

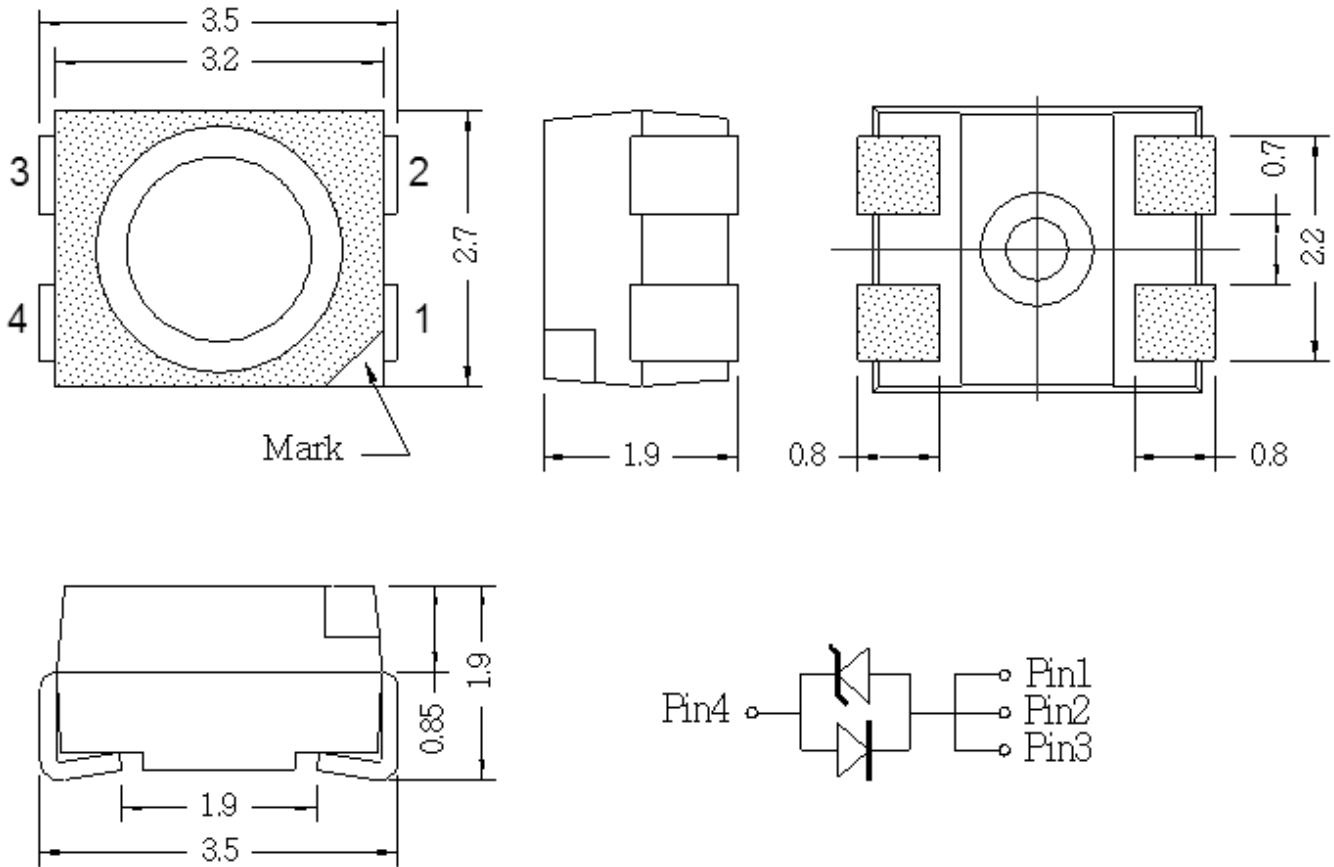


# American Opto Plus LED Corp.

## SMP-MPGC-ZS

3.5 x 2.7 x 1.9 Green PLCC-4 SMD LED

### PACKAGE OUTLINES



| Item                | Materials               |
|---------------------|-------------------------|
| Package             | Heat-Resistant Polymer  |
| Encapsulating Resin | Silicone                |
| Electrodes          | Ag Plating Copper Alloy |

#### Notes:

1. All dimensions are in millimeters; tolerance is  $\pm 0.2$ mm unless otherwise noted.
2. Electrical connection between all cathodes is recommended.



