DOMINANT™
Opto Technologies
*Innovating Illumination*

DATA SHEET :

# DomiLED™

## InGaN : DDZB-LJG

### 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 both IR reflow soldering.
- > Environmental friendly; RoHS compliance.

### Applications:

- > Automotive:
  Interior application: eg: Switches, telematics, climate control system, dashboard.
  Exterior application: eg: Signal Lighting, Center High Mounted Stop Light (CHMSL), Fog lamp, Rear Combination Lights (RCLs).

## Optical Characteristics at Tj=25°C

| Part Ordering Number | Viewing Angle° | Luminous Intensity @ 20mA IV (mcd) Min. | Typ. | Max. |
|---|---|---|---|---|
| DDZB-LJG-WX2-1 | 120 | 1125.0 | 1800.0 | 2850.0 |

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 Min. (V) | Typ. (V) | Max. (V) | Vr @ Ir = 10 μA Min. (V) |
|---|---|---|---|---|
| DDZB-LJG | 2.8 | 3.2 | 3.6 | 5.0 |

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

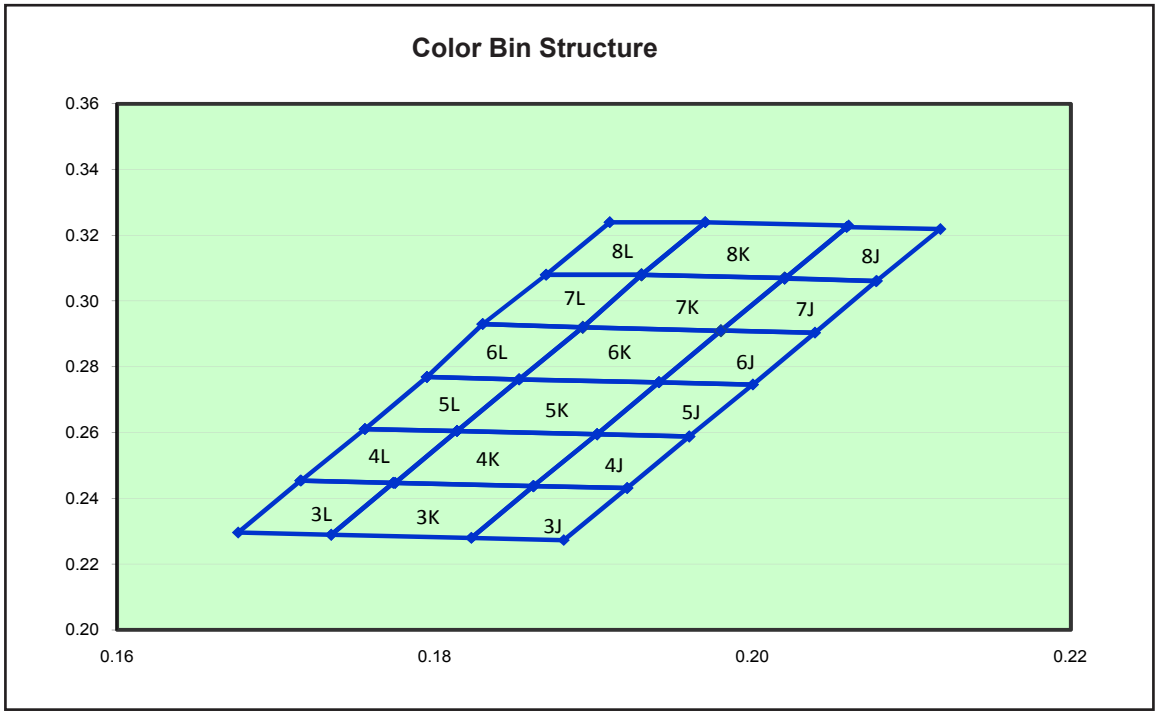
## Absolute Maximum Ratings

| | Maximum Value | Unit |
|---|---|---|
| DC forward current | 30 | mA |
| Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005) | 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) | 110 | mW |
| Thermal resistance<br>- Junction / ambient, $R_{th\ JA}$<br>- Junction / solder point, $R_{th\ JS}$<br>(Mounting on FR4 PCB, pad size >= 16 $mm^2$ per pad) | <br>340<br>180 | <br>K/W<br>K/W |

