

DomiLED[™]

Synonymous with function and performance, the DomiLED[™] series is perfectly suited for a variety of cross-industrial applications due to its small package outline, durability and superior brightness.

Features:

- > High brightness surface mount LED.
- > Designed for sideway illumination.
- > 120° viewing angle.
- > Small package outline.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering and TTW soldering.

Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).



| Part Ordering Number | Chip Technology / Color | Viewing Angle° | Luminous Intensity @ IF = 20mA IV (mcd) |
|------------------------|-------------------------|----------------|---|
| DSS-SSS-PQ2-1 | AllnGaP | 120 | 45.0 - 112.5 |
| • DSS-SSS-P1 | Super red, 632nm | | 45.0 - 56.0 |
| • DSS-SSS-P2 | | | 56.0 - 71.5 |
| • DSS-SSS-Q1 | | | 71.5 - 90.0 |
| • DSS-SSS-Q2 | | | 90.0 - 112.5 |
| DSR-CSS-PQ2-1 * | AllnGaP | 120 | 45.0 - 112.5 |
| • DSR-CSS-P1 | Red, 625nm | | 45.0 - 56.0 |
| • DSR-CSS-P2 | | | 56.0 - 71.5 |
| • DSR-CSS-Q1 | | | 71.5 - 90.0 |
| • DSR-CSS-Q2 | | | 90.0 - 112.5 |
| DSR-CSS-QR2-1 | | | 71.5 - 180.0 |
| • DSR-CSS-Q1 | | | 71.5 - 90.0 |
| • DSR-CSS-Q2 | | | 90.0 - 112.5 |
| • DSR-CSS-R1 | | | 112.5 - 140.0 |
| • DSR-CSS-R2 | | | 140.0 - 180.0 |
| DSR-SSS-QR2-1 * | | | 71.5 - 180.0 |
| • DSR-SSS-Q1 | | | 71.5 - 90.0 |
| • DSR-SSS-Q2 | | | 90.0 - 112.5 |
| • DSR-SSS-R1 | | | 112.5 - 140.0 |
| • DSR-SSS-R2 | | | 140.0 - 180.0 |
| DSR-TSS-ST2-1 | TS AllnGaP | 120 | 180.0 - 450.0 |
| • DSR-TSS-S1 | Red, 625nm | | 180.0 - 224.0 |
| • DSR-TSS-S2 | | | 224.0 - 285.0 |
| • DSR-TSS-T1 | | | 285.0 - 355.0 |
| • DSR-TSS-T2 | | | 355.0 - 450.0 |
| DSA-CSS-QR2-1 | AllnGaP | 120 | 71.5 - 180.0 |
| • DSA-CSS-Q1 | Amber, 615nm | | 71.5 - 90.0 |
| • DSA-CSS-Q2 | | | 90.0 - 112.5 |
| • DSA-CSS-R1 | | | 112.5 - 140.0 |
| • DSA-CSS-R2 | | | 140.0 - 180.0 |
| DSA-SSS-RS2-1 | | | 112.5 - 285.0 |
| • DSA-CSS-R1 | | | 112.5 - 140.0 |
| • DSA-CSS-R2 | | | 140.0 - 180.0 |
| • DSA-CSS-S1 | | | 180.0 - 224.0 |
| • DSA-CSS-S2 | | | 224.0 - 285.0 |
| DSO-CSS-QR2-1 | AllnGaP | | 71.5 - 180.0 |
| • DSO-CSS-Q1 | Orange, 605nm | | 71.5 - 90.0 |
| • DSO-CSS-Q2 | | | 90.0 - 112.5 |
| • DSO-CSS-R1 | | | 112.5 - 140.0 |
| • DSO-CSS-R2 | | | 140.0 - 180.0 |

* Not for new design

| Part Ordering Number | Chip Technology / Color | Viewing Angle° | Luminous Intensity @ IF = 20mA IV (mcd) |
|----------------------|-------------------------|----------------|---|
| DSO-SSS-RS2-1 | AllnGap | 120 | 112.5 - 285.0 |
| • DSO-SSS-R1 | Orange, 605nm | | 112.5 - 140.0 |
| • DSO-SSS-R2 | | | 140.0 - 180.0 |
| • DSO-SSS-S1 | | | 180.0 - 224.0 |
| • DSO-SSS-S2 | | | 224.0 - 285.0 |
| DSY-CSS-QR2-1 | AllnGap | 120 | 71.5 - 180.0 |
| • DSY-CSS-Q1 | Yellow, 587nm | | 71.5 - 90.0 |
| • DSY-CSS-Q2 | | | 90.0 - 112.5 |
| • DSY-CSS-R1 | | | 112.5 - 140.0 |
| • DD0-CSS-R2 | | | 140.0 - 180.0 |
| DSY-SSS-RS2-1 | | | 112.5 - 285.0 |
| • DSY-SSS-R1 | | | 112.5 - 140.0 |
| • DSY-SSS-R2 | | | 140.0 - 180.0 |
| • DSY-SSS-S1 | | | 180.0 - 224.0 |
| • DSY-SSS-S2 | | | 224.0 - 285.0 |
| DSG-SSS-PQ2-1 | AllnGaP | 120 | 45.0 - 90.0 |
| • DSG-SSS-P1 | Green, 572nm | | 45.0 - 56.0 |
| • DSG-SSS-P2 | | | 56.0 - 71.5 |
| • DSG-SSS-Q1 | | | 71.5 - 90.0 |
| • DSG-SSS-Q2 | | | 90.0 - 112.5 |