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### ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

| Parameter                   | Symbol     | Ratings           | Unit |
|-----------------------------|------------|-------------------|------|
| DC Forward Current          | $I_F$      | 30                | mA   |
| Peak Pulsed Forward Current | $I_{FP}$   | 100               | mA   |
| Reverse Voltage             | $V_R$      | 5                 | V    |
| Power Dissipation           | $P_D$      | 108               | mW   |
| Junction Temperature        | $T_J$      | 115               | °C   |
| Junction / Solder Point     | $R_{THJS}$ | 600               | °C/W |
| Junction / Ambient          | $R_{THJA}$ | 735               | °C/W |
| Operating Temperature       | $T_{OPR}$  | -30~+100          | °C   |
| Storage Temperature         | $T_{STG}$  | -40~+100          | °C   |
| Solder Temperature          | $T_{SOL}$  | 260 °C for 10 sec |      |

### OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

| Parameter           | Symbol                | Test Condition | Min  | Typ  | Max | Unit |
|---------------------|-----------------------|----------------|------|------|-----|------|
| Forward Voltage     | $V_F$                 | $I_F=20mA$     | --   | 3.2  | 3.6 | V    |
| Luminous Intensity  | $I_V$                 |                | 1150 | 1400 | --  | mcd  |
| Dominant Wavelength | $\lambda_d$           |                | 515  | 525  | 535 | nm   |
| Peak Wavelength     | $\lambda_p$           |                | --   | 515  | --  | nm   |
| Spectral Half Width | $\Delta\lambda_{1/2}$ |                | --   | 28   | --  | nm   |
| Viewing Angle       | $2\theta_{1/2}$       |                | --   | 120  | --  | deg  |

Note: Measurement uncertainty of luminous intensity: ±10%



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### LUMINOUS INENSITY BIN TABLE

IF=20mA

| Rank Name | Min (mcd) | Max (mcd) |
|-----------|-----------|-----------|
| Q         | 1150      | 1500      |
| R         | 1500      | 1900      |
| S         | 1900      | 2500      |

Tolerance for each bin limit is  $\pm 15\%$

### COLOR BIN TABLE

IF=20mA

| Rank Name | Min (nm) | Max (nm) |
|-----------|----------|----------|
| 1         | 515      | 520      |
| 2         | 520      | 525      |
| 3         | 525      | 530      |
| 4         | 530      | 535      |

Tolerance for each bin limit is  $\pm 1\text{nm}$

#### Notes:

1. One delivery will include several color ranks and  $I_V$  ranks of products. The quantity-ratio of different rank is decided by AOP.
2. Bin name typed on the label: IV RANK + Color Rank. For example, **BIN S2 Means IV: 1900~2500mcd and Color: 520nm~525nm.**



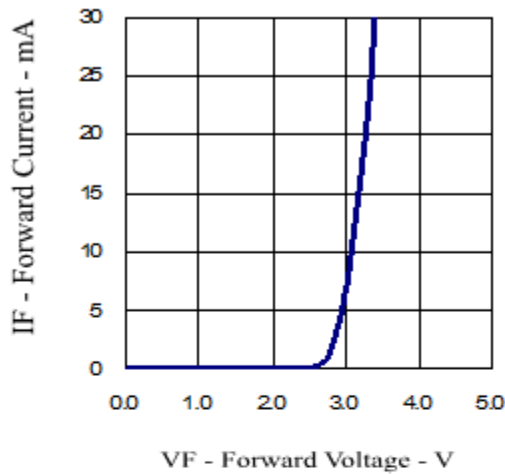
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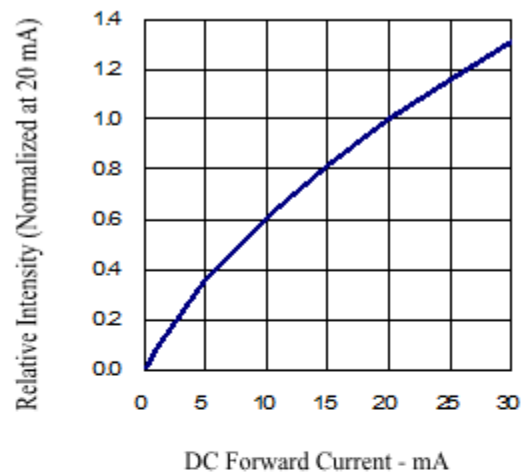
3.5 x 2.7 x 1.9 Green PLCC-4 SMD LED

### TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

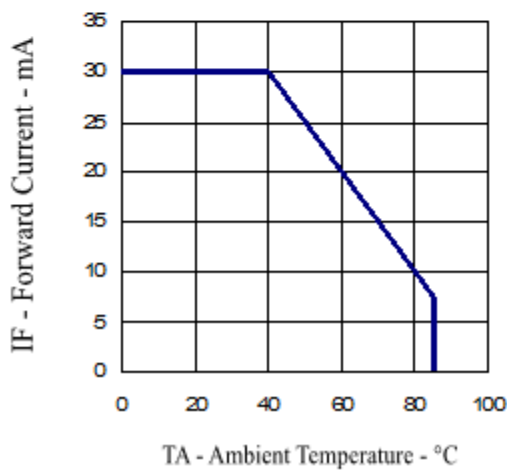
Forward Current vs. Forward Voltage



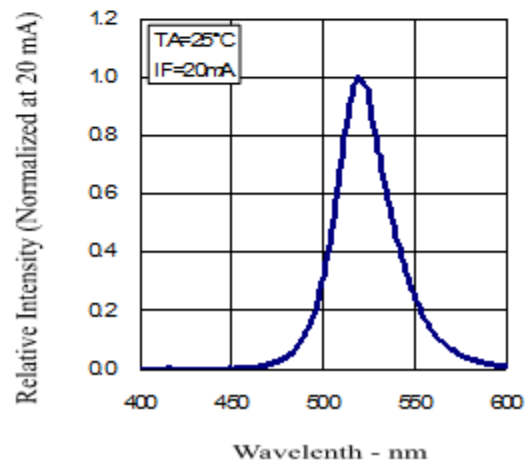
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength



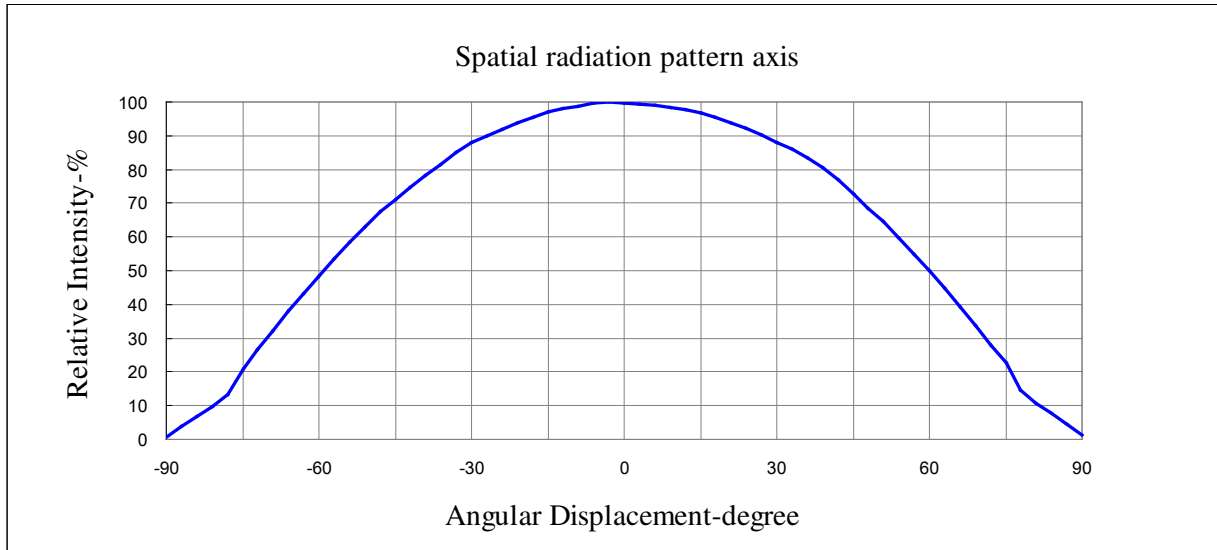


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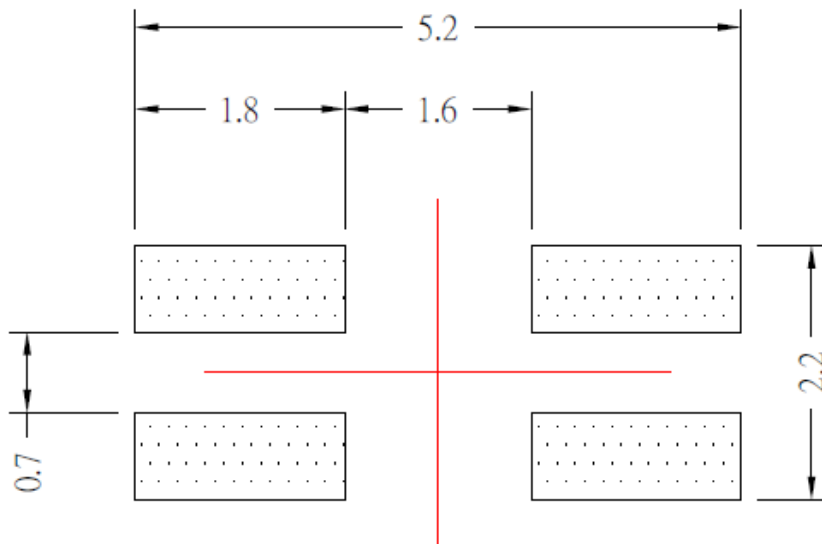
## SMP-MPGC-ZS

3.5 x 2.7 x 1.9 Green PLCC-4 SMD LED

### RADIATION PATTERN



### RECOMMENDED SOLDERING PAD PATTERN



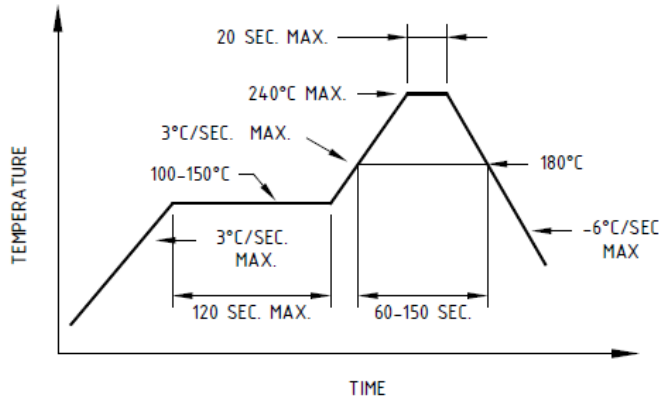


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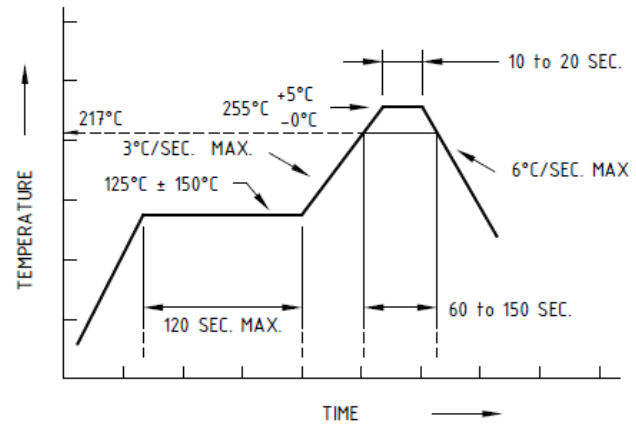
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### SOLDERING CONDITIONS



Recommended reflow soldering profile



Recommended Pb-free reflow soldering profile

- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the Characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

