

### Domiled™

With the intense colors that seem to glow with energy and its significant brightness, Domiled™ white LED is a highly reliable design device. Its dynamic nature makes it perfect choice for lighthing applications, office and home applications and standard industrial applications.



### Features:

- > High brightness surface mount LED.
- > 120° viewing angle.
- > Small package outline (LxWxH) of 3.2 x 2.8 x 1.8mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.



### Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Communication: mobile phone flash light, backlights in mobile phone display.
- > Display: full color display video notice board.
- > Industry: channel lighting



### Optical Characteristics at Tj=25°C

| Part Ordering Number | Color      | Viewing Angle° | Luminous Intensity @ IF = 20mA IV (mcd) |        |        |
|----------------------|------------|----------------|-----------------------------------------|--------|--------|
|                      |            |                | Min.                                    | Typ.   | Max.   |
| DRF-NJG-V2W-1        | Warm White | 120            | 900.0                                   | 1400.0 | 1800.0 |

**NOTE**

1. All part number above comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of ± 11%.
3. Color binning is carried for all units as per the color binning table. Only one color group is allowed for each reel.

### Electrical Characteristics at Tj=25°C

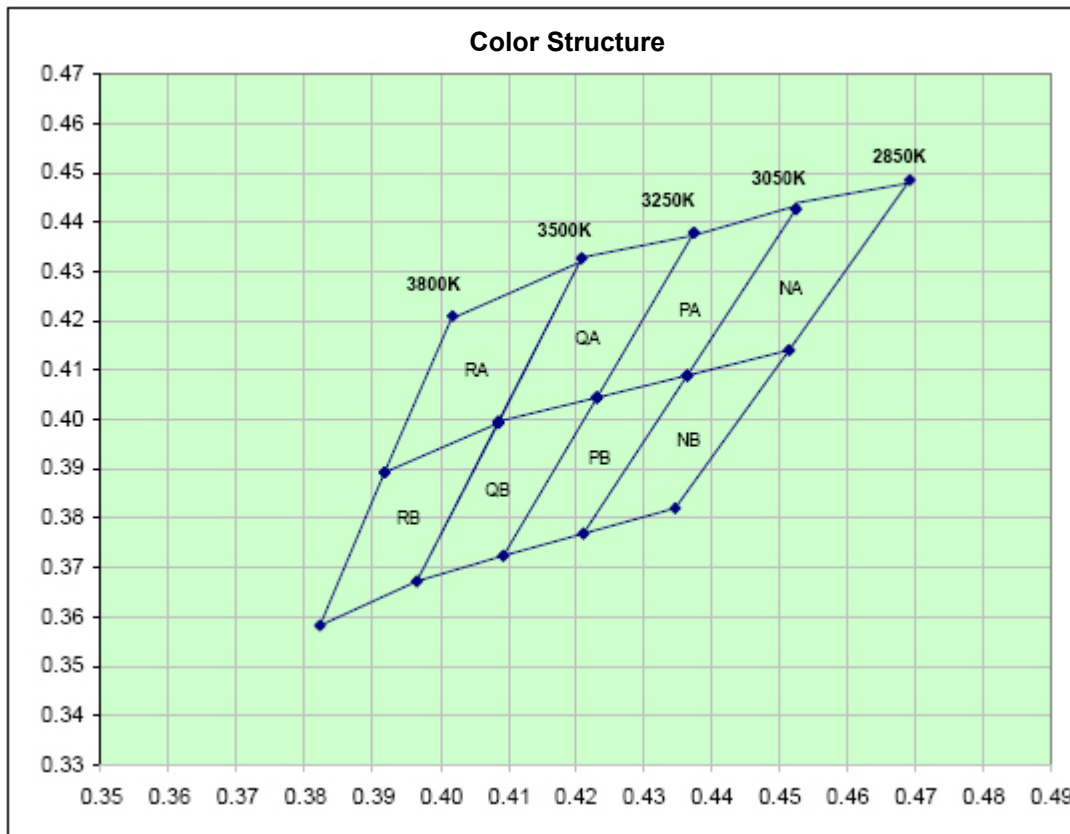
| Part Number | Vf @ If = 20 mA |          |          | Vr @ Ir = 10 µA |
|-------------|-----------------|----------|----------|-----------------|
|             | Min. (V)        | Typ. (V) | Max. (V) | Min. (V)        |
| DRF-NJG     | 2.9             | 3.4      | 3.8      | 5.0             |

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

### Absolute Maximum Ratings

|                                                     | Maximum Value | Unit |
|-----------------------------------------------------|---------------|------|
| DC forward current                                  | 20            | mA   |
| Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005) | 100           | mA   |
| Reverse voltage; Ir max = 10µA                      | 5             | V    |
| ESD threshold (HBM)                                 | 2000          | V    |
| LED junction temperature                            | 125           | °C   |
| Operating temperature                               | -40 ... +100  | °C   |
| Storage temperature                                 | -40 ... +100  | °C   |
| Power dissipation (at room temperature)             | 80            | mW   |