NOTE

1. All part number above comes in a quantity of 2500 units per reel.
2. Other luminous intensity groups are also available upon request.
3. Luminous intensity is measured with an accuracy of $\pm 11\%$.
4. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
5. An optional Vf binning is also available upon request. Binning scheme is as per following table. Please contact marketing for special part number

Wavelength Grouping

| Color | Group | Wavelength distribution (nm) |
|---|-------|------------------------------|
| DSS; Super red | Full | 625 - 640 |
| DSR-CS, -SS; Red (AS) DSR-TS; Red (TS) | Full | 620 - 630 |
| | Full | 620 - 635 |
| DSA; Amber | Full | 610 - 621 |
| | W | 610 - 615 |
| | X | 615 - 621 |
| DSO; Orange | Full | 600 - 612 |
| | W | 600 - 603 |
| | X | 603 - 606 |
| | Y | 606 - 609 |
| | Z | 609 - 612 |
| DSY; Yellow | Full | 582 - 594 |
| | W | 582 - 585 |
| | X | 585 - 588 |
| | Y | 588 - 591 |
| | Z | 591 - 594 |
| DSG; Green | Full | 564.5 - 567.5 |
| | W | 564.5 - 567.5 |
| | X | 567.5 - 570.5 |
| | Y | 570.5 - 573.5 |
| | Z | 573.5 - 576.5 |

Dominant wavelength is measured with an accuracy of ± 1 nm.

Electrical Characteristics at Ta=25°C

| Part Number | Vf @ If = 20mA | | Vr @ Ir = 10uA |
|---|----------------|----------|----------------|
| | Typ. (V) | Max. (V) | Min. (V) |
| DSR-CSS, DSA-CSS, DSO-CSS, DSY-CSS | 1.9 | 2.3 | 12 |
| DSS-SSS, DSR-SSS, DSA-SSS, DSO-SSS, DSY-SSS, DSG-SSS | 1.8 | 2.3 | 12 |
| DSR-TSS | 2.1 | 2.6 | 12 |

Forward voltage, Vf is measured with an accuracy of ± 0.1 V.

Vf Binning (Optional)

| Vf Bin @ 20mA | Forward Voltage (V) |
|---------------|---------------------|
| 01 | 1.55 ... 1.85 |
| 02 | 1.85 ... 2.15 |
| 03 | 2.15 ... 2.45 |
| 04 | 2.45 ... 2.75 |

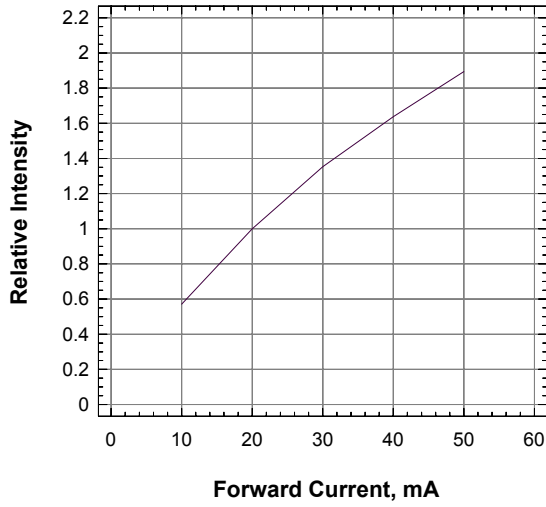
Forward voltage, Vf is measured with an accuracy of ± 0.1 V.

Please consult sales and marketing for special part number to incorporate Vf binning.

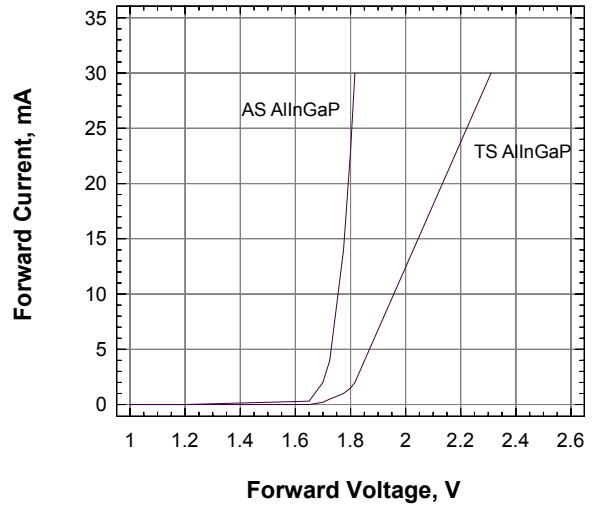
Absolute Maximum Ratings

| | Maximum Value | Unit |
|---|---------------|------|
| DC forward current | 20 | mA |
| Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005) | 200 | mA |
| Reverse voltage | 12 | V |
| ESD threshold (HBM) | 2 | kV |
| LED junction temperature | 125 | °C |
| Operating temperature | -40 ... +100 | °C |
| Storage temperature | -40 ... +100 | °C |
| Power dissipation (at room temperature) | 50 | mW |