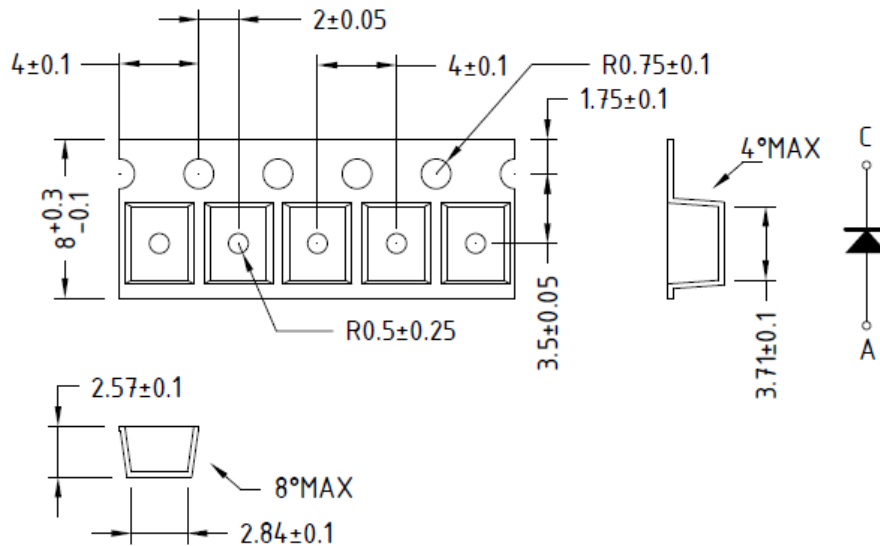


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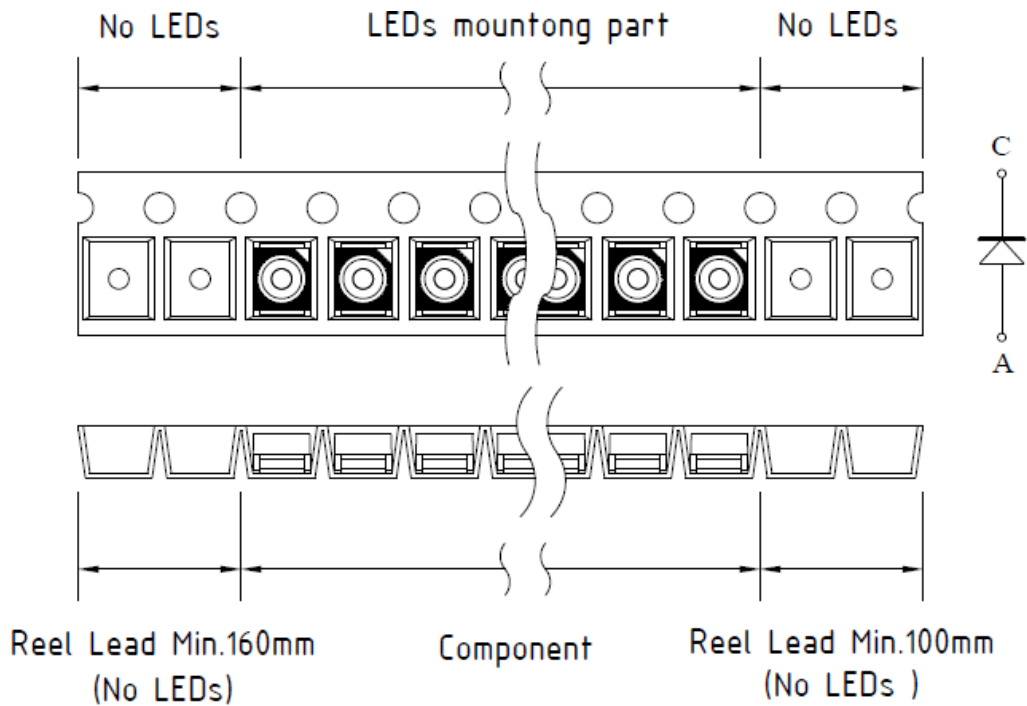
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### TAPE DIMENSION



