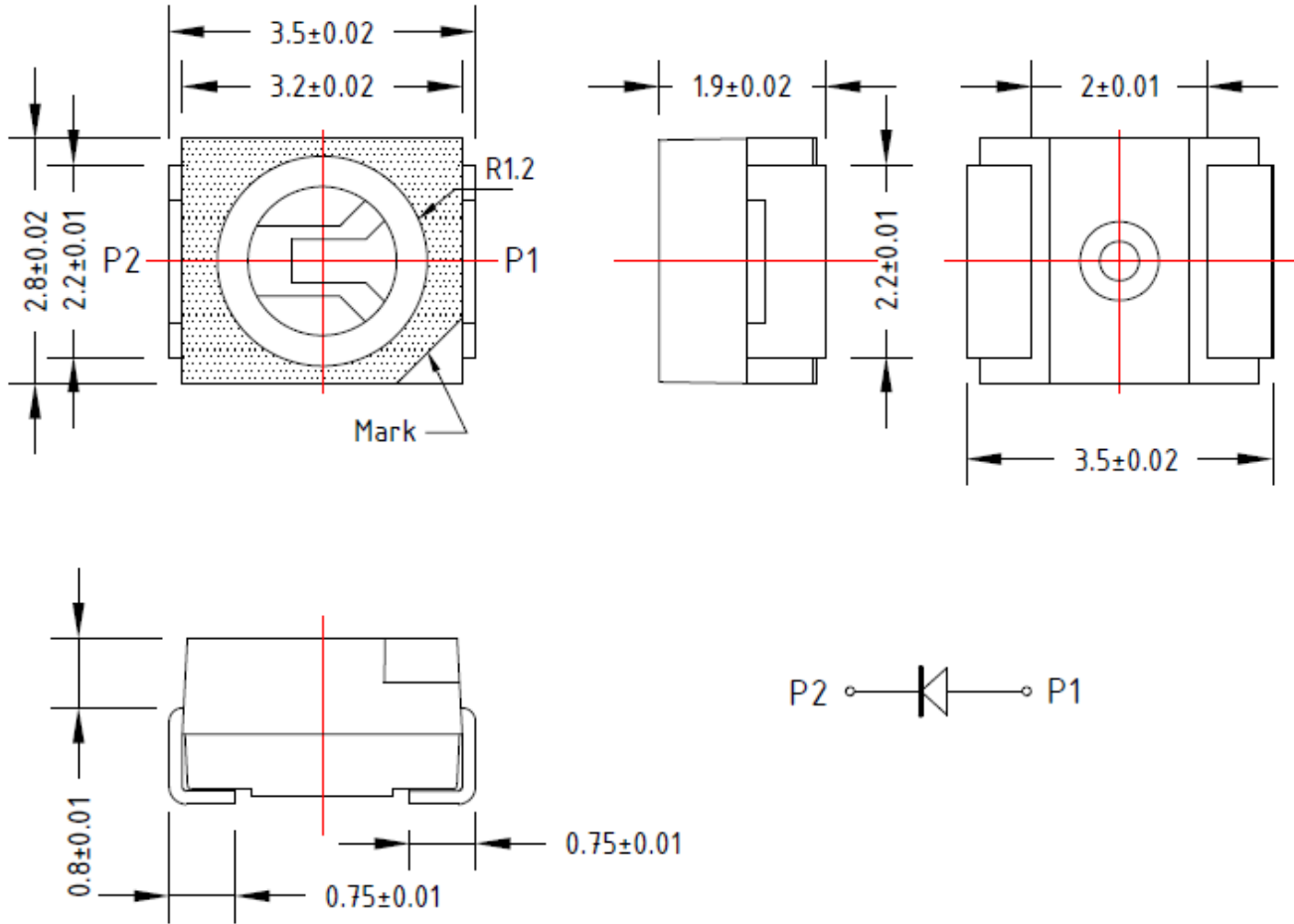


**SPECIFICATION** **CSP1311R5C**
**PACKAGE OUTLINES**

**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$ mm (0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

| Part Number | Chip Material | Color of Emission | Lens Type   | Viewing Angle |
|-------------|---------------|-------------------|-------------|---------------|
| CSP1311R5C  | InGaAlP       | Red               | Water Clear | 120°          |



