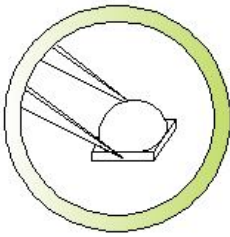
Do not stack  
assembled PCB



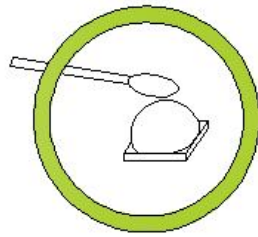
Do not hold the Led  
with hand



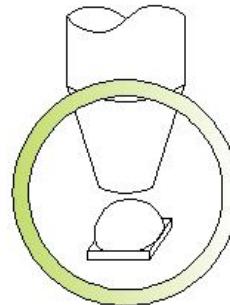
Do not press or push  
the Led Lens



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<sub>j</sub>=25°C)

Parameter	Symbol	Value	Unit
Power Dissipation	P	0.9	W
Forward Current	I <sub>F</sub>	100	mA
Thermal Resistance, Junction-Case	R <sub>th, J-C1</sub>	15	°C/W
Operating Temperature Range	T <sub>opr</sub>	- 40°C to + 60°C	
Storage Temperature Range	T <sub>stg</sub>	- 40°C to + 100°C	
Soldering Condition	T <sub>sol</sub>	260°C For 5 Seconds	

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

## Initial Electrical/Optical Characteristics

(T<sub>j</sub>=25°C)

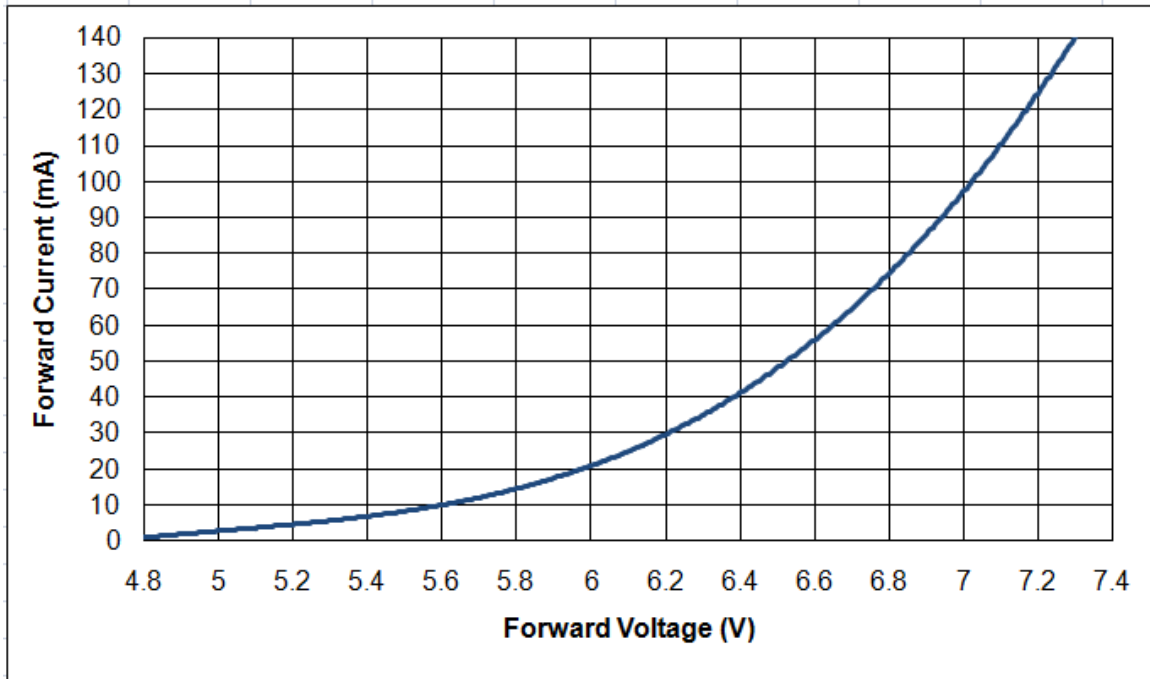
Parameter	Symbol	Min	Typ	Max	Test Condition	Unit
Peak wavelength	λ <sub>p</sub>	265	-	278	I <sub>F</sub> = 100mA	nm
Radiant Flux	Φ <sub>e</sub>	5	7.5	-		mW
Radiant Irradiance	E <sub>e</sub>	-	12	-		mW/cm <sup>2</sup>
Forward Voltage	V <sub>F</sub>	5	6.5	9		V
Spectra half-width	Δλ	-	15	-		nm