**DRF-NJG, Warm White Color Grouping**



Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

| Bin |    |       |       |       |       |
|-----|----|-------|-------|-------|-------|
| RA  | Cx | 0.402 | 0.392 | 0.409 | 0.421 |
|     | Cy | 0.421 | 0.389 | 0.399 | 0.433 |
| RB  | Cx | 0.392 | 0.382 | 0.397 | 0.409 |
|     | Cy | 0.389 | 0.358 | 0.367 | 0.399 |
| QA  | Cx | 0.421 | 0.409 | 0.423 | 0.437 |
|     | Cy | 0.433 | 0.400 | 0.405 | 0.438 |
| QB  | Cx | 0.409 | 0.397 | 0.409 | 0.423 |
|     | Cy | 0.400 | 0.367 | 0.372 | 0.405 |
| PA  | Cx | 0.437 | 0.423 | 0.436 | 0.452 |
|     | Cy | 0.438 | 0.405 | 0.409 | 0.443 |
| PB  | Cx | 0.423 | 0.409 | 0.421 | 0.436 |
|     | Cy | 0.405 | 0.372 | 0.377 | 0.409 |
| NA  | Cx | 0.452 | 0.436 | 0.451 | 0.469 |
|     | Cy | 0.443 | 0.409 | 0.414 | 0.448 |
| NB  | Cx | 0.436 | 0.421 | 0.435 | 0.451 |
|     | Cy | 0.409 | 0.377 | 0.382 | 0.414 |

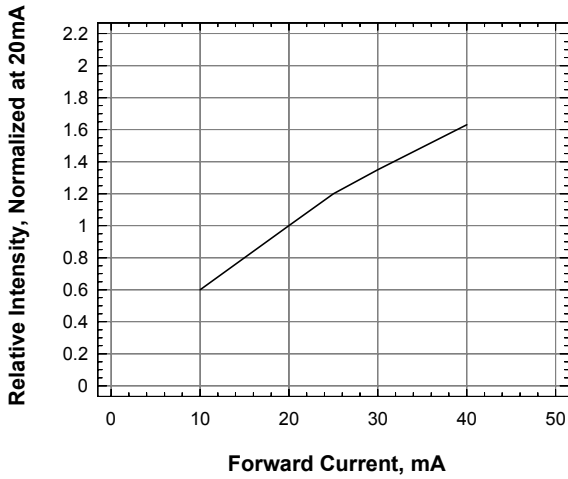
InGaN wavelength is very sensitive to drive current. Operating at lower current is not recommended and may yield unpredictable performance. Current pulsing should be used for dimming purposes.

**Luminous Intensity Group at Tj=25°C**

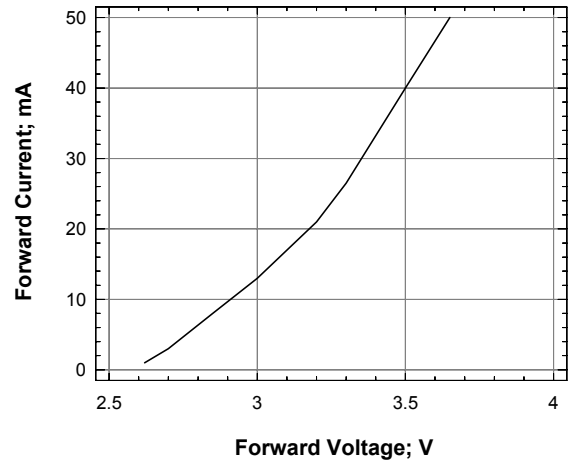
| Brightness Group | Luminous Intensity @<br>IV (mcd) |
|------------------|----------------------------------|
| V2               | 900.0...1125.0                   |
| W1               | 1125.0...1400.0                  |
| W2               | 1400.0...1800.0                  |

Luminous intensity is measured with an accuracy of ± 11%.

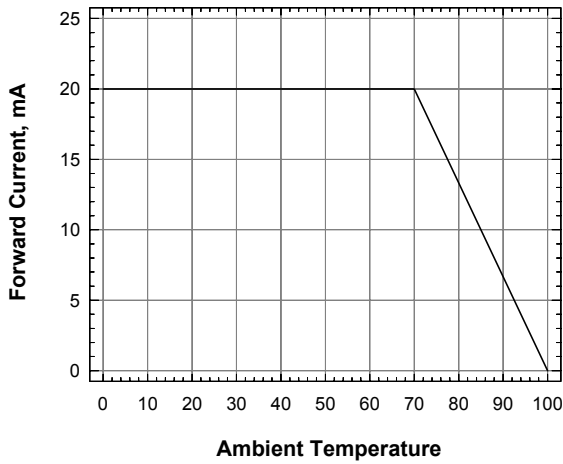
**Relative Luminous Intensity Vs Forward Current**