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**ABSOLUTE MAXIMUM RATINGS**
**(TA=25°C)**

| Parameter                                  | Symbol           | Max Rating              | Unit |
|--|------------------|-------------------------|------|
| Forward Current                            | I <sub>F</sub>   | 50                      | mA   |
| Reverse Current @ 5V                       | I <sub>R</sub>   | 10                      | μA   |
| Power Dissipation                          | P <sub>d</sub>   | 120                     | mW   |
| Operating Temperature Range                | T <sub>OP</sub>  | -30~+100                | °C   |
| Storage Temperature Range                  | T <sub>STG</sub> | -40~+100                | °C   |
| Peak Pulsing Current (1/10 duty f = 10KHz) | I <sub>FP</sub>  | 100                     | mA   |
| Soldering Temperature                      | T <sub>SOL</sub> | Max 260°C for 5 sec Max |      |

**OPTICAL-ELECTRICAL CHARACTERISTICS**
**(TA=25°C)**

| Parameter                           | Symbol            | Test Condition        | Value |     |     | Unit |
|-------------------------------------|-------------------|-----------------------|-------|-----|-----|------|
|                                     |                   |                       | Min   | Typ | Max |      |
| Luminous Intensity                  | I <sub>v</sub>    | I <sub>F</sub> = 20mA | 400   | 600 | -   | mcd  |
| Forward Voltage                     | V <sub>F</sub>    | I <sub>F</sub> = 20mA | -     | 2.1 | 2.4 | V    |
| Reverse Leakage Current             | I <sub>R</sub>    | V <sub>R</sub> = 5V   | -     | -   | 10  | μA   |
| Viewing Angle at 50% I <sub>v</sub> | 2θ <sub>1/2</sub> | I <sub>F</sub> = 20mA | -     | 120 | -   | Deg  |
| Peak Wavelength                     | λ <sub>P</sub>    | I <sub>F</sub> = 20mA | -     | 632 | -   | nm   |
| Dominant Wavelength                 | λ <sub>D</sub>    | I <sub>F</sub> = 20mA | -     | 625 | -   | nm   |

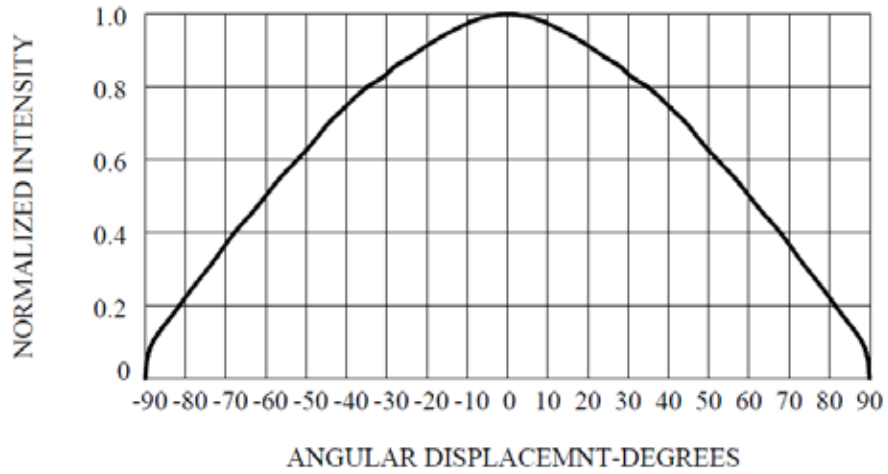
\*Tolerance of viewing angle: -10 / +5 deg.