## Characteristics

| | Symbol | Part Number | Value | Unit |
|---|---|---|---|---|
| Temperature coefficient of $V_F$ (typ)<br>$I_F$ = 20mA; 0 ˚C <= T <= 100 ˚C | $TC_V$ | DDZB-LJG | -3.08 | mV / K |
| Temperature coefficient of $I_V$ (typ)<br>$I_F$ = 20mA; 0 ˚C <= T <= 100 ˚C | $TC_{IV}$ | DDZB-LJG | -0.21 | % / K |
| Temperature coefficient of Cx (typ)<br>$I_F$ = 20mA; 0 ˚C <= T <= 100 ˚C | $TC_{Cx}$ | DDZB-LJG | -0.00013 | |
| Temperature coefficient of Cy (typ)<br>$I_F$ = 20mA; 0 ˚C <= T <= 100 ˚C | $TC_{Cy}$ | DDZB-LJG | -0.00041 | |

## Color Grouping




Chromaticity coordinate groups are measured with an accuracy of ± 0.01.

| Bin | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 3J | Cx | 0.1862 | 0.1823 | 0.1881 | 0.1921 |
| | Cy | 0.2437 | 0.2280 | 0.2273 | 0.2431 |
| 3K | Cx | 0.1774 | 0.1735 | 0.1823 | 0.1862 |
| | Cy | 0.2447 | 0.2289 | 0.2280 | 0.2437 |
| 3L | Cx | 0.1716 | 0.1676 | 0.1735 | 0.1774 |
| | Cy | 0.2454 | 0.2296 | 0.2289 | 0.2447 |
| 4J | Cx | 0.1902 | 0.1862 | 0.1921 | 0.1960 |
| | Cy | 0.2595 | 0.2437 | 0.2431 | 0.2588 |
| 4K | Cx | 0.1814 | 0.1775 | 0.1862 | 0.1902 |
| | Cy | 0.2605 | 0.2447 | 0.2437 | 0.2595 |
| 4L | Cx | 0.1756 | 0.1716 | 0.1775 | 0.1814 |
| | Cy | 0.2611 | 0.2454 | 0.2447 | 0.2605 |
| 5J | Cx | 0.1941 | 0.1902 | 0.1960 | 0.2000 |
| | Cy | 0.2753 | 0.2595 | 0.2588 | 0.2746 |
| 5K | Cx | 0.1853 | 0.1814 | 0.1902 | 0.1941 |
| | Cy | 0.2762 | 0.2605 | 0.2595 | 0.2753 |
| 5L | Cx | 0.1795 | 0.1756 | 0.1814 | 0.1853 |
| | Cy | 0.2769 | 0.2611 | 0.2605 | 0.2762 |
| 6J | Cx | 0.1980 | 0.1941 | 0.2000 | 0.2039 |
| | Cy | 0.2910 | 0.2753 | 0.2746 | 0.2904 |
| 6K | Cx | 0.1893 | 0.1853 | 0.1941 | 0.1980 |
| | Cy | 0.2920 | 0.2762 | 0.2753 | 0.2910 |
| 6L | Cx | 0.1830 | 0.1795 | 0.1853 | 0.1893 |
| | Cy | 0.2930 | 0.2769 | 0.2762 | 0.2920 |

| Bin | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 7J | Cx | 0.2020 | 0.1980 | 0.2039 | 0.2078 |
| | Cy | 0.3070 | 0.2910 | 0.2904 | 0.3060 |
| 7K | Cx | 0.1930 | 0.1893 | 0.1980 | 0.2020 |
| | Cy | 0.3080 | 0.2920 | 0.2910 | 0.3070 |
| 7L | Cx | 0.1870 | 0.1830 | 0.1893 | 0.1930 |
| | Cy | 0.3080 | 0.2930 | 0.2920 | 0.3080 |
| 8J | Cx | 0.2059 | 0.2020 | 0.2078 | 0.2118 |
| | Cy | 0.3225 | 0.3068 | 0.3061 | 0.3219 |
| 8K | Cx | 0.1970 | 0.1930 | 0.2020 | 0.2060 |
| | Cy | 0.3240 | 0.3080 | 0.3070 | 0.3230 |
| 8L | Cx | 0.1910 | 0.1870 | 0.1930 | 0.1970 |
| | Cy | 0.3240 | 0.3080 | 0.3080 | 0.3240 |

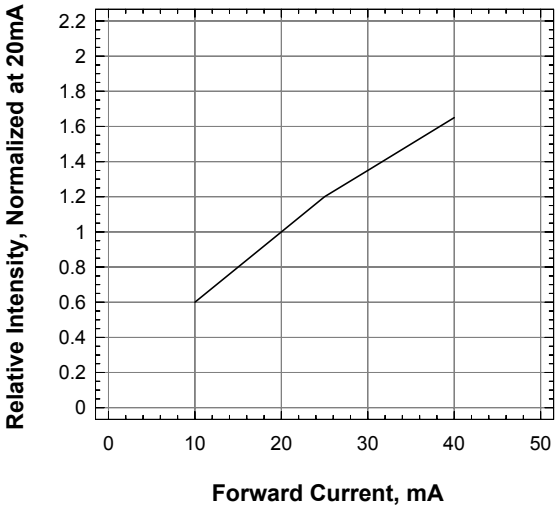
Dominant color coordinate is measured with an accuracy of ± 0.01.