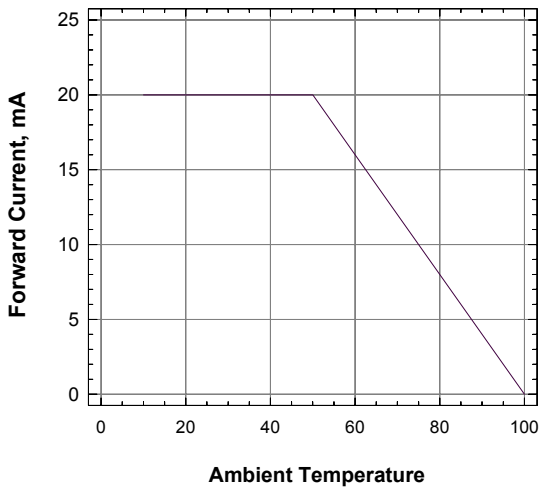
Relative Luminous Intensity Vs Forward Current



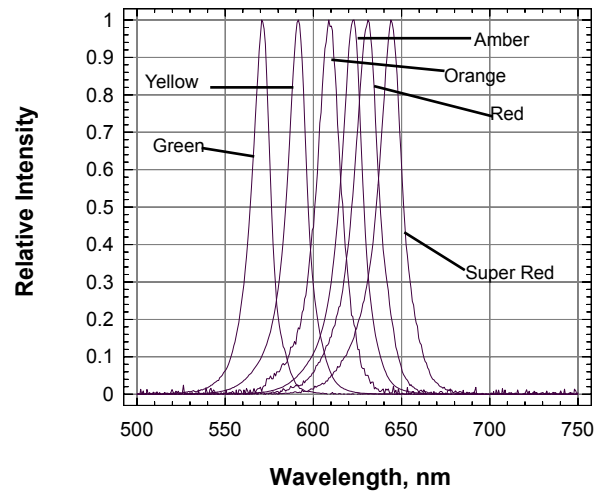
Forward Current Vs Forward Voltage