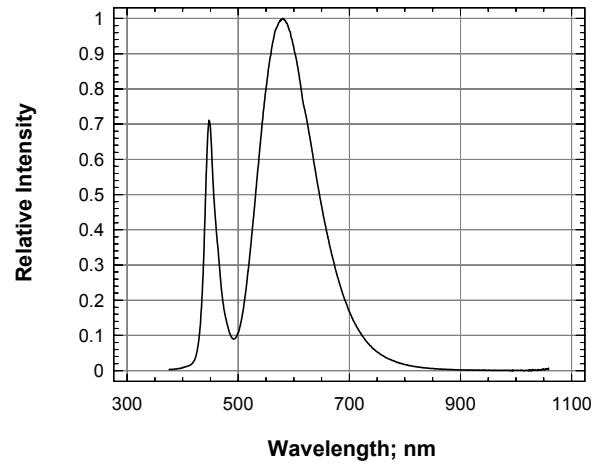
**Forward Current Vs Forward Voltage**



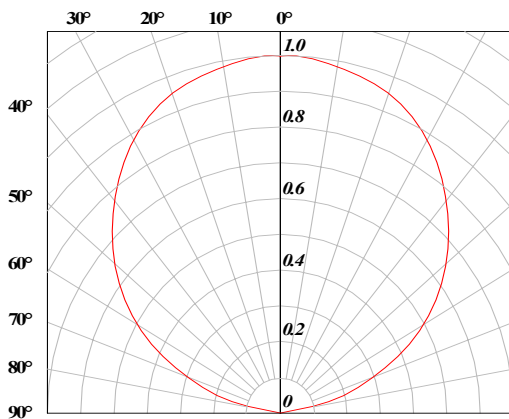
**Maximum Forward Current Vs Temperature**