## Luminous Intensity Group at Tj=25˚C

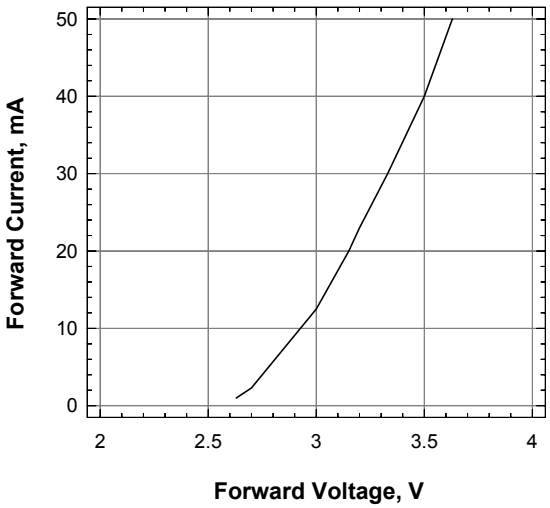
| Brightness Group | Luminous Intensity IV (mcd) |
|---|---|
| W1 | 1125.0 ... 1400.0 |
| W2 | 1400.0 ... 1800.0 |
| X1 | 1800.0 ... 2240.0 |
| X2 | 2240.0 ... 2850.0 |

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

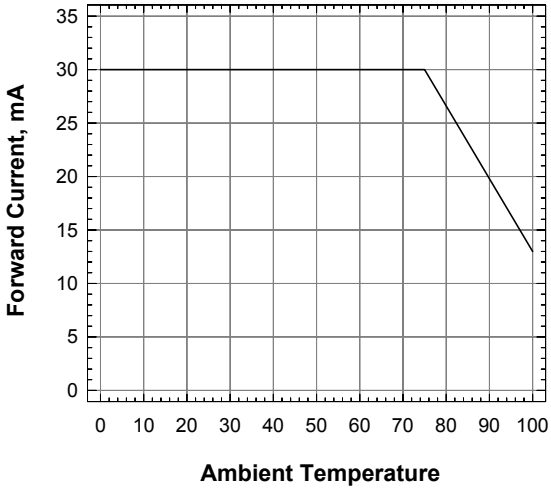
### Relative Intensity Vs Forward Current