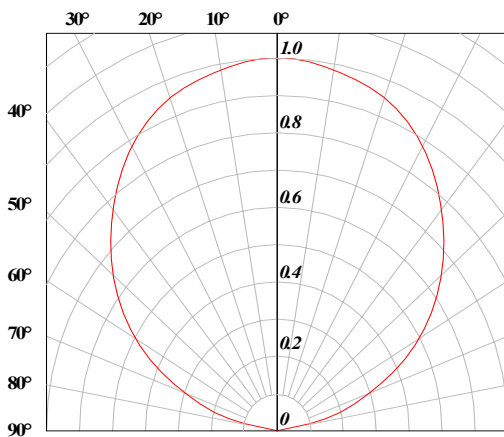
Maximum Current Vs Temperature



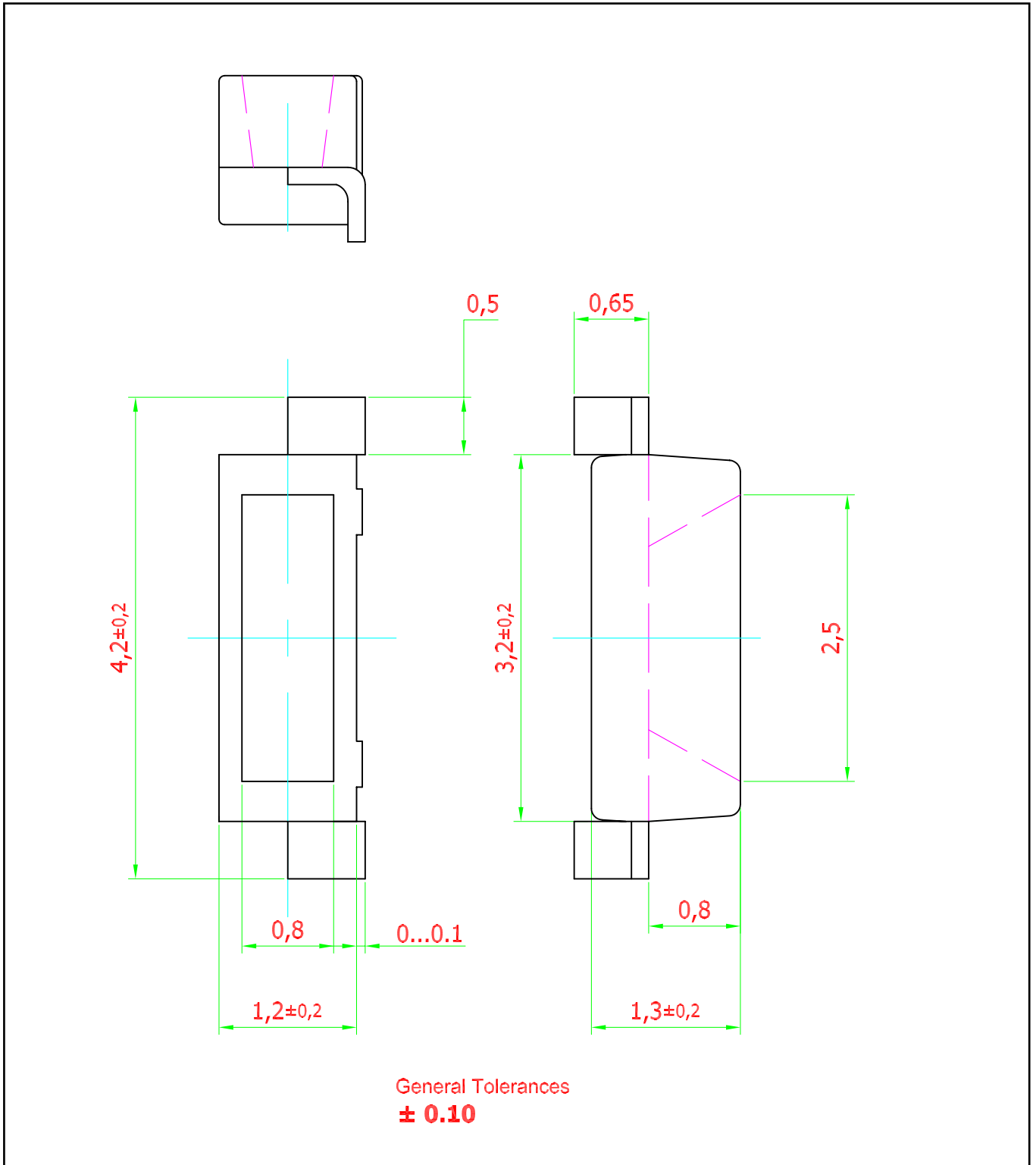
Relative Intensity Vs Wavelength