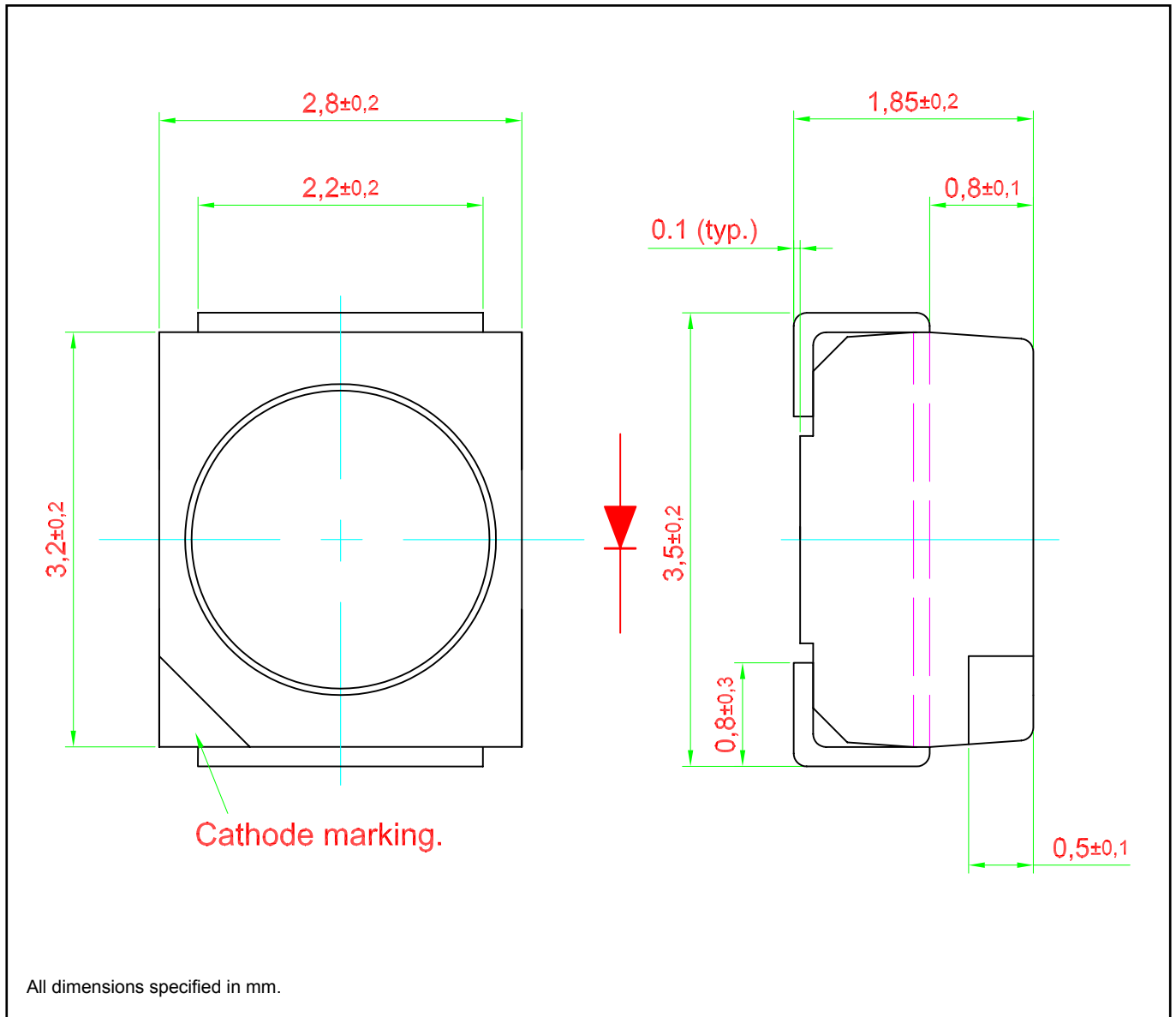
**Relative Intensity Vs Wavelength**



**Radiation Pattern**



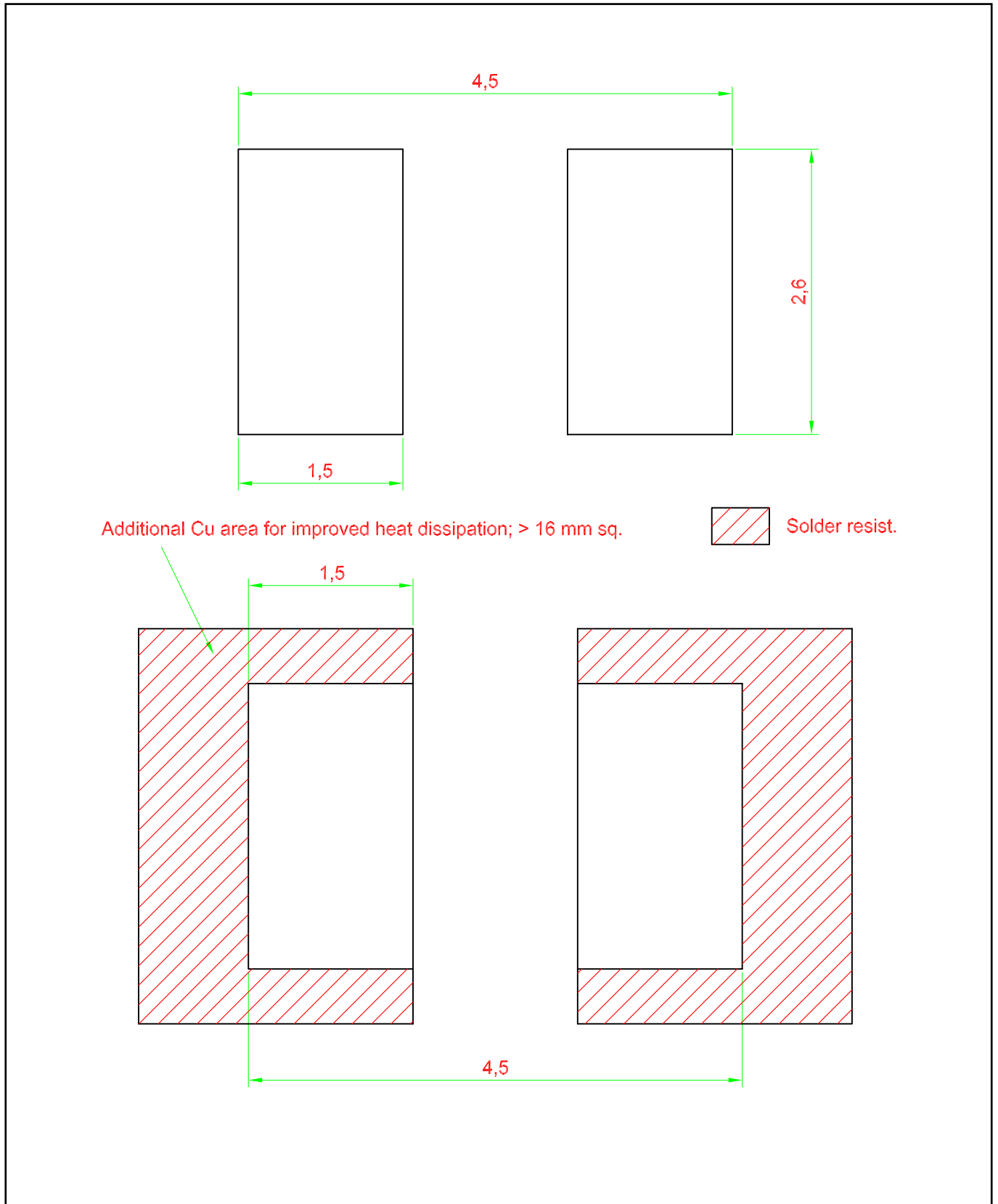
**DomiLED™ • InGaN Warm White : DRF-NJG Package Outlines**