Note

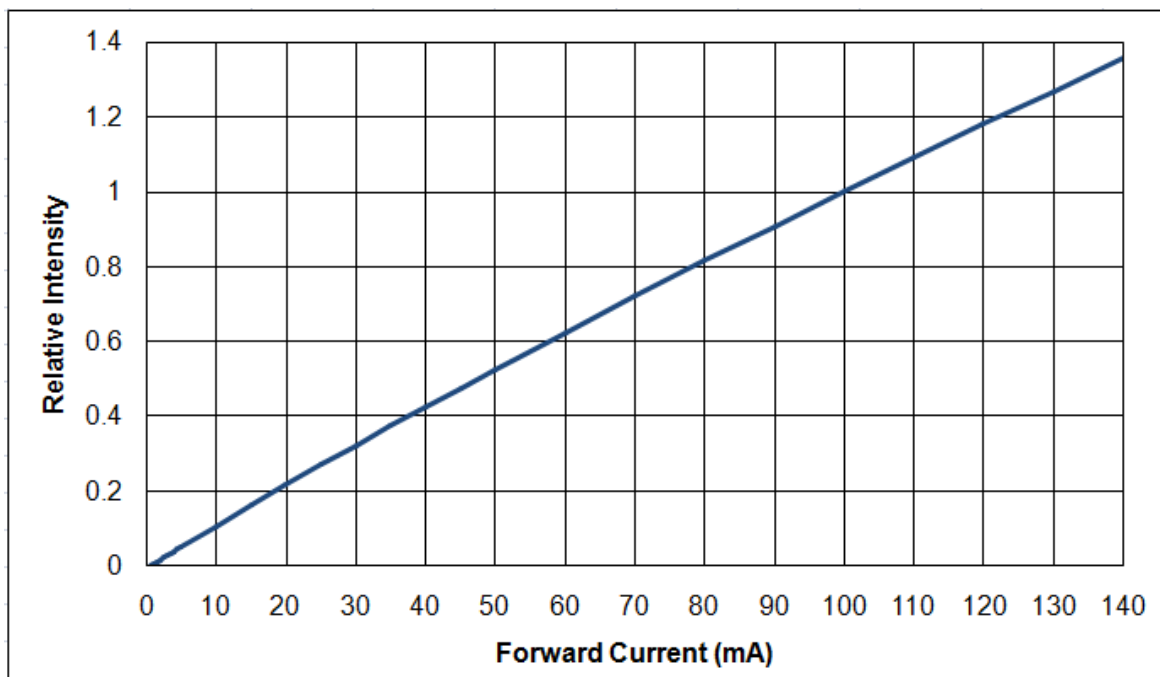
1. Forward voltage measurement allowance is ± 0.2V.
2. Radiant flux measurement allowance is ± 10%.
3. Irradiance tested at a distance 10mm from lens top.
4. Wavelength measurement allowance is ± 3nm.