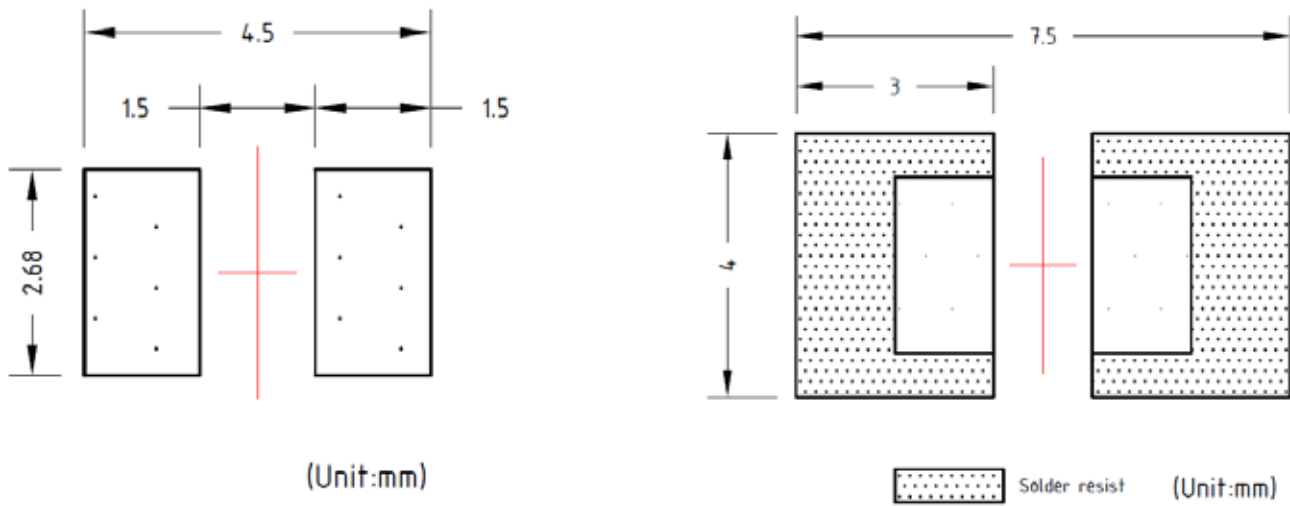
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# RADIATION PATTERN & RECOMMENDED SOLDER PAD

## Radiation Pattern



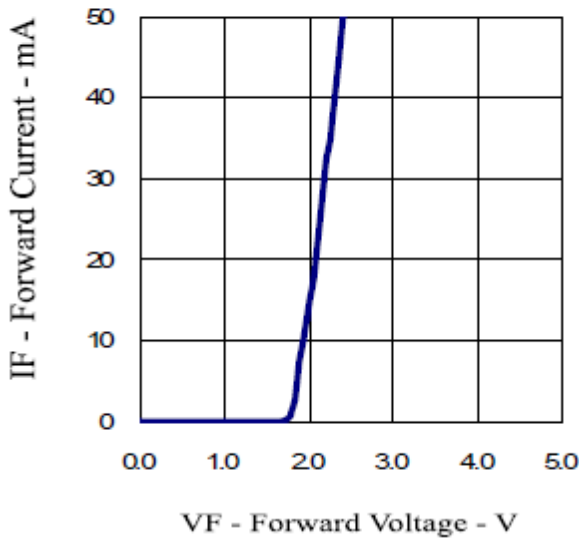
## Recommended Soldering Pad Pattern



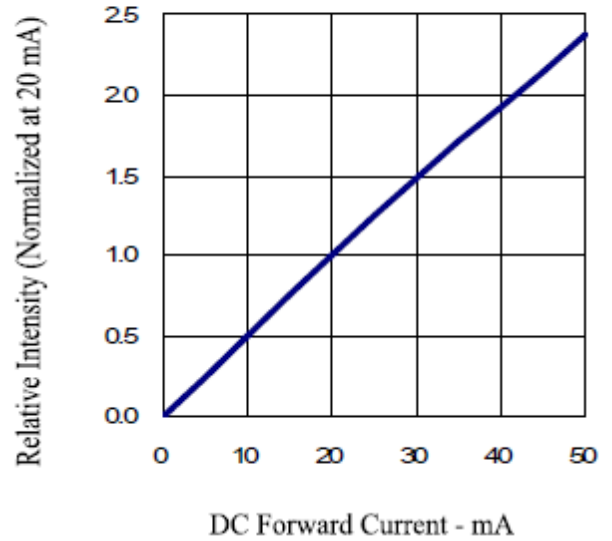
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## OPTICAL CHARACTERISTIC CURVES

