

### 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.
- > Based on InGaN technology.
- > 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 both IR reflow soldering.
- > Environmental friendly; RoHS compliance.



### Applications:

- > Automotive: Interior applications, eg: switches, telematics, climate control system, dashboard, etc.  
Exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL)
- > Consumer Appliances: Backlighting illumination as in PDAs, LCD TV.
- > Communication: indicator and backlight in mobile phone, flash light.
- > Signage: full colour display video notice board, signage, special effect lighting.
- > Industrial: white goods (eg: Oven, microwave, etc.), light bar, illuminated advertising.



### Optical Characteristics at Tj=25°C

| Part Ordering Number | Color | Viewing Angle° | Luminous Intensity @ IF = 20mA IV (mcd) |        |        |
|----------------------|-------|----------------|-----------------------------------------|--------|--------|
|                      |       |                | Min.                                    | Typ.   | Max.   |
| DDW-PJG-WX1-1        | White | 120            | 1125.0                                  | 1800.0 | 2240.0 |

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

### Electrical Characteristics at Tj=25°C

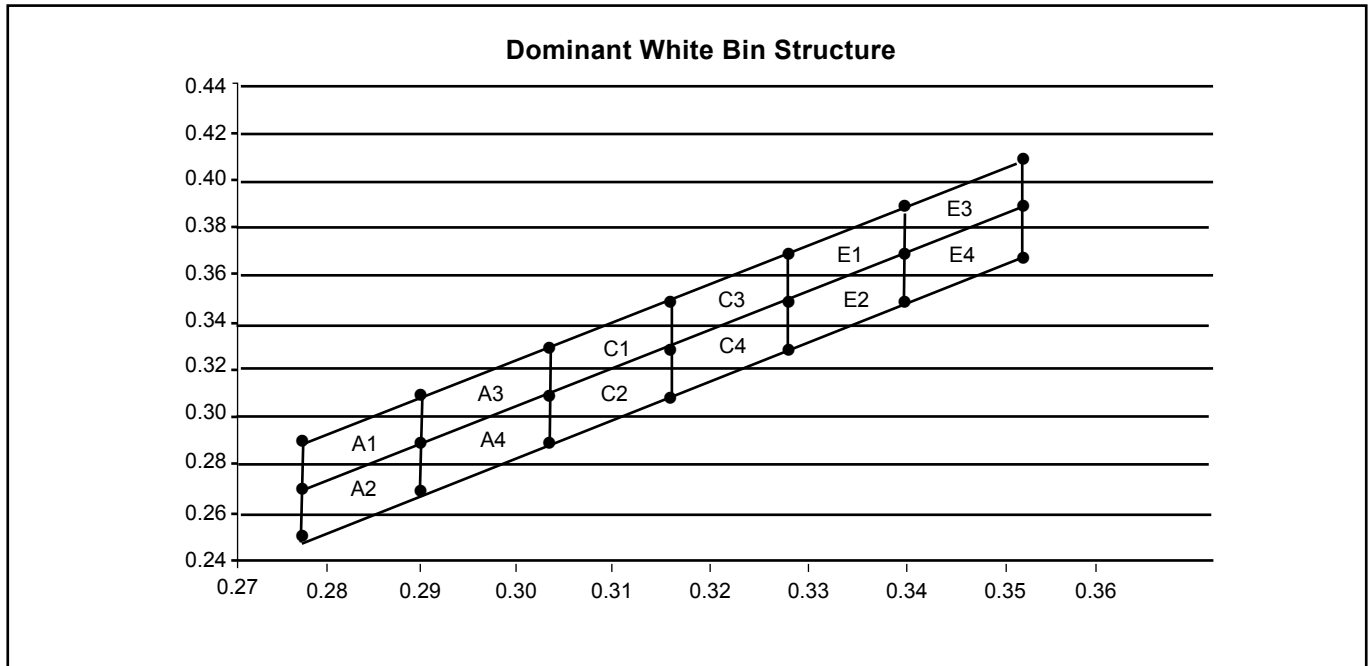
| Part Number | Vf @ If = 20 mA |          |          | Vr @ Ir = 10 µA |
|-------------|-----------------|----------|----------|-----------------|
|             | Min. (V)        | Typ. (V) | Max. (V) | Min. (V)        |
| DDW-PJG     | 2.8             | 3.2      | 3.8      | 5.0             |

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

### Absolute Maximum Ratings

|                                                              | Maximum Value | Unit |
|--------------------------------------------------------------|---------------|------|
| DC forward current                                           | 30            | mA   |
| Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.10)           | 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   |
| Thermal resistance                                           |               |      |
| - Junction / ambient, Rth JA                                 | 340           | K/W  |
| - Junction / solder point, Rth JS                            | 180           | K/W  |
| (Mounting on FR4 PCB, pad size ≥ 16 mm <sup>2</sup> per pad) |               |      |