**Material**

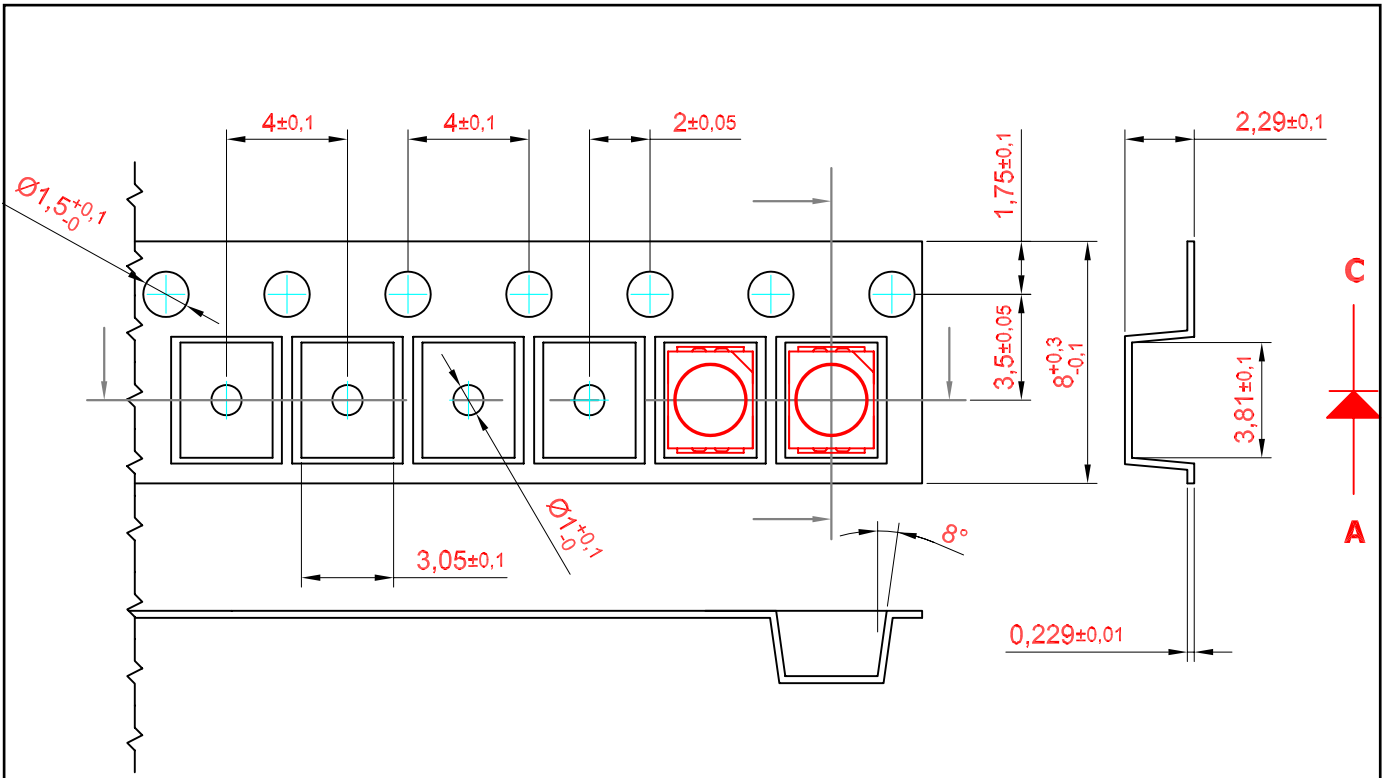
| Material        |                                         |
|-----------------|-----------------------------------------|
| Lead-frame      | Cu Alloy With Ag Plating                |
| Package         | High Temperature Resistant Plastic, PPA |
| Encapsulant     | Silicone Resin                          |
| Soldering Leads | Sn-Sn Plating                           |

**Recommended Solder Pad**



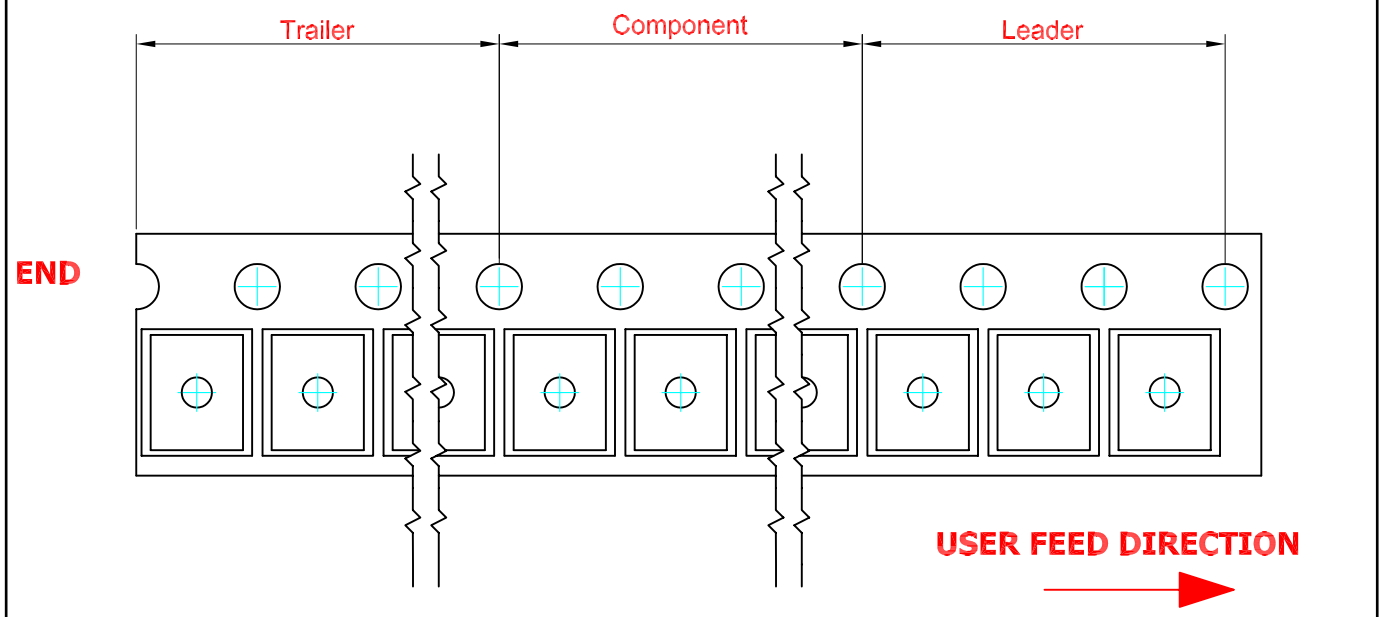
**Taping and orientation**

- Reels come in quantity of 2000 units.
- Reel diameter is 180 mm.