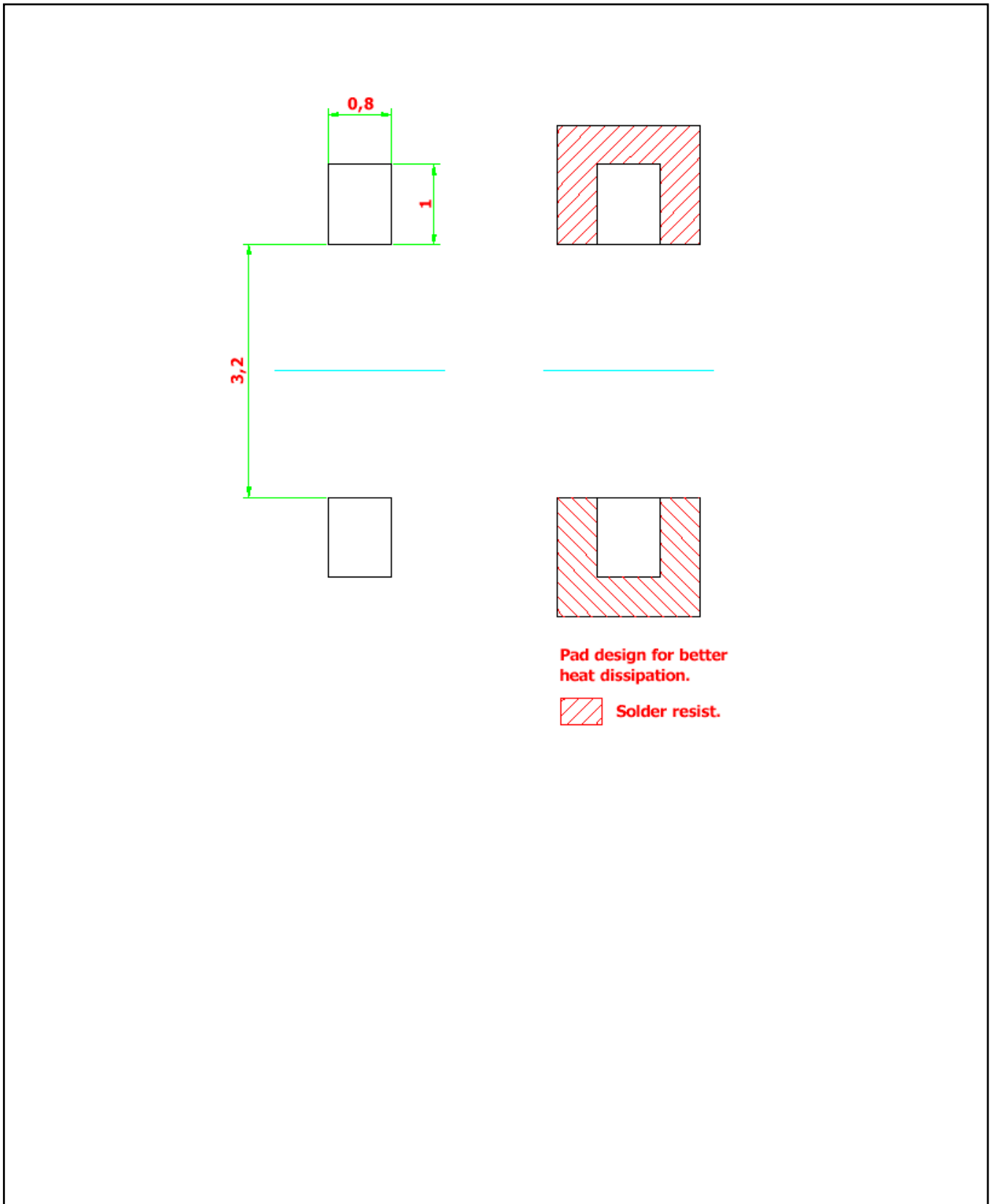
Radiation Pattern



DomiLED™ • AllnGap : DSx-xSS Package Outlines

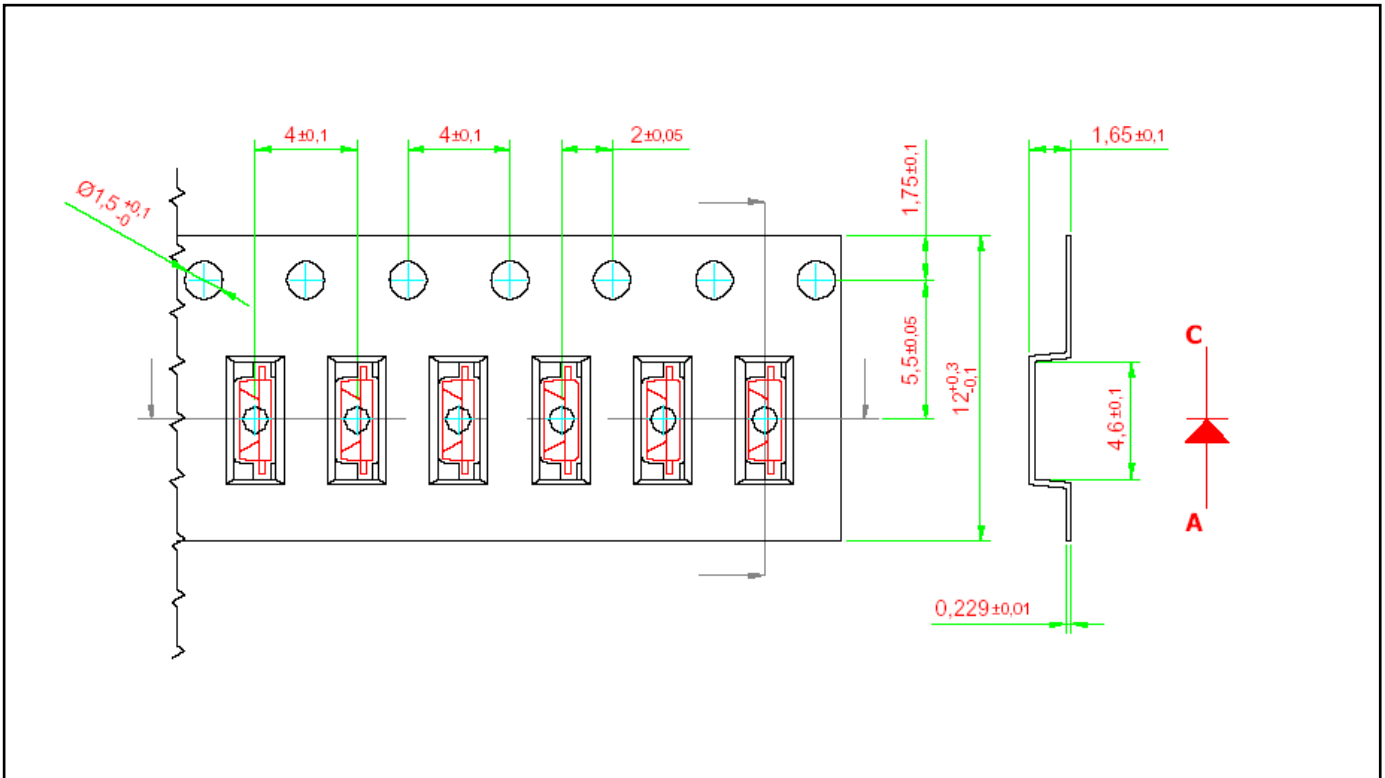


Recommended Solder Pad