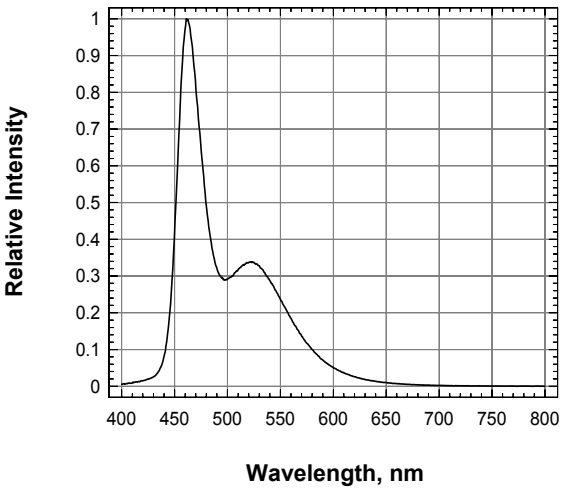

### Forward Current Vs Forward Voltage



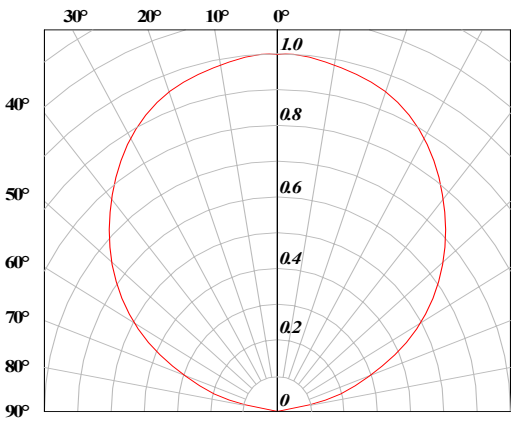

### Maximum Forward Current Vs Ambient Temperature