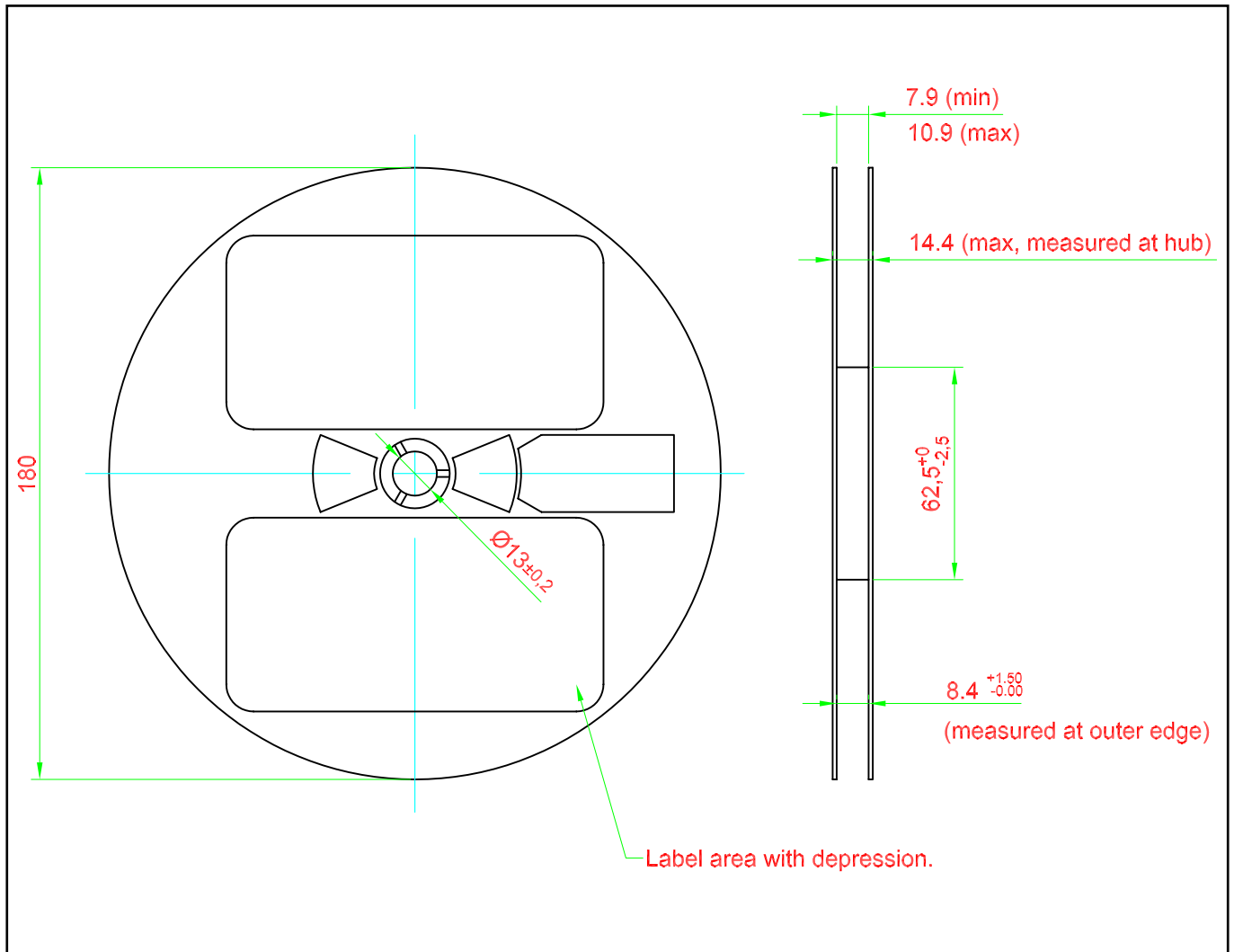
200 mm min. for  $\varnothing 180$  reel.  
200 mm min. for  $\varnothing 330$  reel.

480 mm min. for  $\varnothing 180$  reel.  
960 mm min. for  $\varnothing 330$  reel.