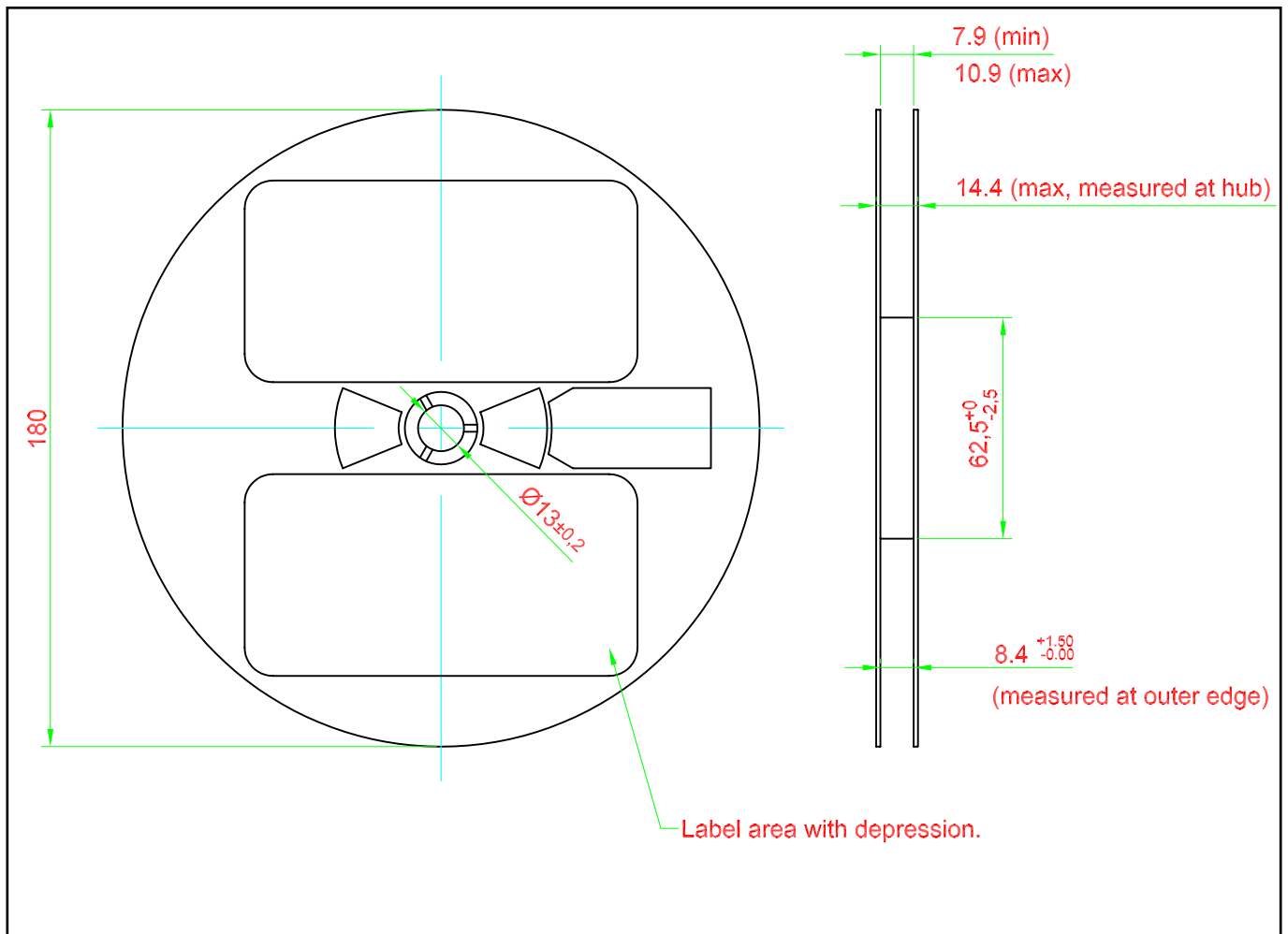


Taping and orientation

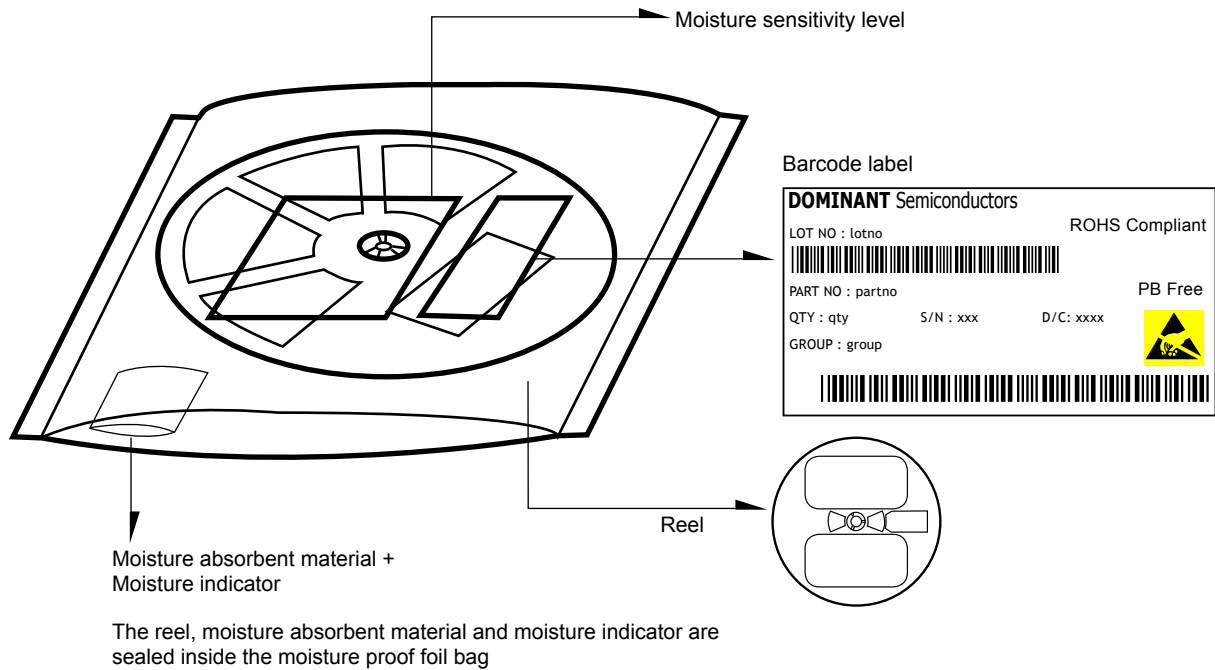
- Reels come in quantity of 2500 units.
- Reel diameter is 180 mm.