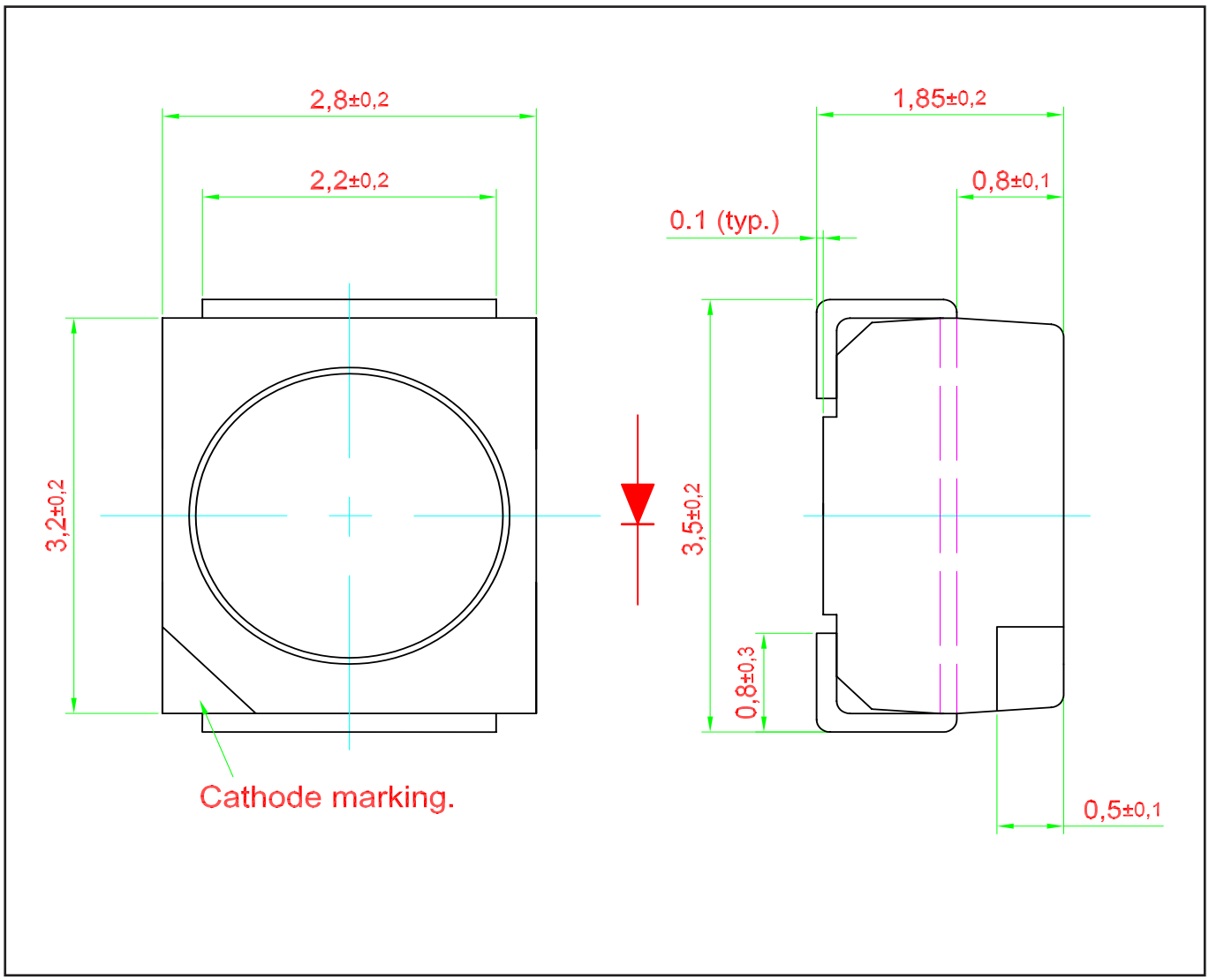

### Relative Intensity Vs Wavelength




### Radiation Pattern



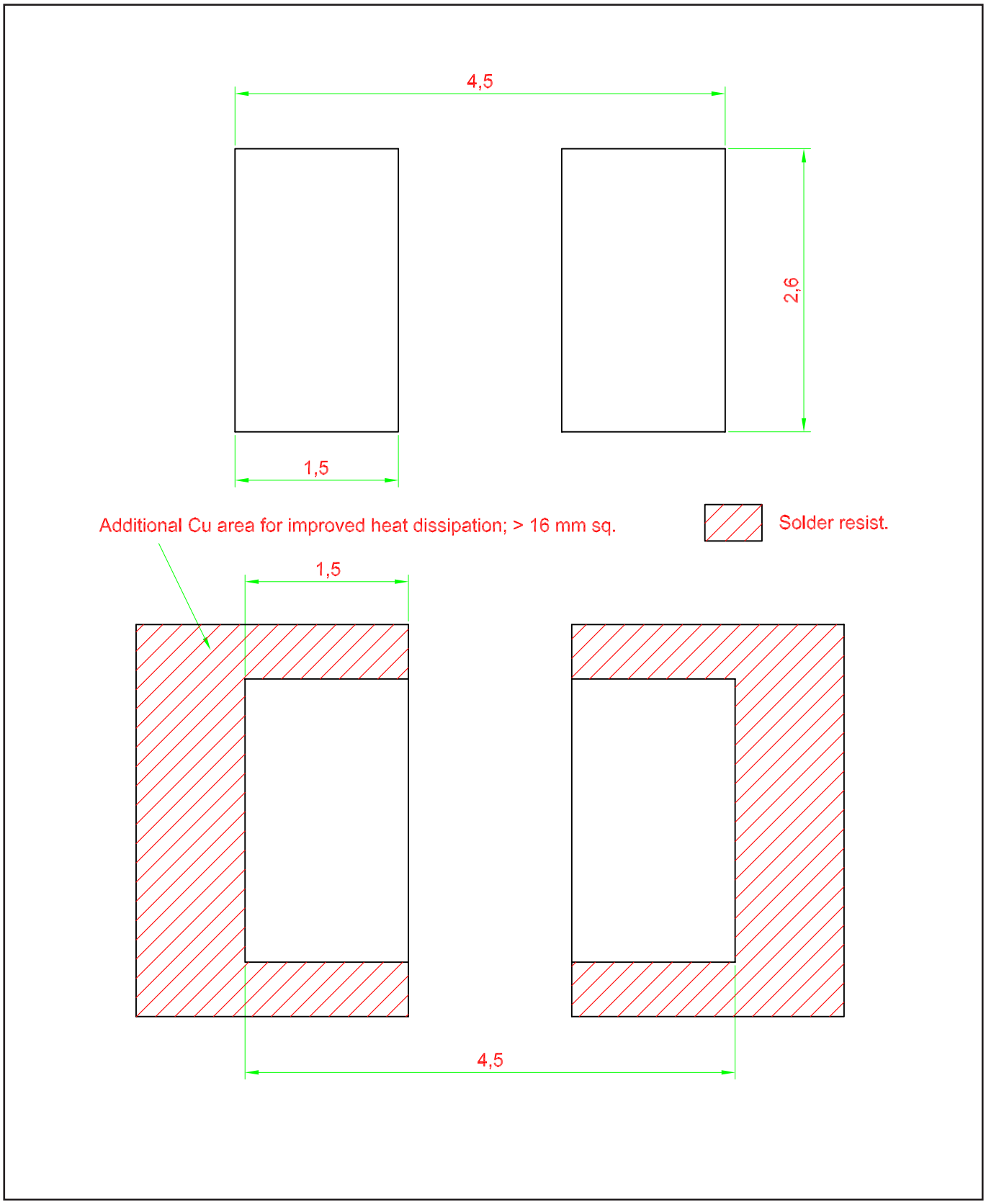
## DomiLED™ • InGaN : DDZB-LJG Package Outlines