## Characteristic Diagram

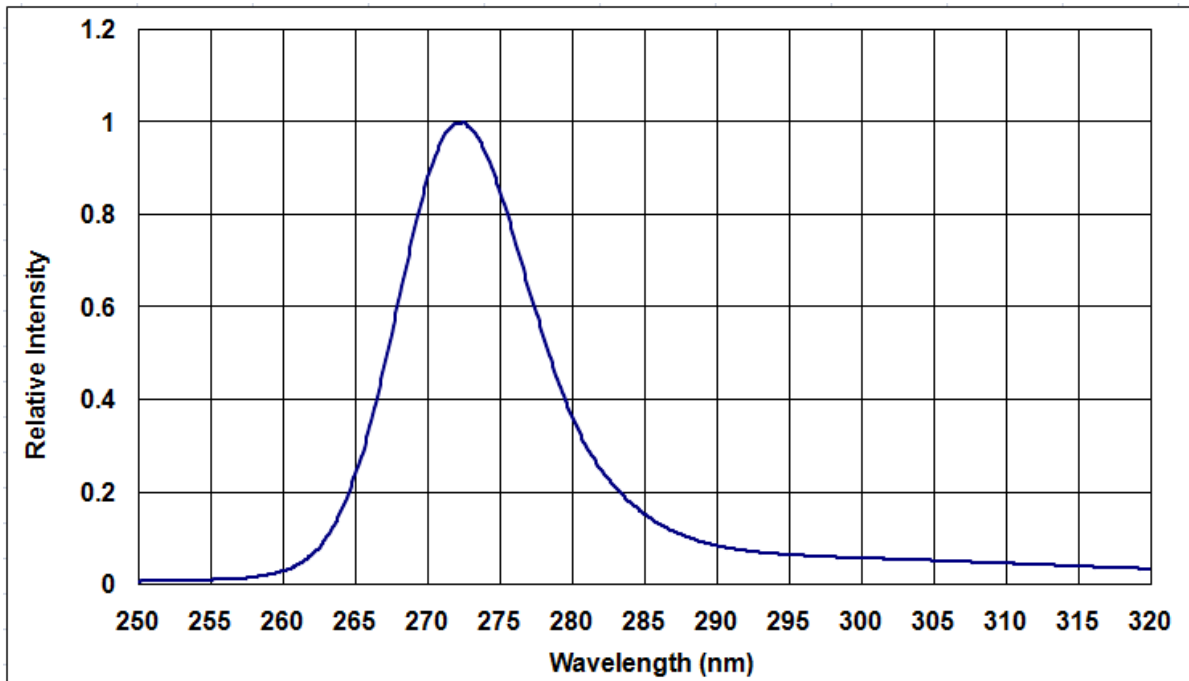
- Forward Current vs. Forward Voltage



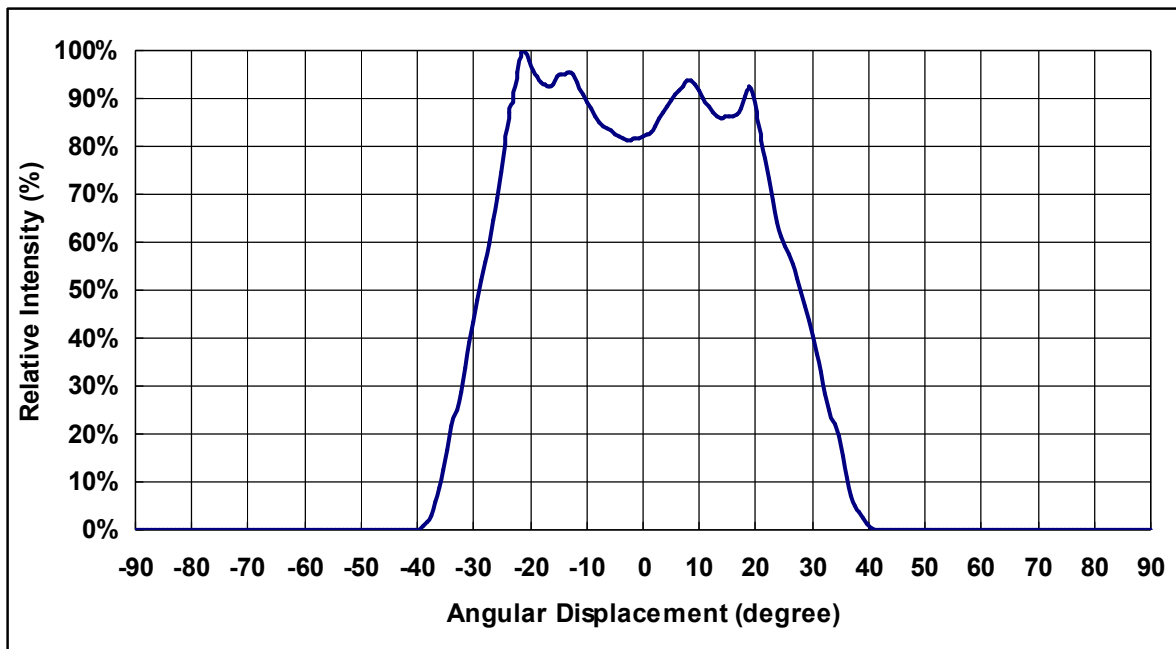
- Relative Intensity vs. Forward Current



- **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	$V_F$	$I_F=100$ [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	A50	$\Phi_e$	$I_F=100$ [mA]	5	12	mW

※ Rank name : F5A50

➤ Forward Voltage = F5

➤ Radiant Flux = A50

Outline Dimension

B44RD7B1CS0

Unit : mm

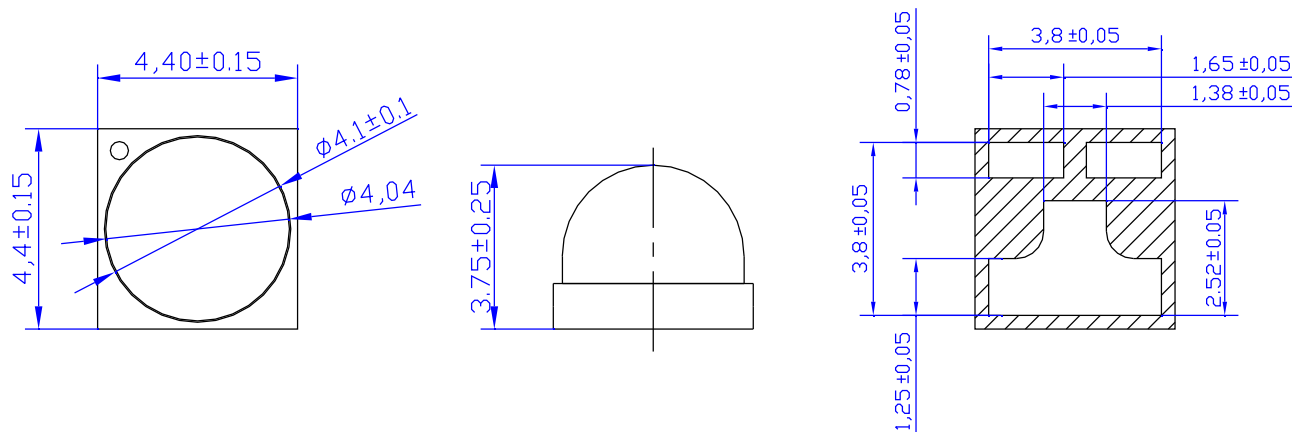


Fig. Package Outline Drawing.