**DDW, White Color Grouping**



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

| Bin |    |        |        |        |        |
|-----|----|--------|--------|--------|--------|
| A1  | Cx | 0.2775 | 0.2900 | 0.2900 | 0.2775 |
|     | Cy | 0.2732 | 0.2939 | 0.3114 | 0.2907 |
| A2  | Cx | 0.2775 | 0.2900 | 0.2900 | 0.2775 |
|     | Cy | 0.2557 | 0.2764 | 0.2939 | 0.2732 |
| A3  | Cx | 0.2900 | 0.3025 | 0.3025 | 0.2900 |
|     | Cy | 0.2939 | 0.3146 | 0.3321 | 0.3114 |
| A4  | Cx | 0.2900 | 0.3025 | 0.3025 | 0.2900 |
|     | Cy | 0.2764 | 0.2971 | 0.3146 | 0.2939 |
| C1  | Cx | 0.3025 | 0.3150 | 0.3150 | 0.3025 |
|     | Cy | 0.3146 | 0.3354 | 0.3529 | 0.3321 |
| C2  | Cx | 0.3025 | 0.3150 | 0.3150 | 0.3025 |
|     | Cy | 0.2971 | 0.3179 | 0.3354 | 0.3146 |
| C3  | Cx | 0.3150 | 0.3275 | 0.3275 | 0.3150 |
|     | Cy | 0.3354 | 0.3561 | 0.3736 | 0.3529 |
| C4  | Cx | 0.3150 | 0.3275 | 0.3275 | 0.3150 |
|     | Cy | 0.3179 | 0.3386 | 0.3561 | 0.3354 |

| Bin |    |        |        |        |        |
|-----|----|--------|--------|--------|--------|
| E1  | Cx | 0.3275 | 0.3400 | 0.3400 | 0.3275 |
|     | Cy | 0.3561 | 0.3768 | 0.3943 | 0.3736 |
| E2  | Cx | 0.3275 | 0.3400 | 0.3400 | 0.3275 |
|     | Cy | 0.3386 | 0.3593 | 0.3768 | 0.3561 |
| E3  | Cx | 0.3400 | 0.3525 | 0.3525 | 0.3400 |
|     | Cy | 0.3768 | 0.3975 | 0.4150 | 0.3943 |
| E4  | Cx | 0.3400 | 0.3525 | 0.3525 | 0.3400 |
|     | Cy | 0.3593 | 0.3800 | 0.3975 | 0.3768 |

Dominant color coordinate is measured with an accuracy of  $\pm 0.01$ .

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

| Brightness Group | Luminous Intensity @ IV (mcd) |
|------------------|-------------------------------|
| W1               | 1125.0...1400.0               |
| W2               | 1400.0...1800.0               |
| X1               | 1800.0...2240.0               |

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

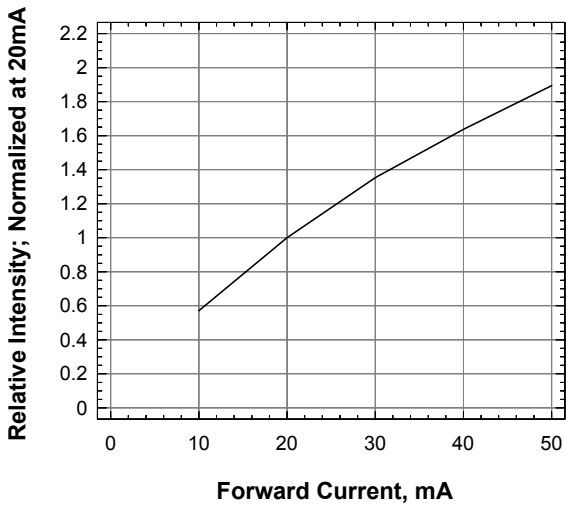
**Vf Binning (Optional)**

| Vf Bin @ 20mA | Forward Voltage (V) |
|---------------|---------------------|
| 0A            | 2.75 ... 3.05       |
| 00            | 3.05 ... 3.35       |
| 01            | 3.35 ... 3.65       |
| 02            | 3.65 ... 3.95       |

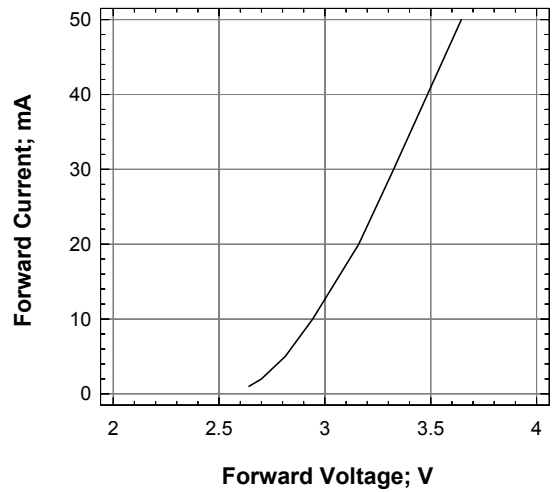
Forward voltage, Vf is measured with an accuracy of ± 0.1 V.

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

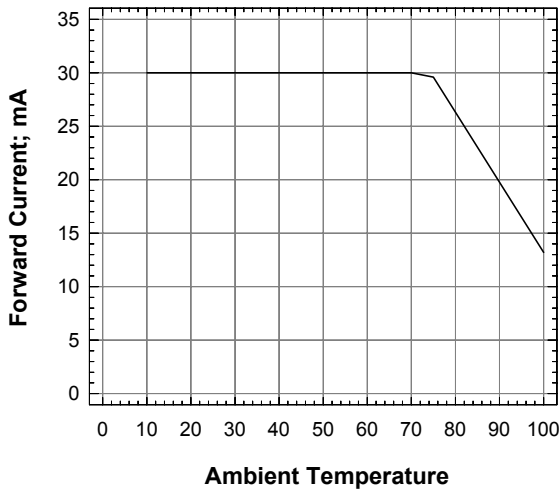
**Relative Luminous Intensity Vs Forward Current**