## Material

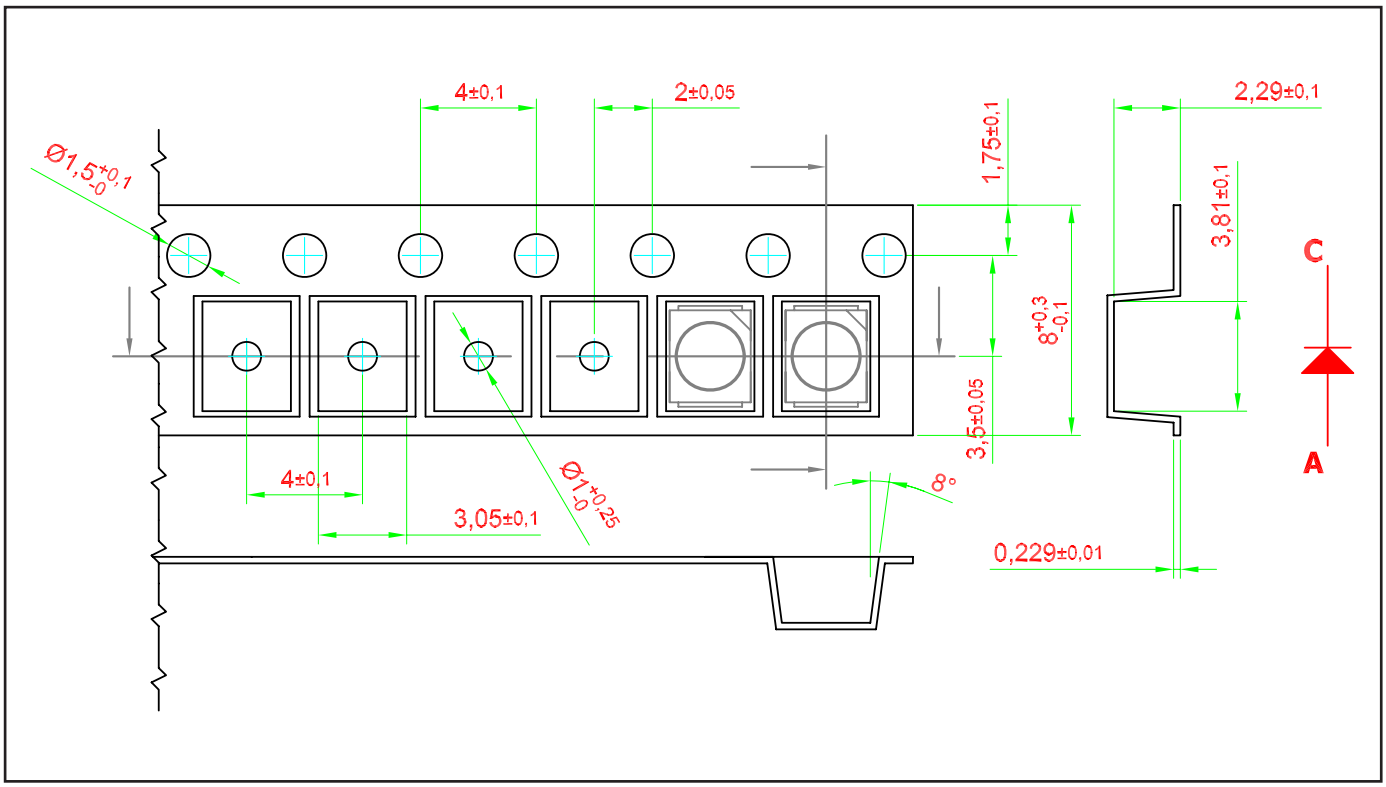
| | Material |
|---|---|
| Lead-frame | Cu Alloy With Ag Plating |
| Package | High Temperature Resistant Plastic, PPA |
| Encapsulant | Silicone Resin |
| Soldering Leads | Ag Plating |