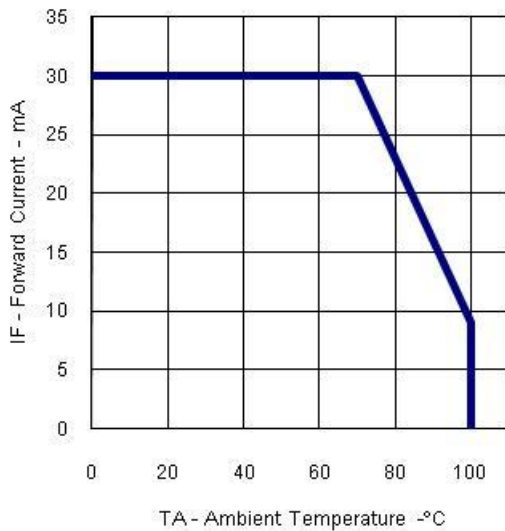
Forward Current vs. Forward Voltage



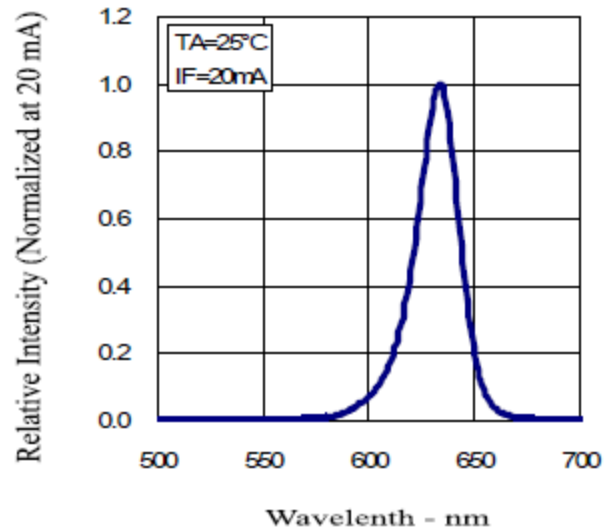
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