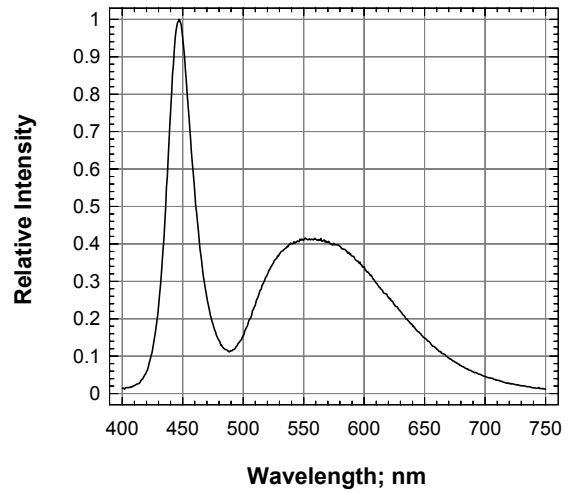
**Forward Current Vs Forward Voltage**



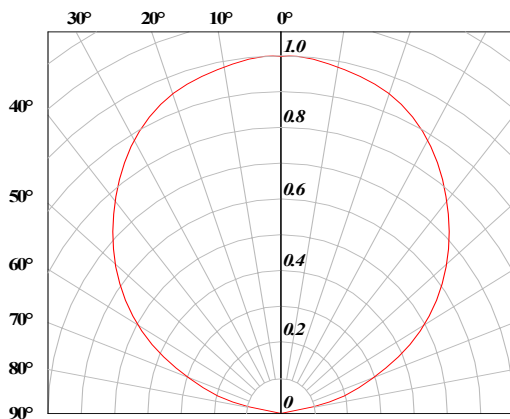
**Forward Current Vs Ambient Temperature**