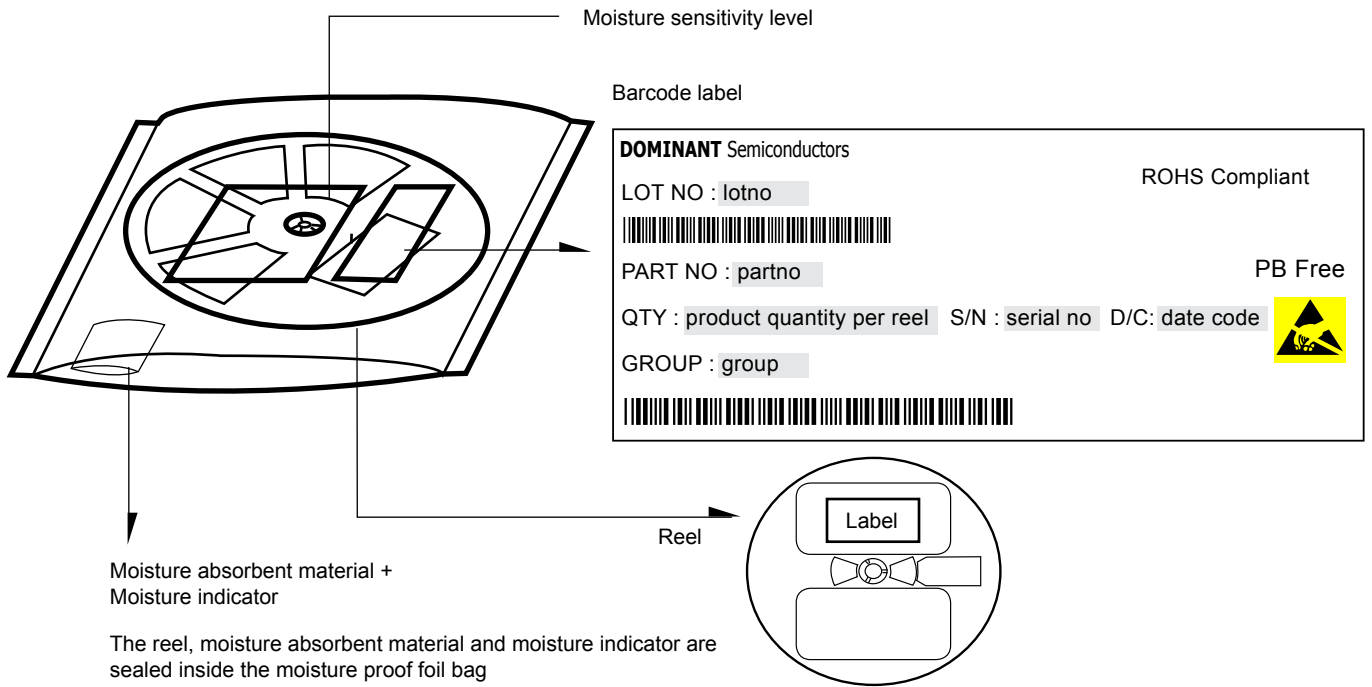




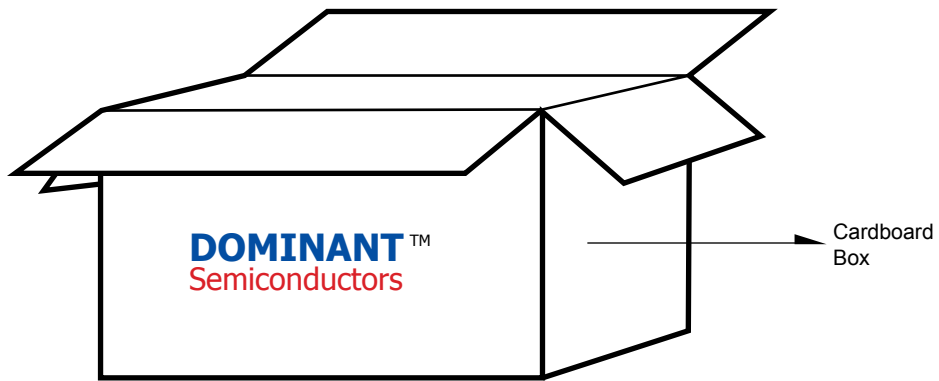
**Packaging Specification**



**Packaging Specification**



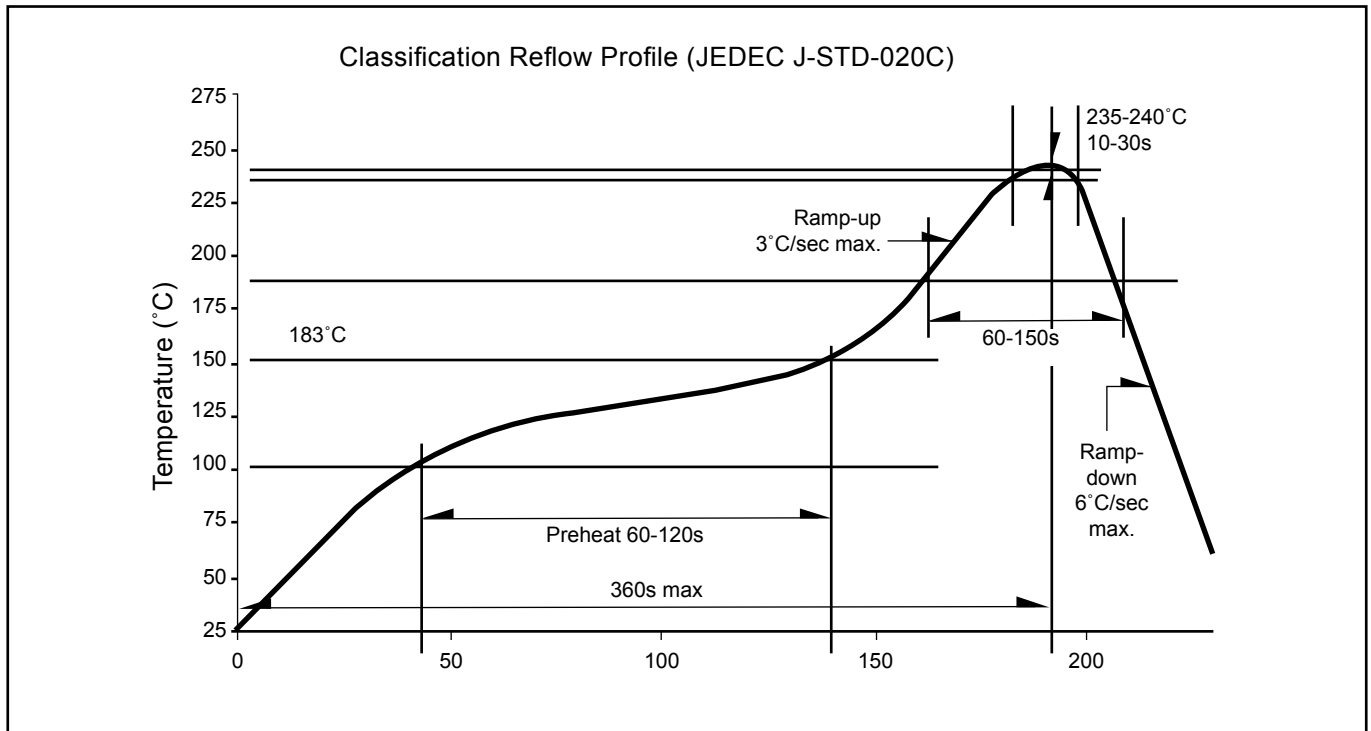
|               | Average 1pc DomiLED/Multi DomiLED | 1 completed bag (2000pcs) |
|---------------|-----------------------------------|---------------------------|
| Weight (gram) | 0.034                             | 190 ± 10                  |