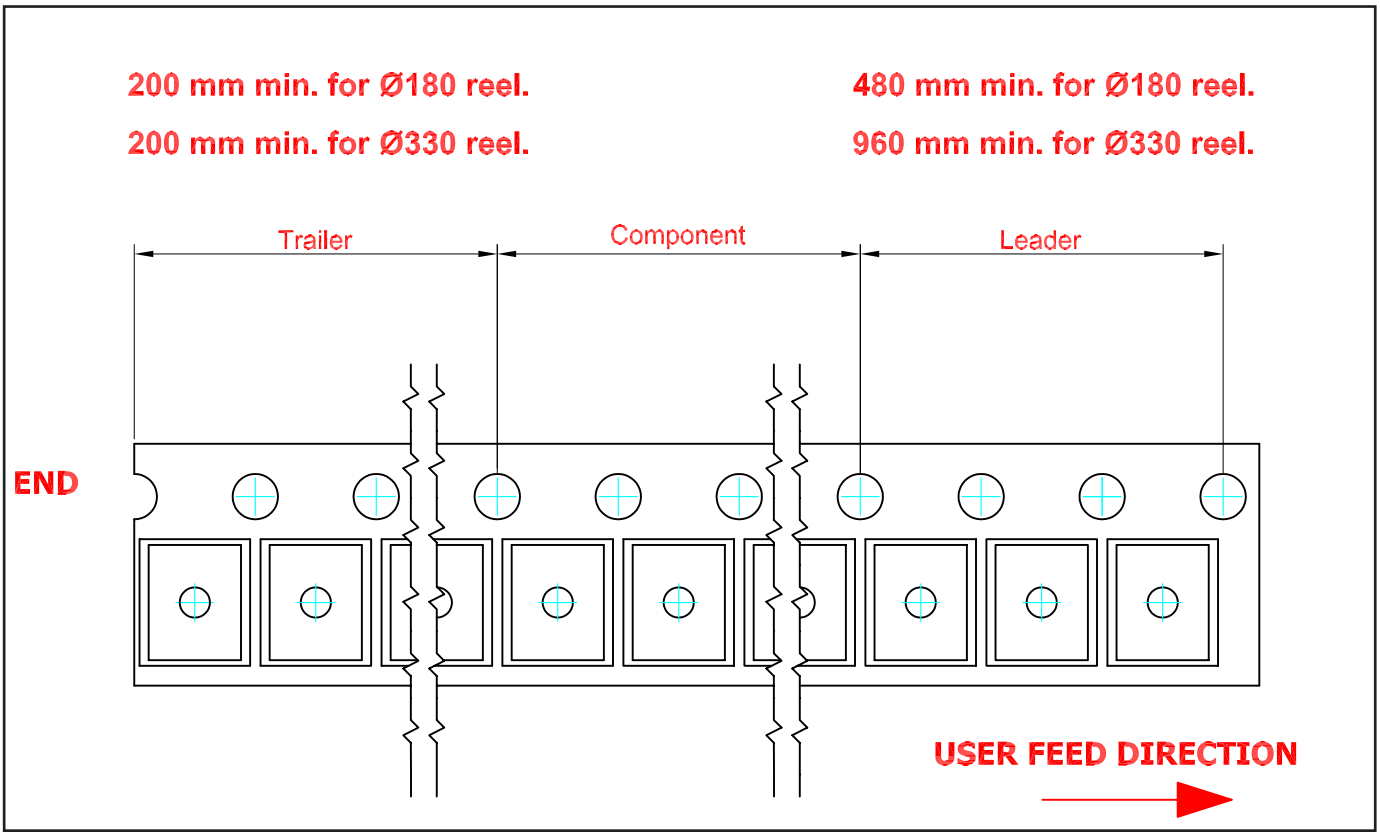
## Recommended Solder Pad



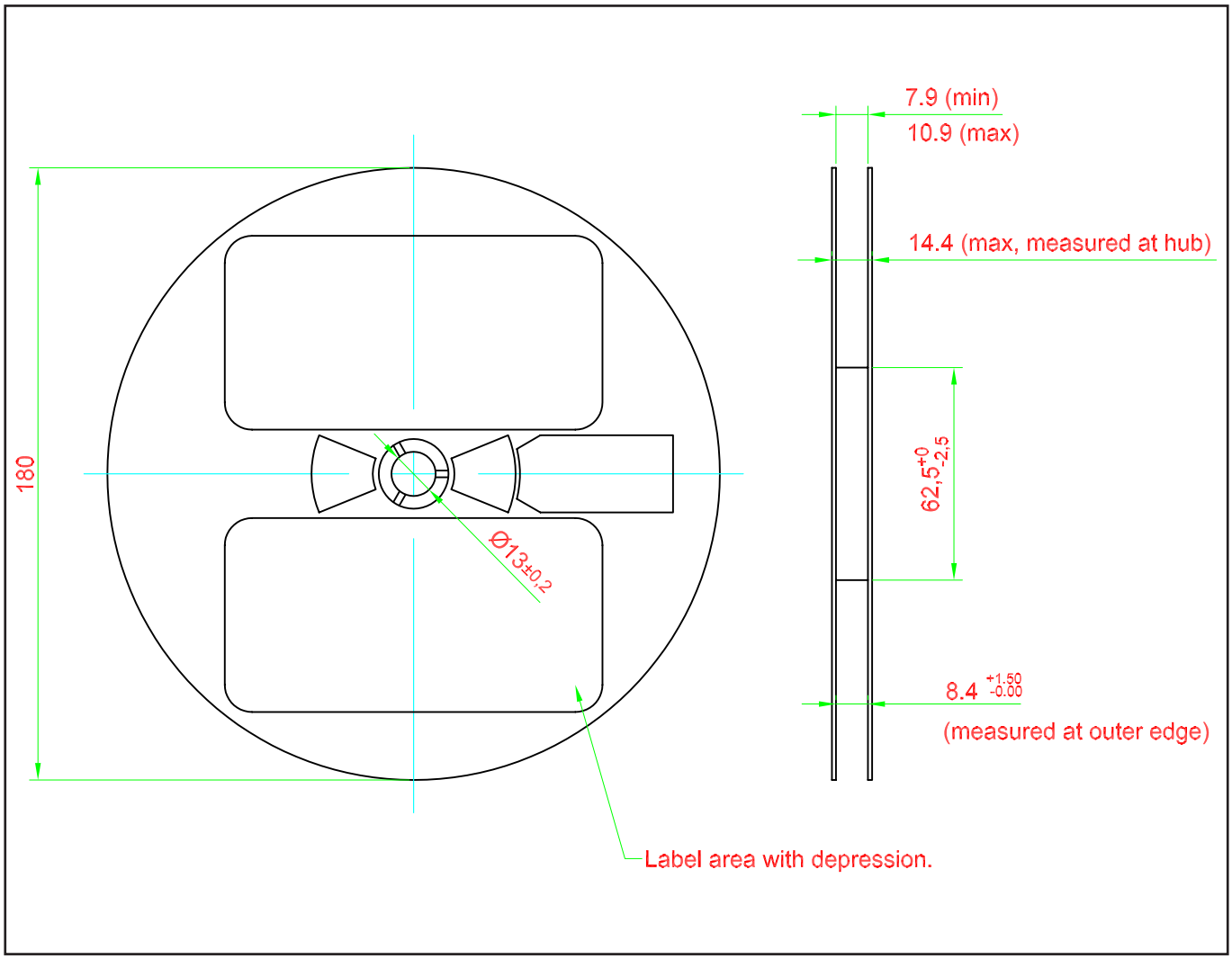
## Taping and orientation

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