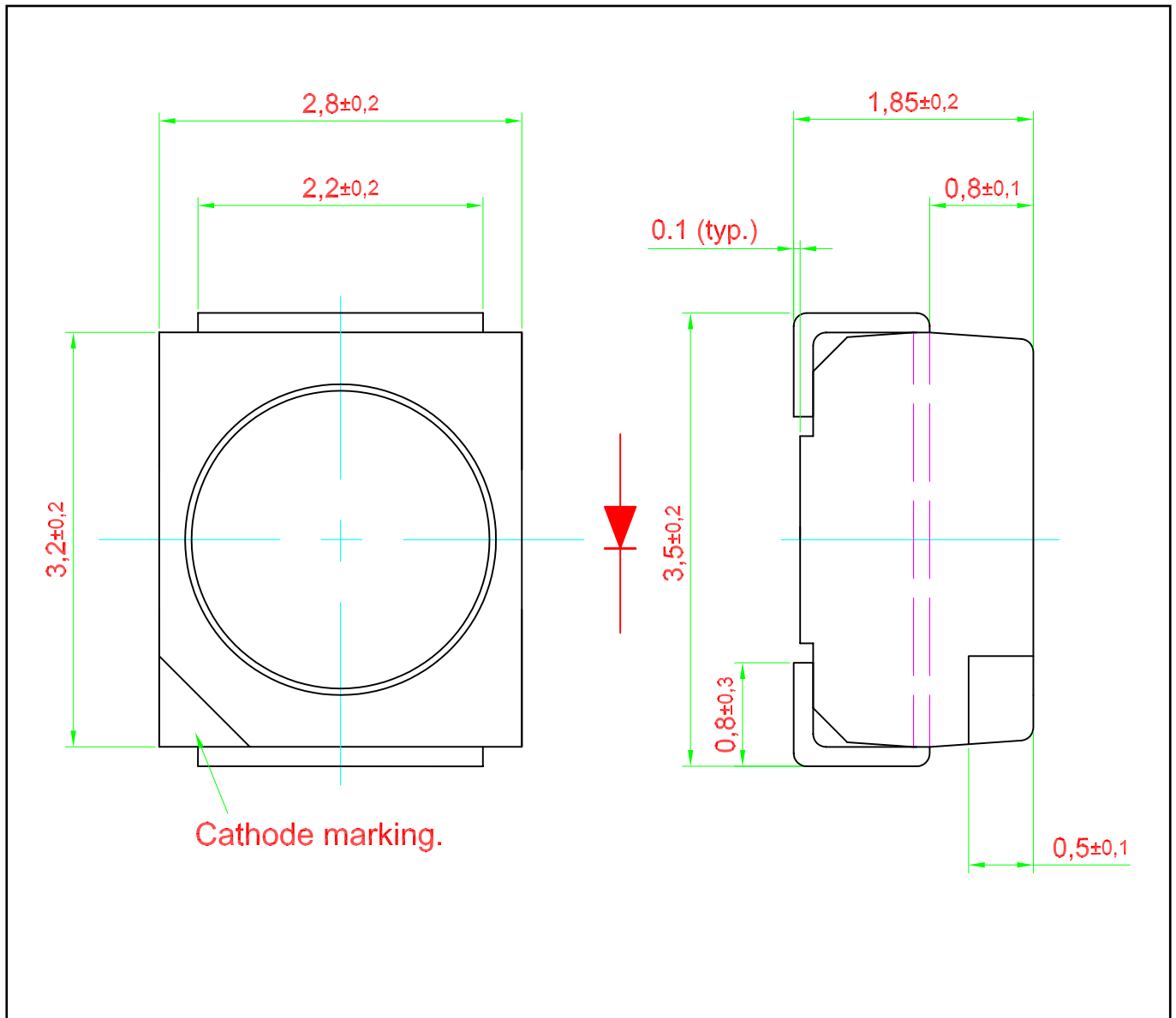
**Relative Intensity Vs Wavelength**



**Radiation Pattern**



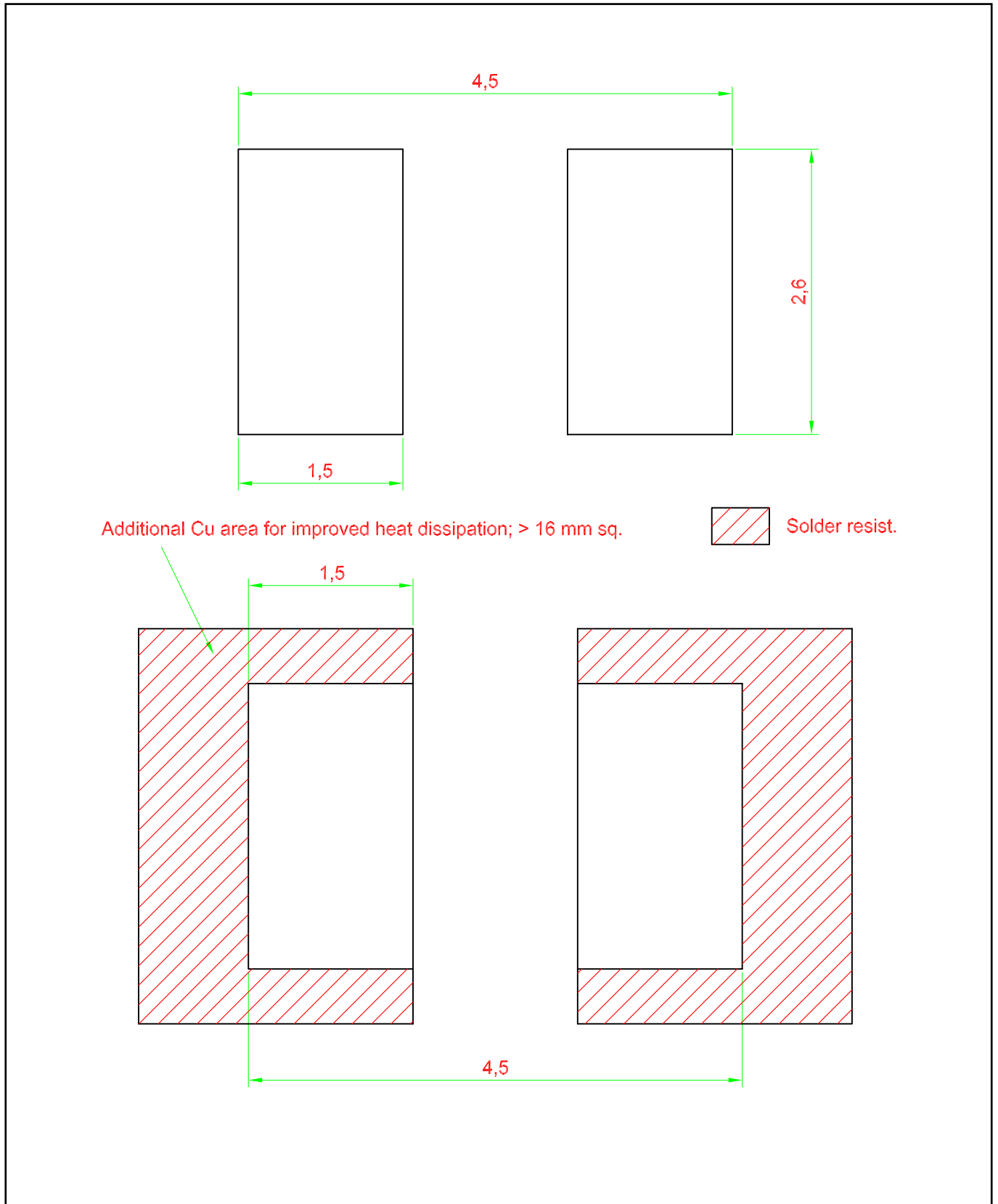
**DomiLED™ • InGaN White : DDW-PJG Package Outlines**



**Material**

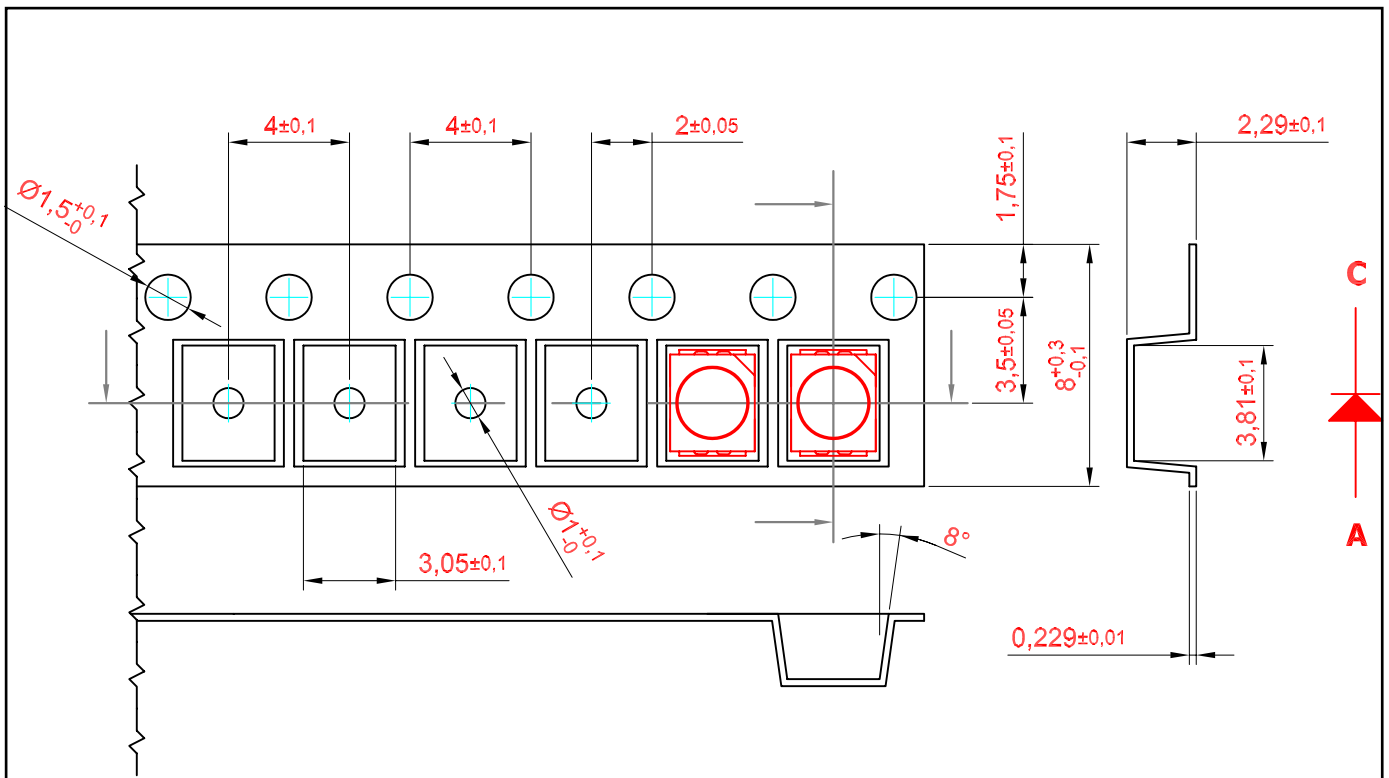
| Material        |                                         |
|-----------------|-----------------------------------------|
| Lead-frame      | Cu Alloy With Ag Plating                |
| Package         | High Temperature Resistant Plastic, PPA |
| Encapsulant     | Silicone Resin                  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