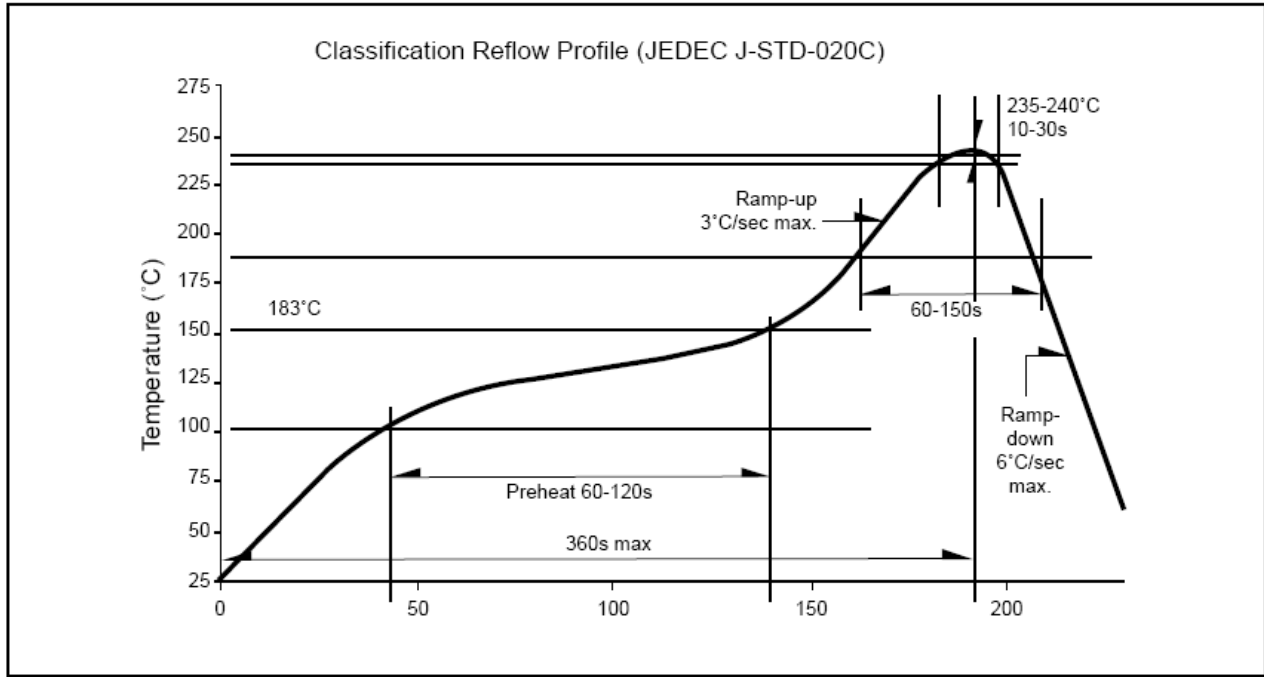
Relative Intensity vs. Wavelength



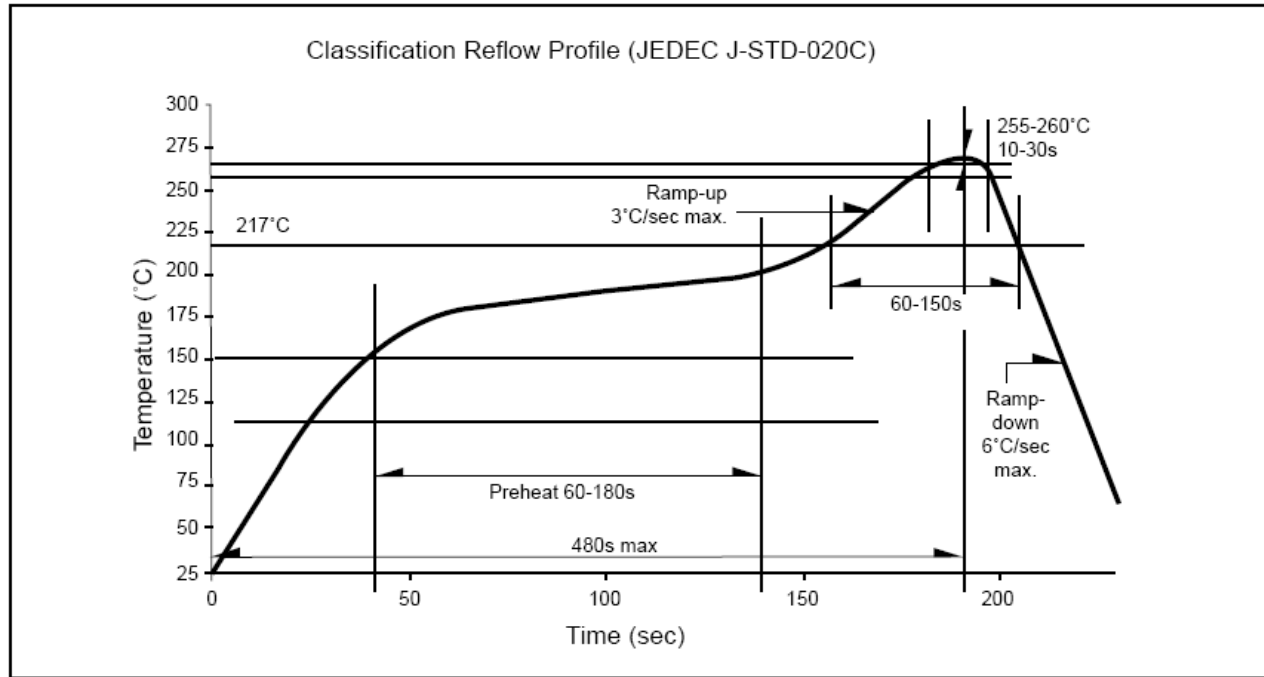
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# SOLDERING CONDITIONS