Pad Configuration

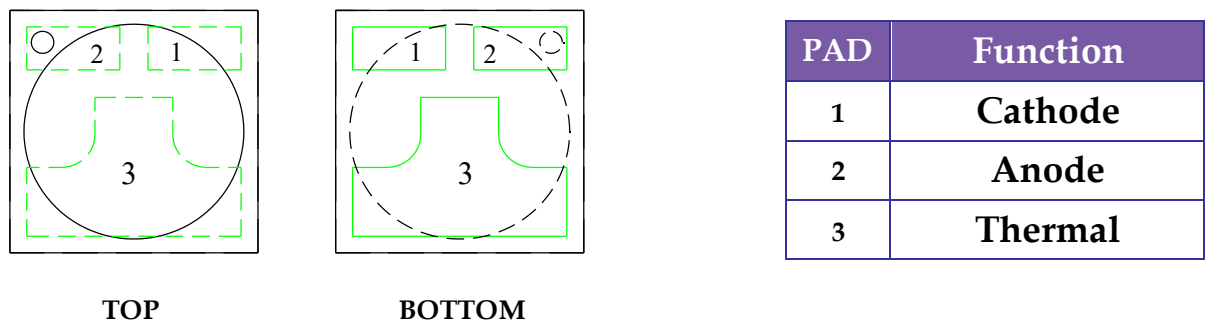
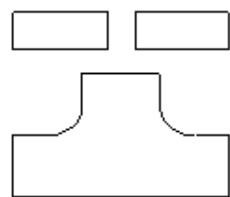
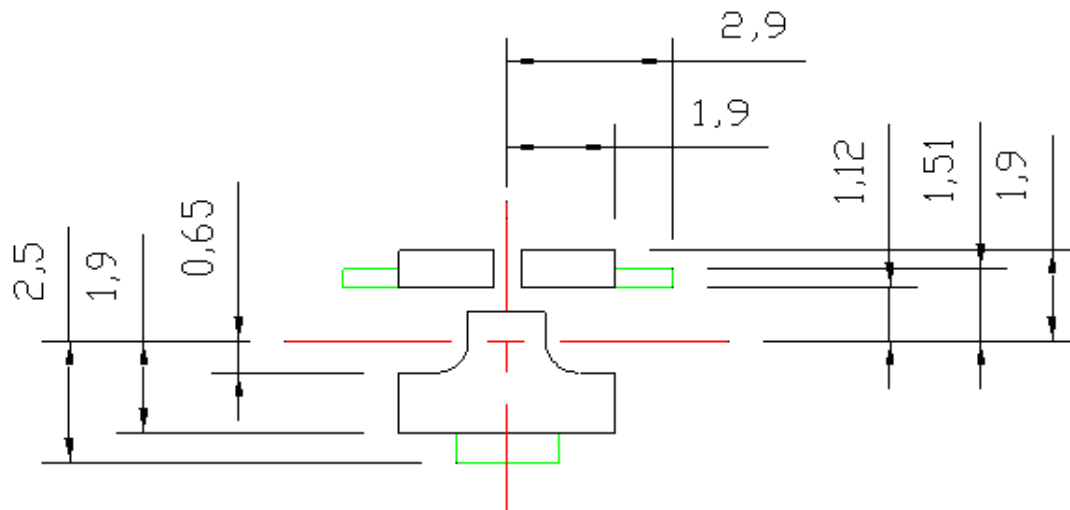


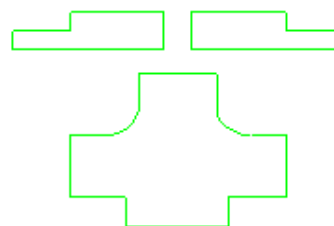
Fig. Pad configuration.



## Recommended Solder Pattern



**SOLDER  
MASK**



**COPPER  
LAYER**

Fig. Solder Pad Layout.