### Recommended Solder Pad



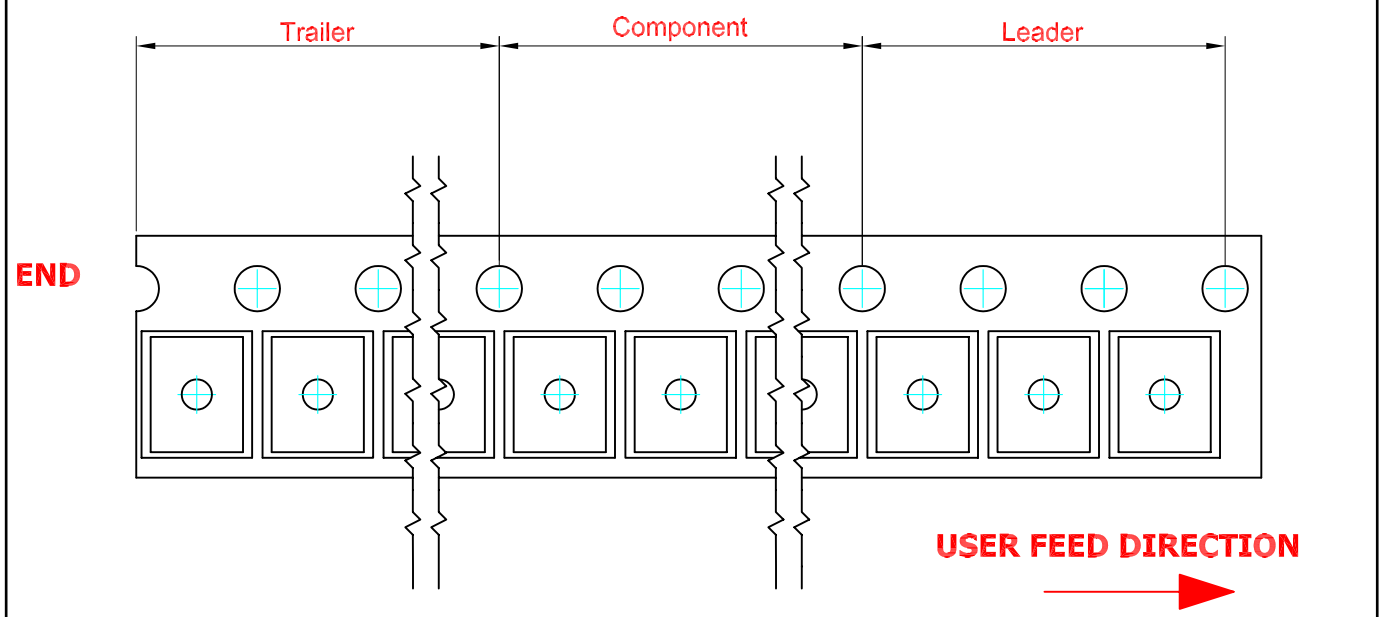
### Taping and orientation

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



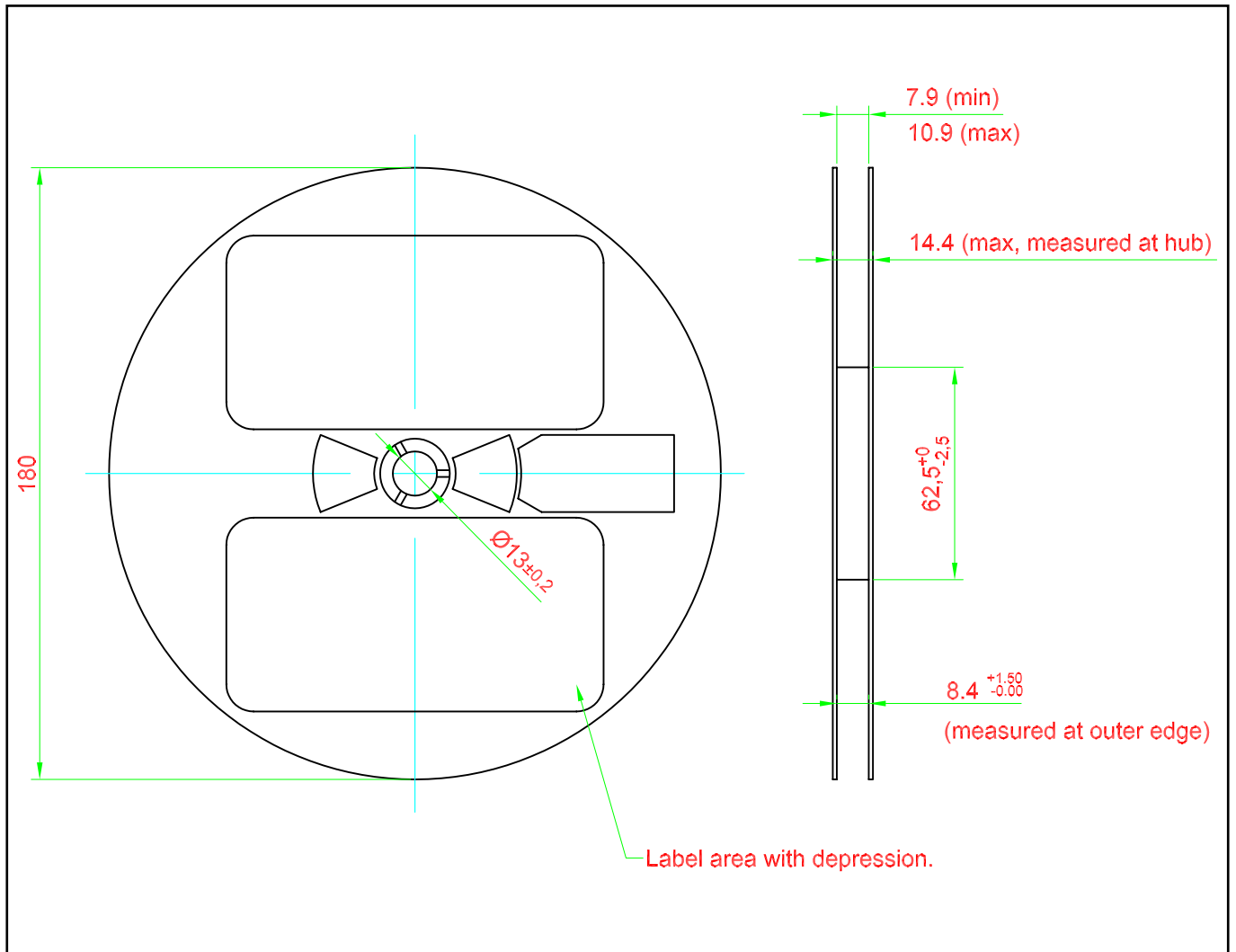
200 mm min. for  $\varnothing 180$  reel.  
200 mm min. for  $\varnothing 330$  reel.