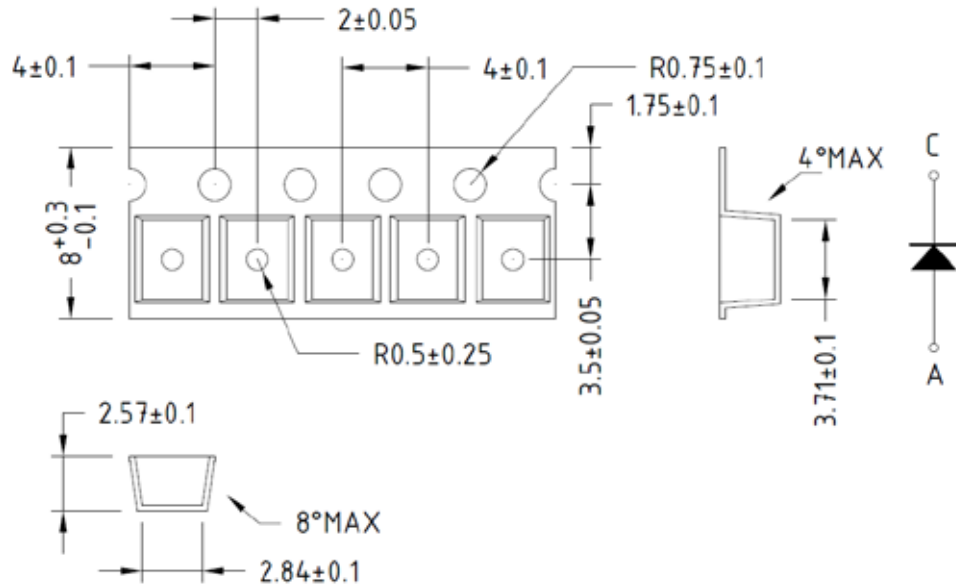
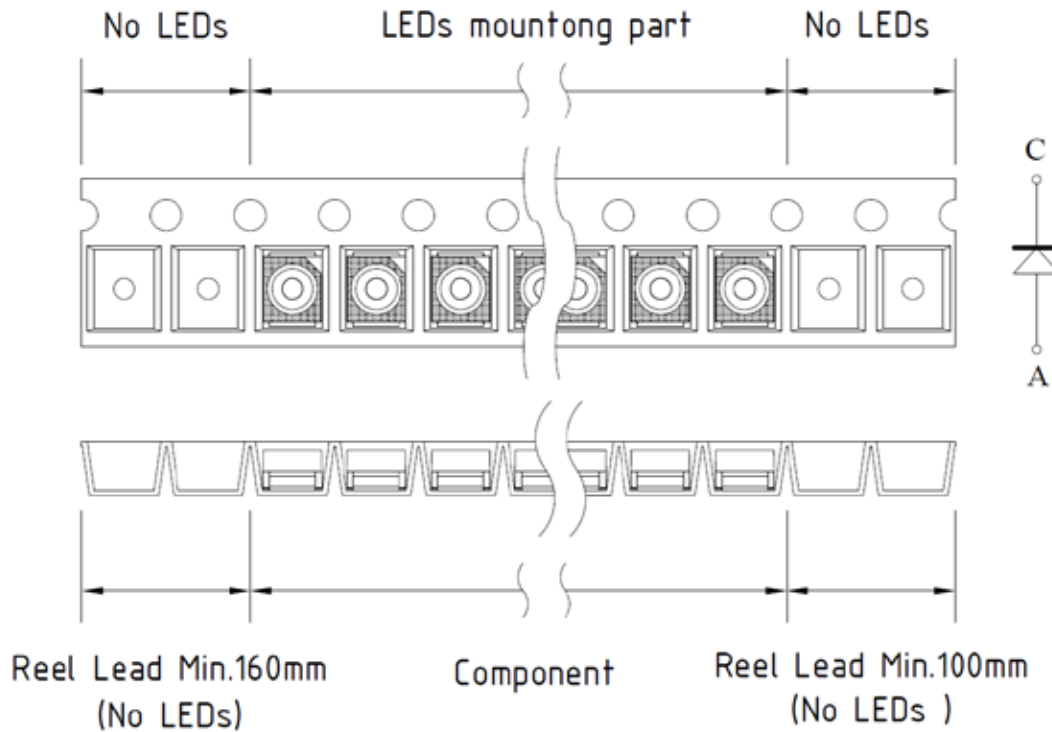
## RECOMMENDED Sn-PB IR-Reflow Soldering Profile



## RECOMMENDED Pb-Free Soldering Profile



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**PACKAGING SPECIFICATION**
**Tape Dimension**

**Tape Leader and Trailer Dimension**


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