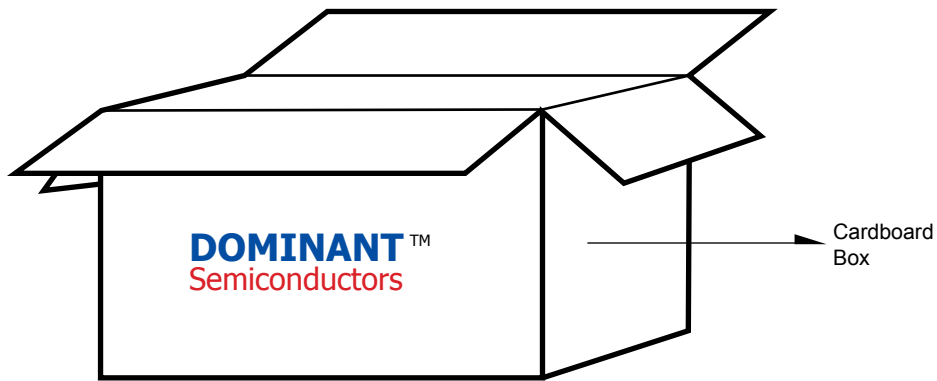
Packaging Specification



Packaging Specification



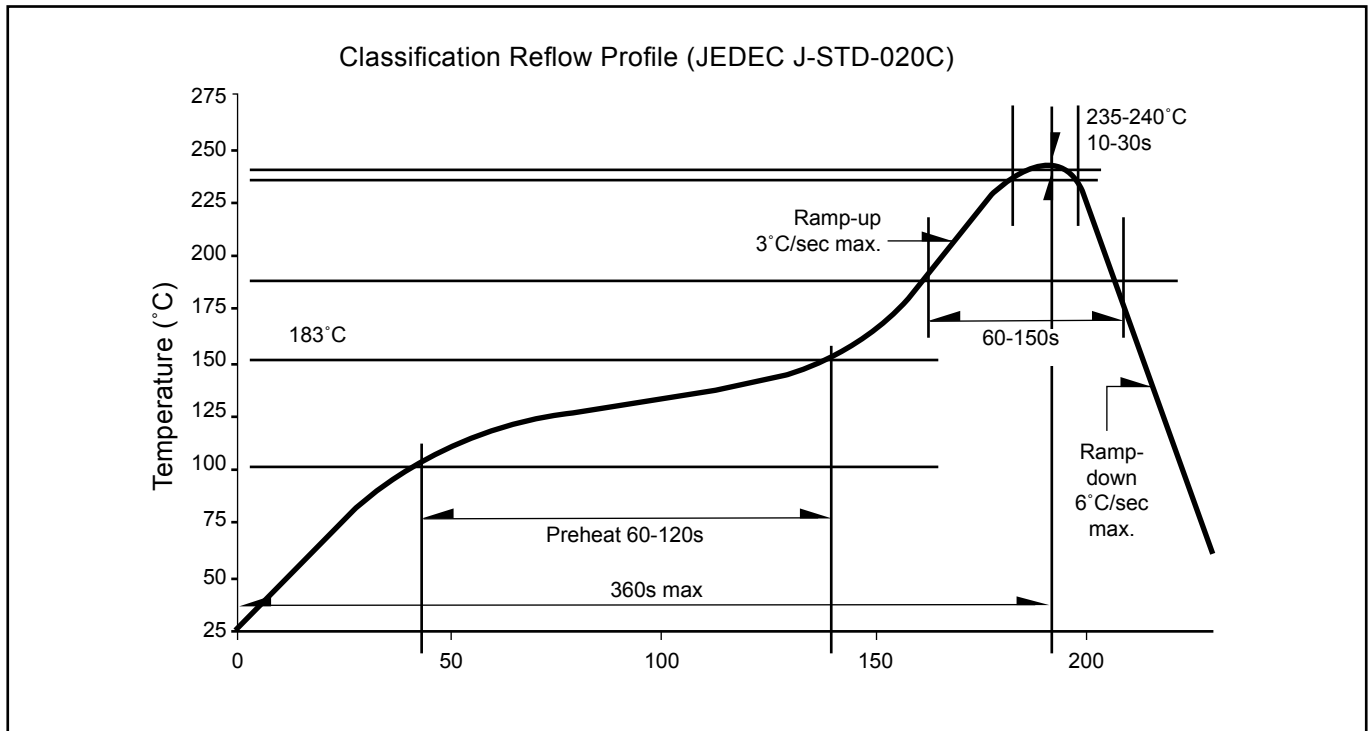
| | Average 1pc Right Angle DomiLED | 1 completed bag (2500pcs) |
|---------------|---------------------------------|---------------------------|
| Weight (gram) | 0.034 | 190 ± 10 |