## Shipping Package Style

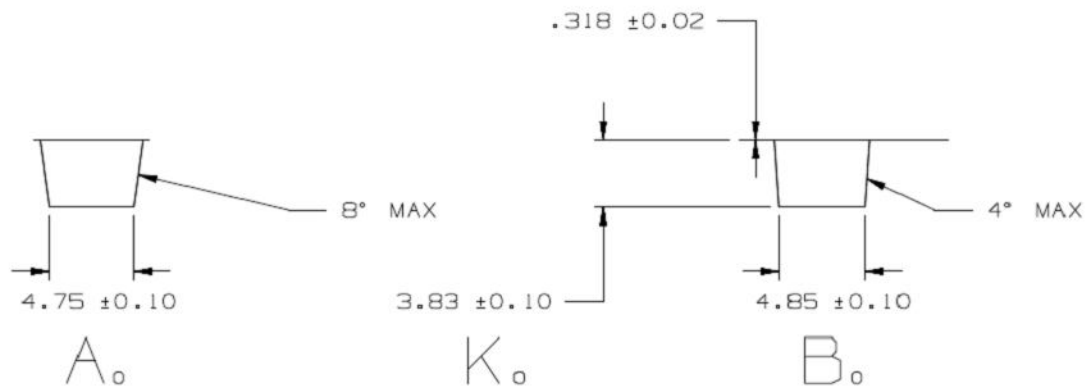
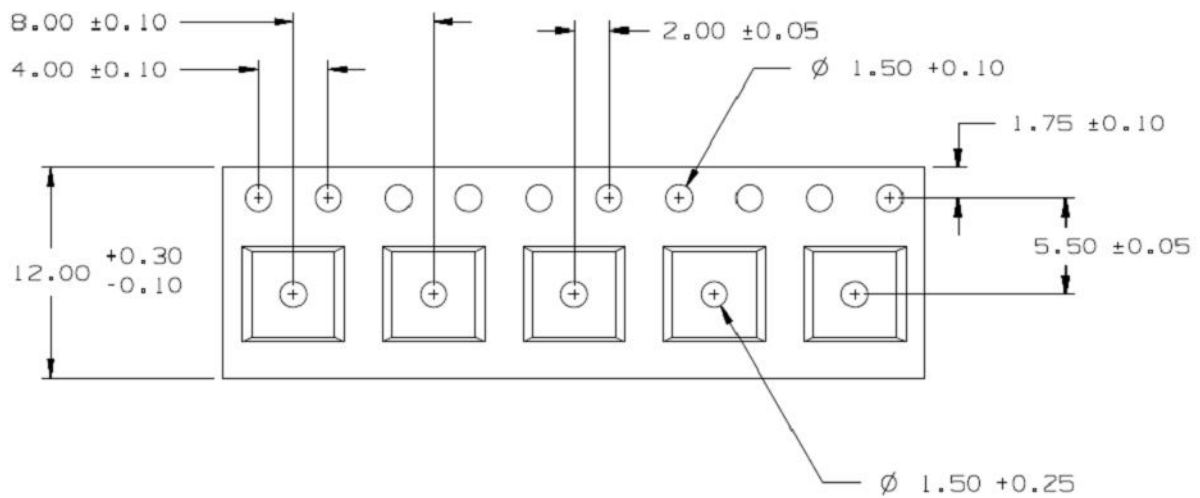
### Lens Type

#### Tapping Dimension Packaging Specification

##### 60 Degree Lens Type :

- Moisture proof bag.
- 1 Reel/bag.
- Q'ty: 650 (MAX)/Reel.