### TAPE LEADER AND TRAILER DIMENSION



USER FEED DIRECTION

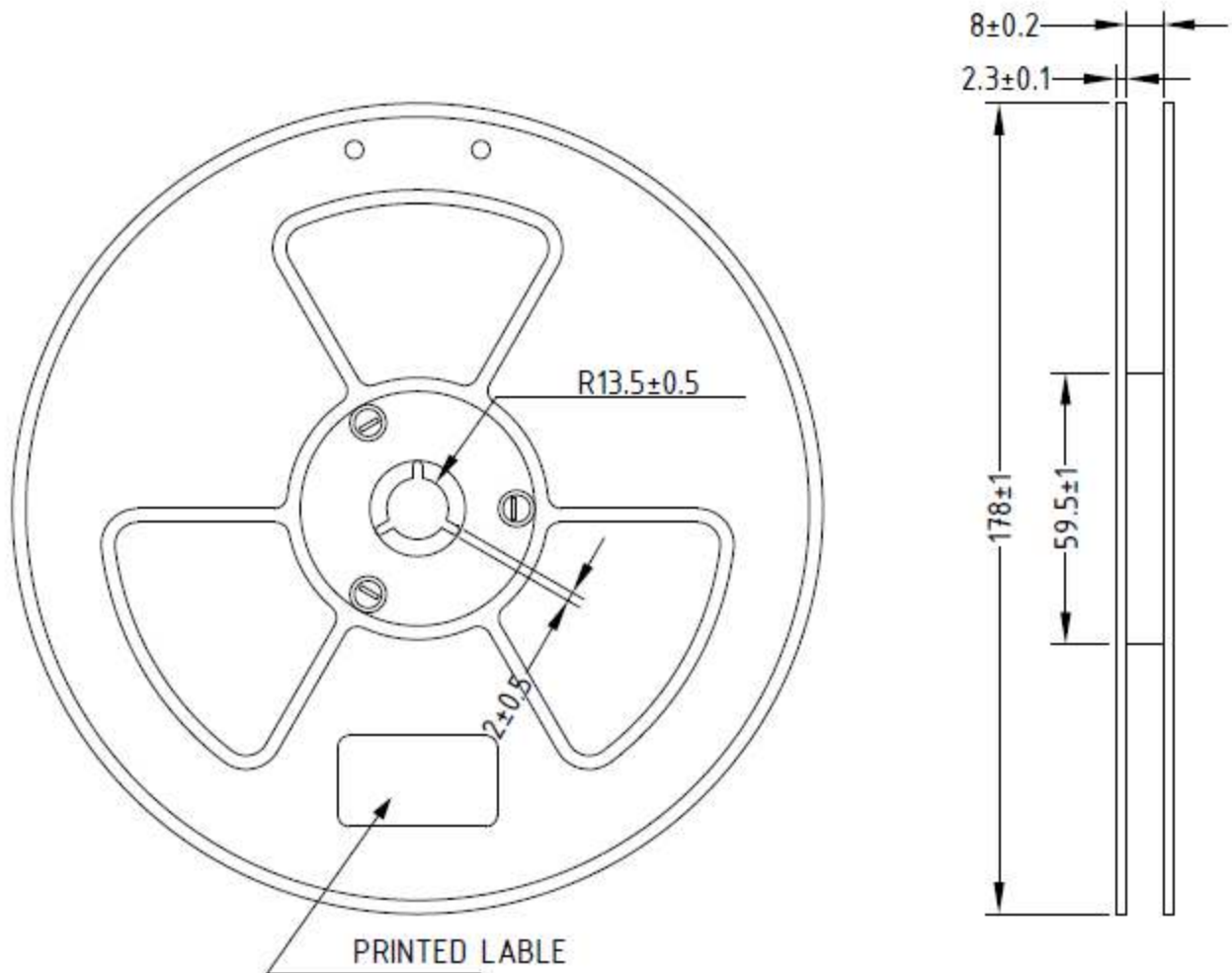


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### REEL DIMENSION



#### Notes:

1. Baking is required when the pack has been opened for more than four weeks. Baking recommended conditions:  $60 \pm 5$  °C for 20 hours.
2. Available in 8mm carrier tape on 7 inch reel (2000 pieces).