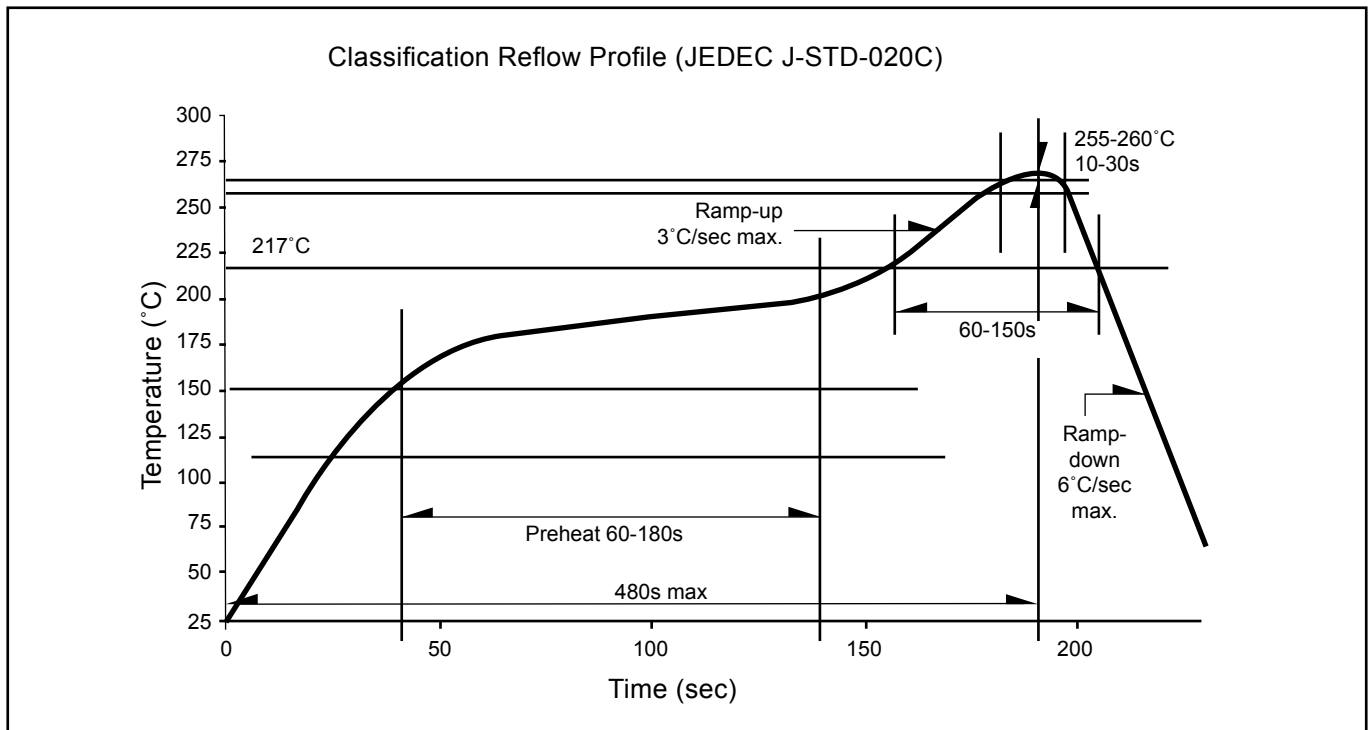
For Right Angle DomiLED™

| Cardboard Box Size | Dimensions (mm) | Empty Box Weight (kg) | Reel / Box | Quantity / Box (pcs) |
|--------------------|-----------------|-----------------------|--------------|----------------------|
| Small | 300 x 250 x 250 | 0.58 | 15 reels MAX | 37,500 MAX |
| Large | 416 x 516 x 476 | 1.74 | 55 reels MAX | 137,500 MAX |

Recommended Sn-Pb IR-Reflow Soldering Profile



Recommended Pb-free Soldering Profile



Revision History

| Page | Subjects | Date of Modification |
|------|------------|----------------------|
| - | New Format | 03 April 2006 |
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NOTE

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