Unit : mm



## Label Formation

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

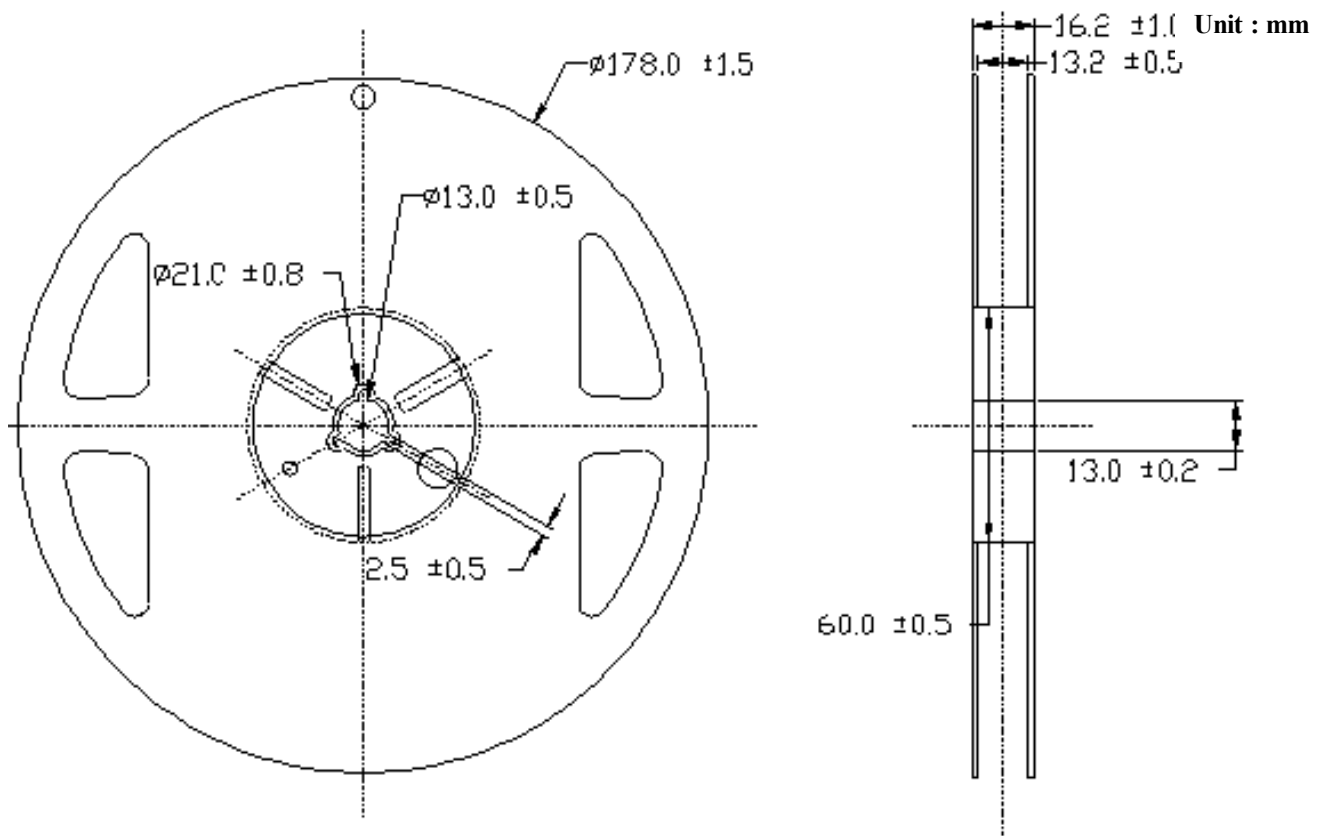
75mm\*8mm

## Package

Box Type	Dimension (mm)	Reel/Box	60°Lens Type(Pcs)
Small Box(S)	230x85x265	5 Reel/Box	3250
Middle Box(M)	470x265x270	30 Reel/Box	19500
Large Box(L)	470x435x270	50 Reel/Box	32500

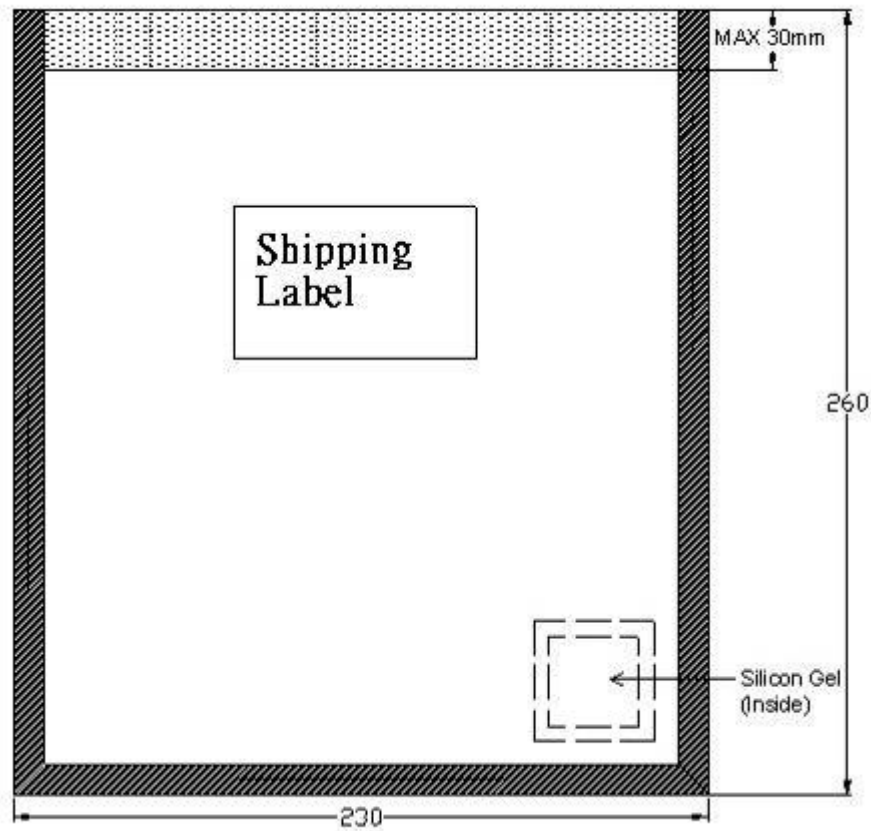
## Reel Packaging :

Reel Part :