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

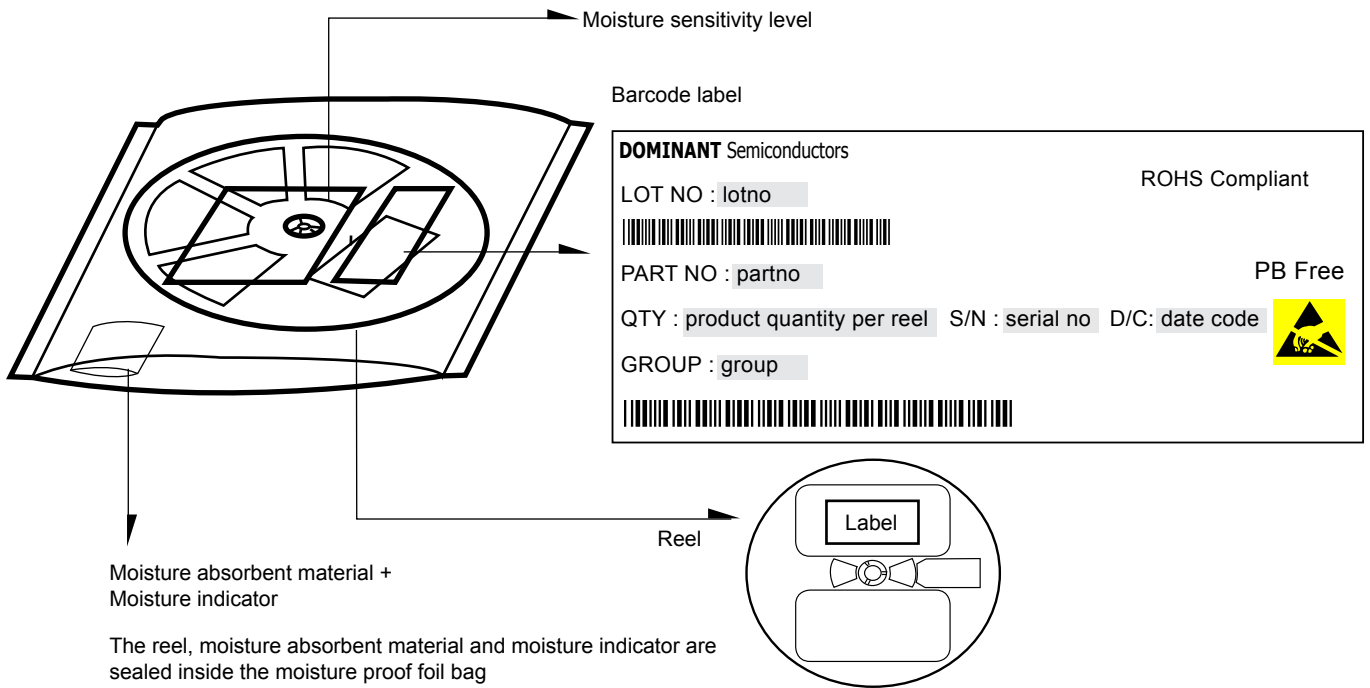




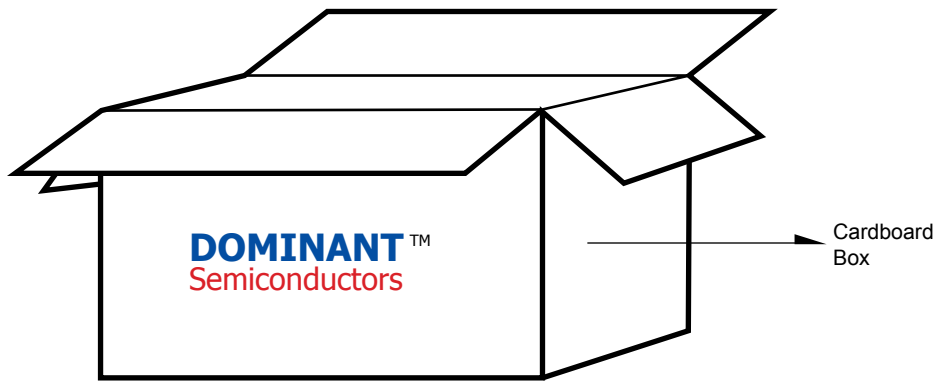
### Packaging Specification



**Packaging Specification**



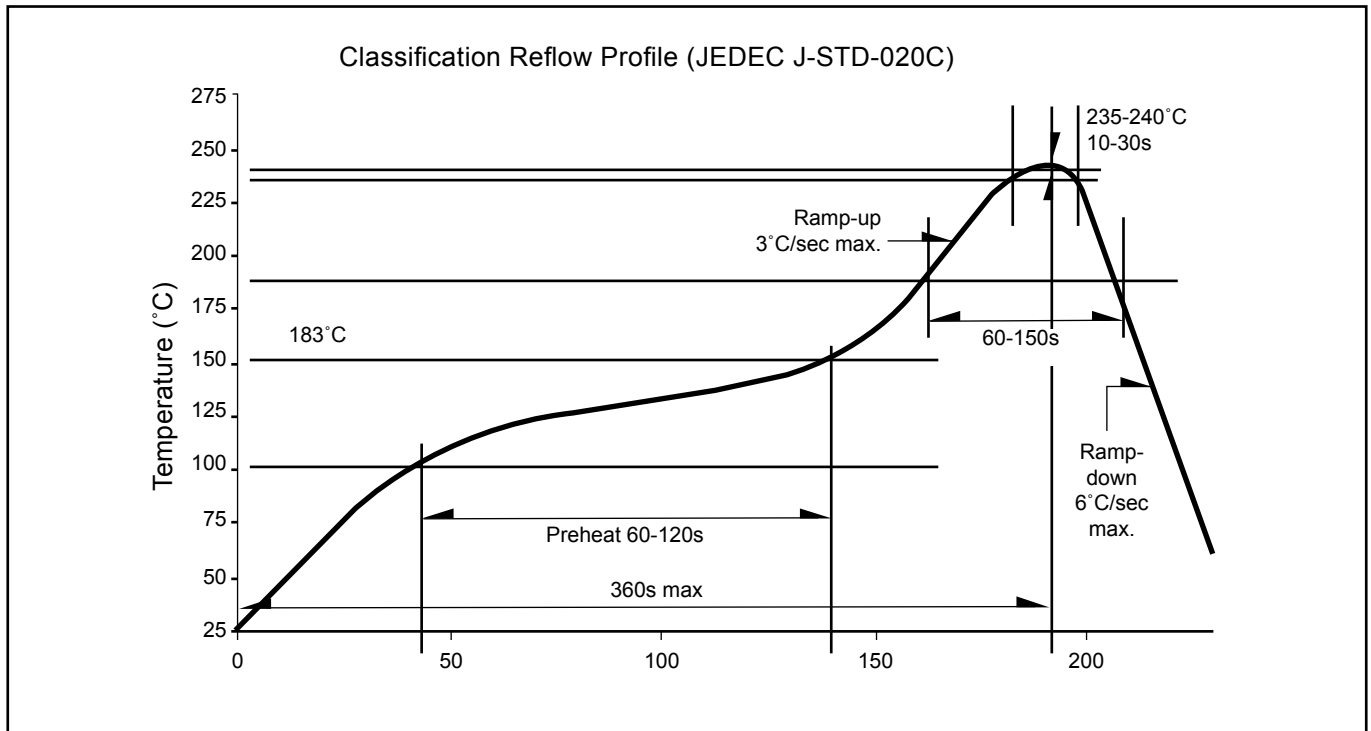
|               | Average 1pc DomiLED/Multi DomiLED | 1 completed bag (2000pcs) |
|---------------|-----------------------------------|---------------------------|
| Weight (gram) | 0.034                             | 190 ± 10                  |