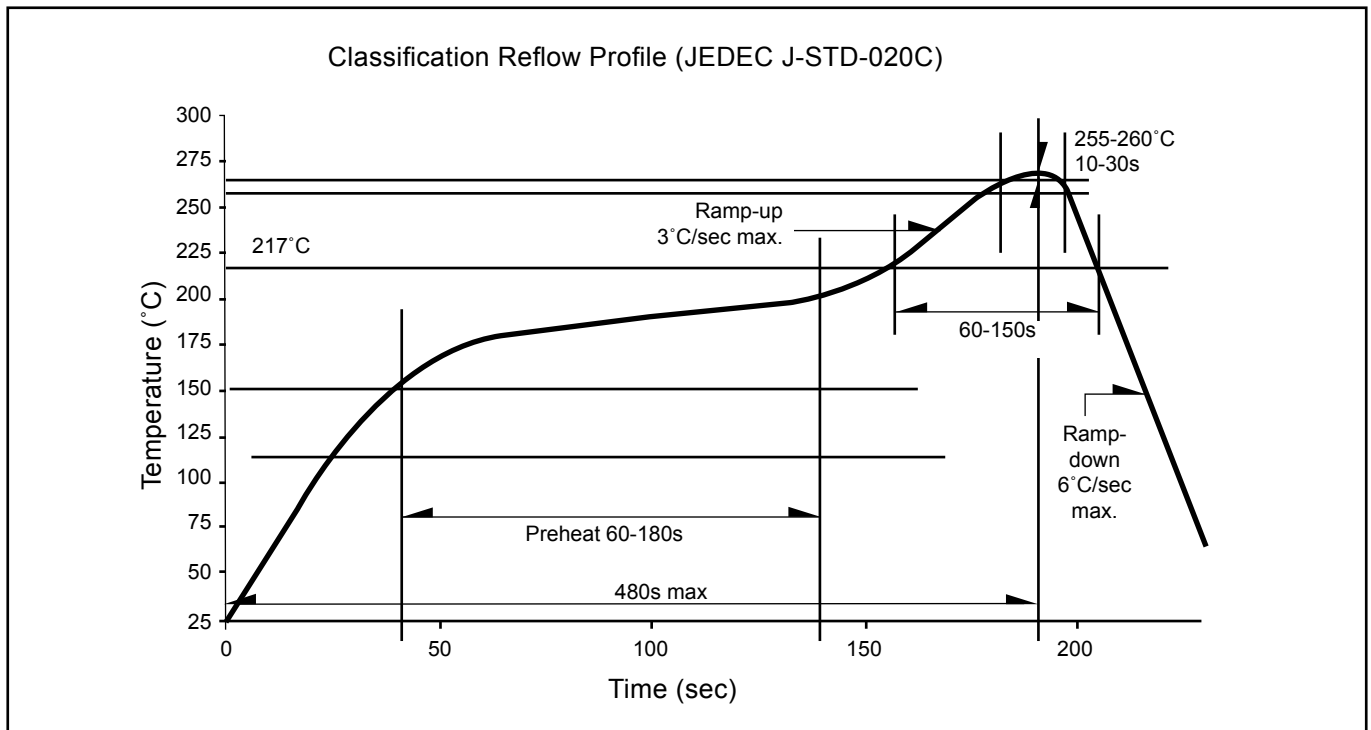
**For DomiLED™**

| 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 | 30,000 MAX           |
| Large              | 416 x 516 x 476 | 1.74                  | 96 reels MAX | 192,000 MAX          |

**Recommended Sn-Pb IR-Reflow Soldering Profile**



**Recommended Pb-free Soldering Profile**



**Revision History**

| Page | Subjects        | Date of Modification |
|------|-----------------|----------------------|
| -    | Initial Release | 23 Mar 2009          |
|      |                 |                      |
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## About Us

DOMINANT Semiconductors is a dynamic Malaysian Corporation that is among the world's leading SMT LED Manufacturers. An excellence – driven organization, it offers a comprehensive product range for diverse industries and applications. Featuring an internationally certified quality assurance acclaim, DOMINANT's extra bright LEDs are perfectly suited for various lighting applications in the automotive, consumer and communications as well as industrial sectors. With extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing, research and testing capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Semiconductors can be found on the Internet at <http://www.dominant-semi.com>.

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