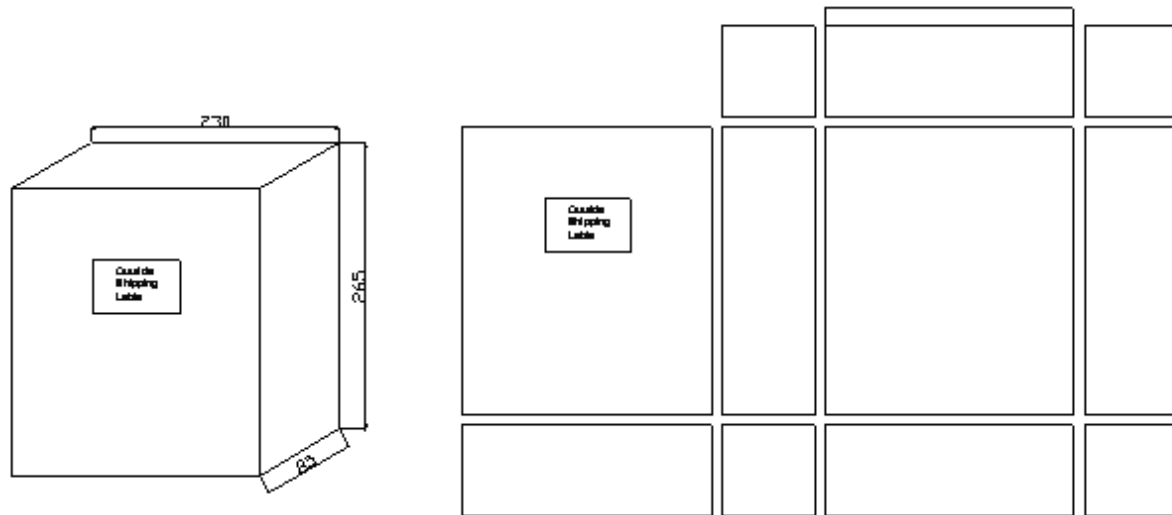
## Anti Statistic Bag :