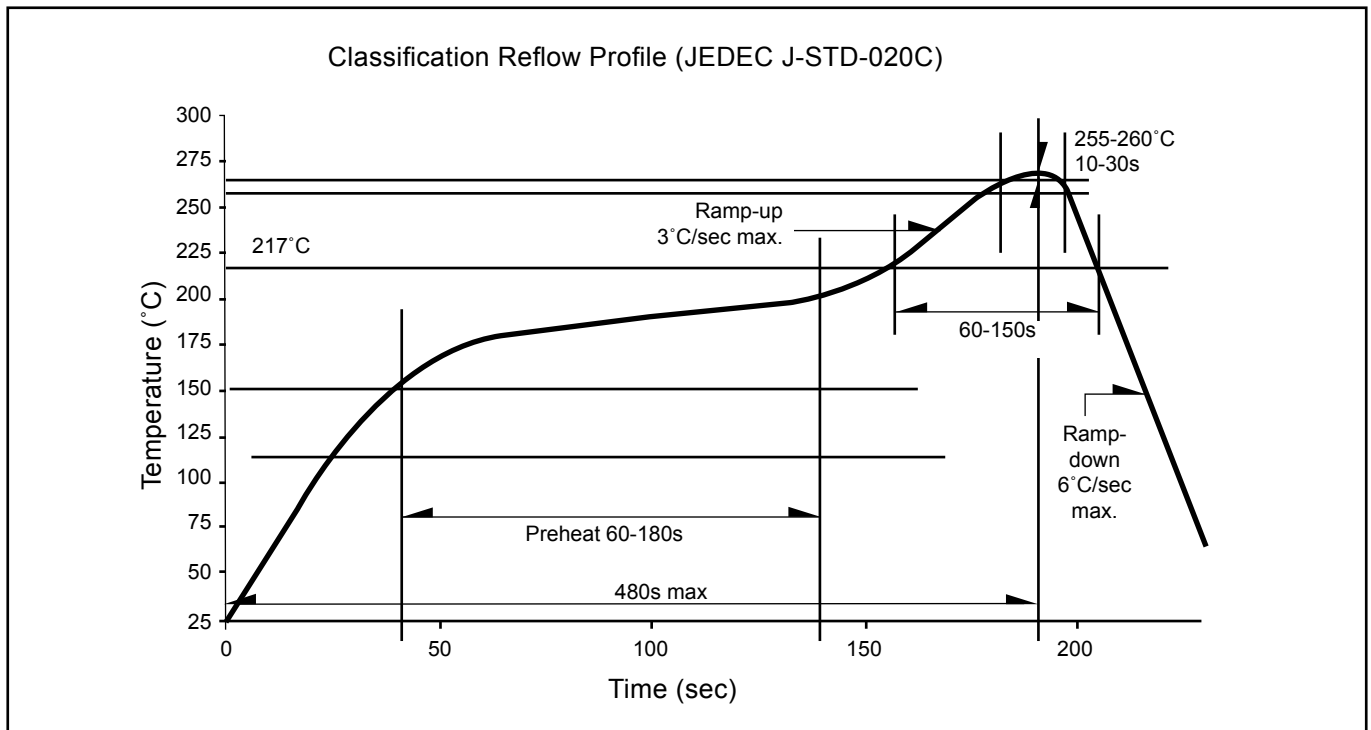
**For DomiLED™**

| 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                       | 18 Feb 2009          |
| 2    | Add Vf binning                        | 8 Jul 2008           |
| 2    | Update Maximum Forward Current = 30mA | 09 Jul 2009          |
|      |                                       |                      |
|      |                                       |                      |
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|      |                                       |                      |

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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>.

### **Please contact us for more information:**

#### Head Quarter

DOMINANT Semiconductors Sdn. Bhd.  
Lot 6, Batu Berendam, FTZ Phase III, 75350 Melaka, Malaysia  
Tel: (606) 283 3566 Fax: (606) 283 0566  
E-mail: [sales@dominant-semi.com](mailto:sales@dominant-semi.com)

#### DOMINANT Semiconductors Malaysia Sdn. Bhd. Shanghai Representative Office

DOMINANT Semiconductors (Shenzhen) Co. Ltd.  
Rm 1007, DaZhong Building, No. 1515 Zhong Shan (W) Rd, Shanghai, China 200235  
Tel: +86 21 6428 6428 Fax: +86 21 6428 6880  
E-mail: [sales\\_china@dominant-semi.com](mailto:sales_china@dominant-semi.com)

#### DOMINANT Korea Sales Office

DOMINANT Semiconductors Korea Inc.  
#709, Yatap Leaders Bldg., 342-1 Yatap-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-828 Korea.  
Tel: +82-31-701-5203 Fax: +82-31-701-5204  
E-mail: [sales\\_korea@dominant-semi.com](mailto:sales_korea@dominant-semi.com)

#### DOMINANT U.S.A Sales Office

25 Rockaway Road, 08833 Lebanon, New Jersey, USA  
Tel: (908) 439-9930 Cell: (908) 343-5810 Fax: (908) 439-9929  
E-mail: [don.wendel@dominant-semi.com](mailto:don.wendel@dominant-semi.com)

#### DOMINANT Europe Sales Office

DOMINANT Semiconductors Europe GmbH  
Raiffeisenstr. 38, 74906 Bad Rappenau Germany  
Tel: +49 (0) 7264-89010-10 / +49 (0) 7264-89010-11 Cell: +49 173-6907370 / +49 173-6907751  
Fax: +49 (0) 7264-89010-29  
E-mail: [gerd.wachno@dominant-semi.eu](mailto:gerd.wachno@dominant-semi.eu); [hartmut.wettengl@dominant-semi.eu](mailto:hartmut.wettengl@dominant-semi.eu)

#### DOMINANT India Sales Office

C-11, Vasanth Business Centre #86, TTK Road, Alwarpet Chennai - 600 018, INDIA  
Tel: 91-44-42030616 / 516 Cell: 91-9444920537 Fax: 91-9444920616  
E-mail: [pravat.behera@dominant-semi.com](mailto:pravat.behera@dominant-semi.com)