Unit : mm



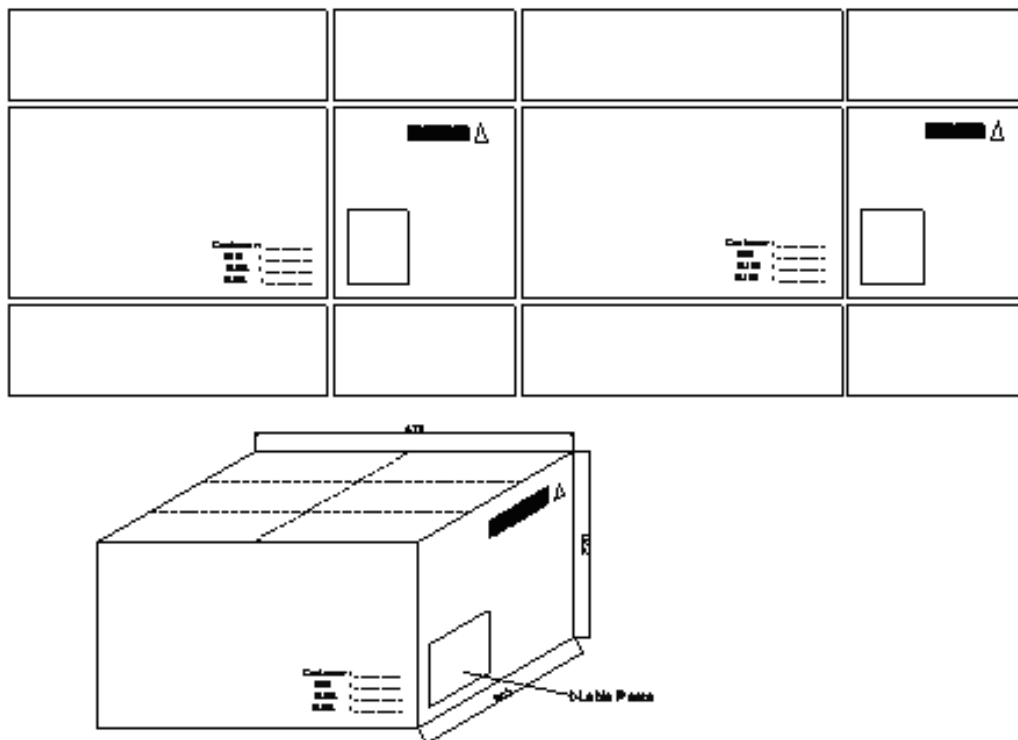
## Small Box

Unit : mm



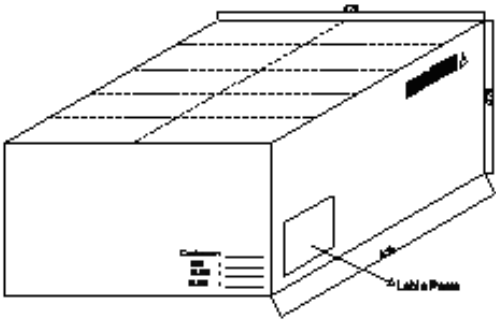
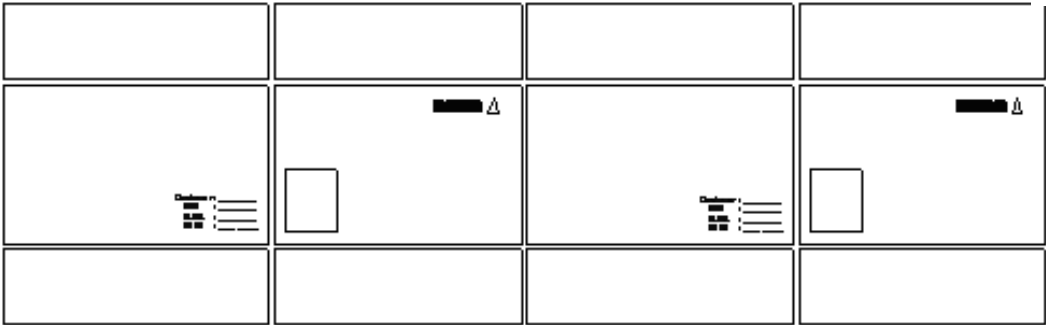
## Middle Box

Unit : mm



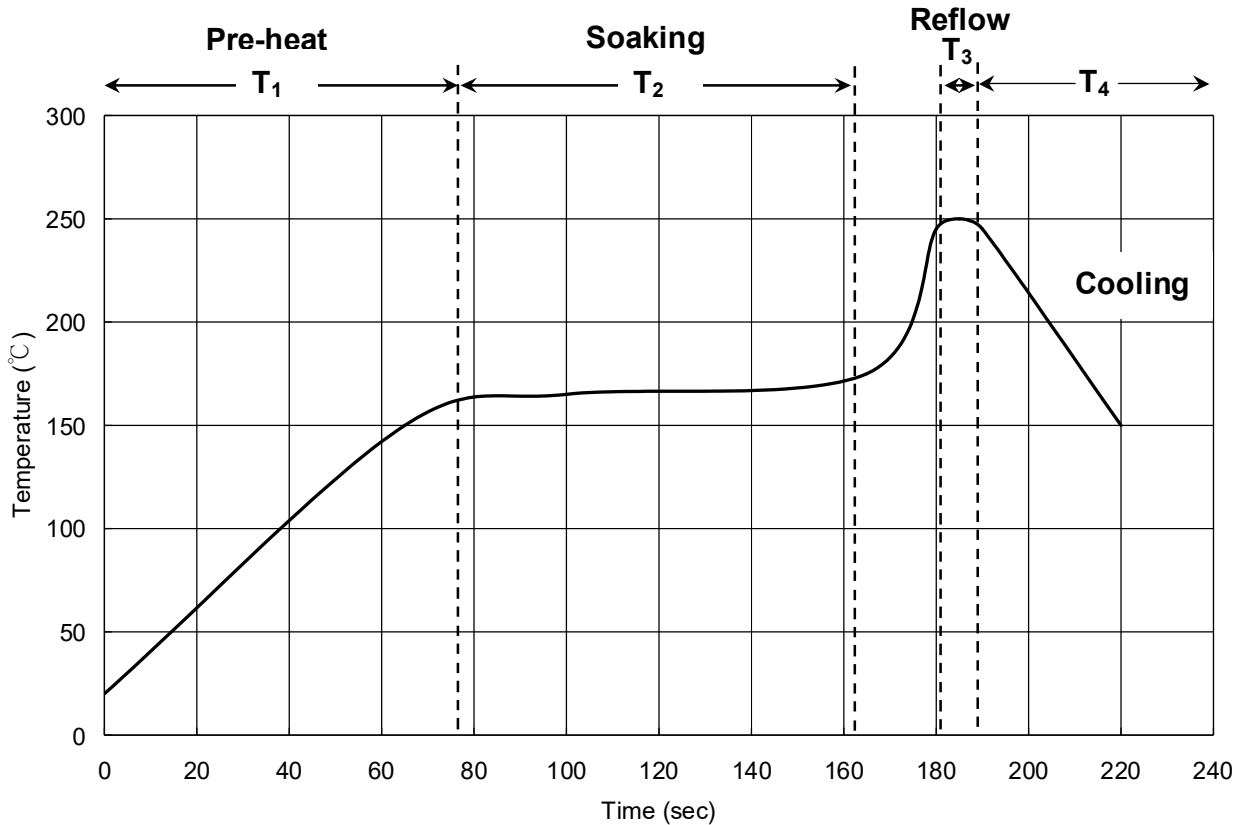
Large Box

Unit : mm



## Recommended Solder Profile

**Soldering** Recommended soldering conditions:



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