## Packaging Specification



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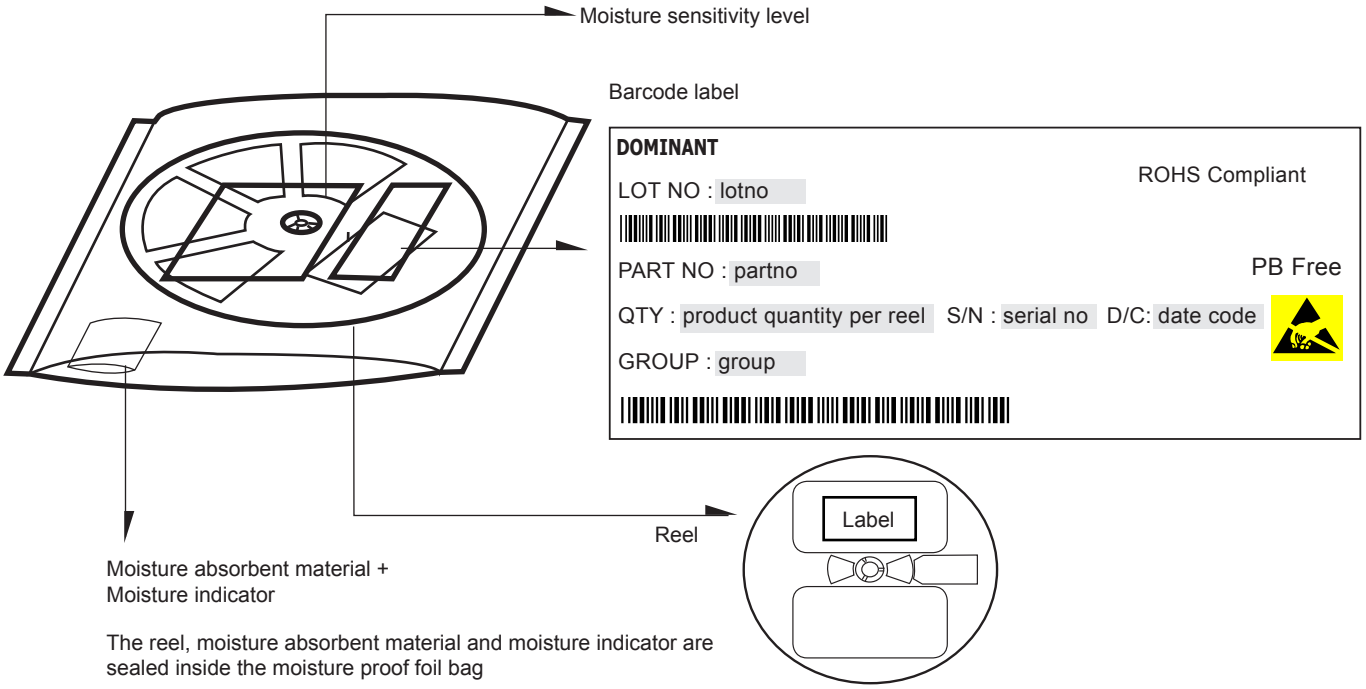
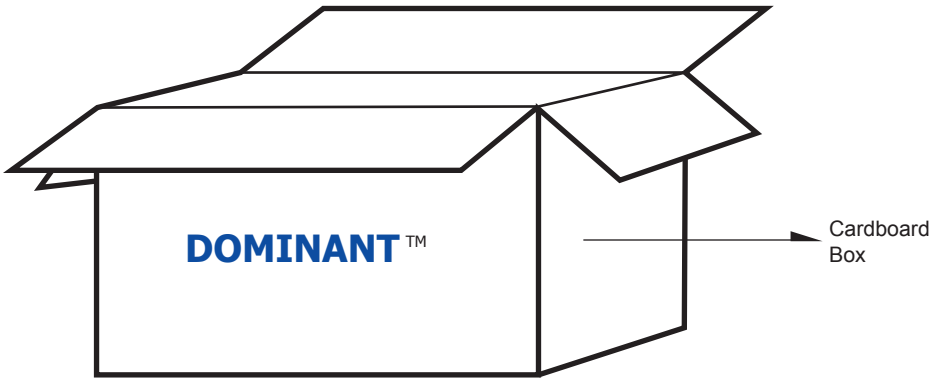


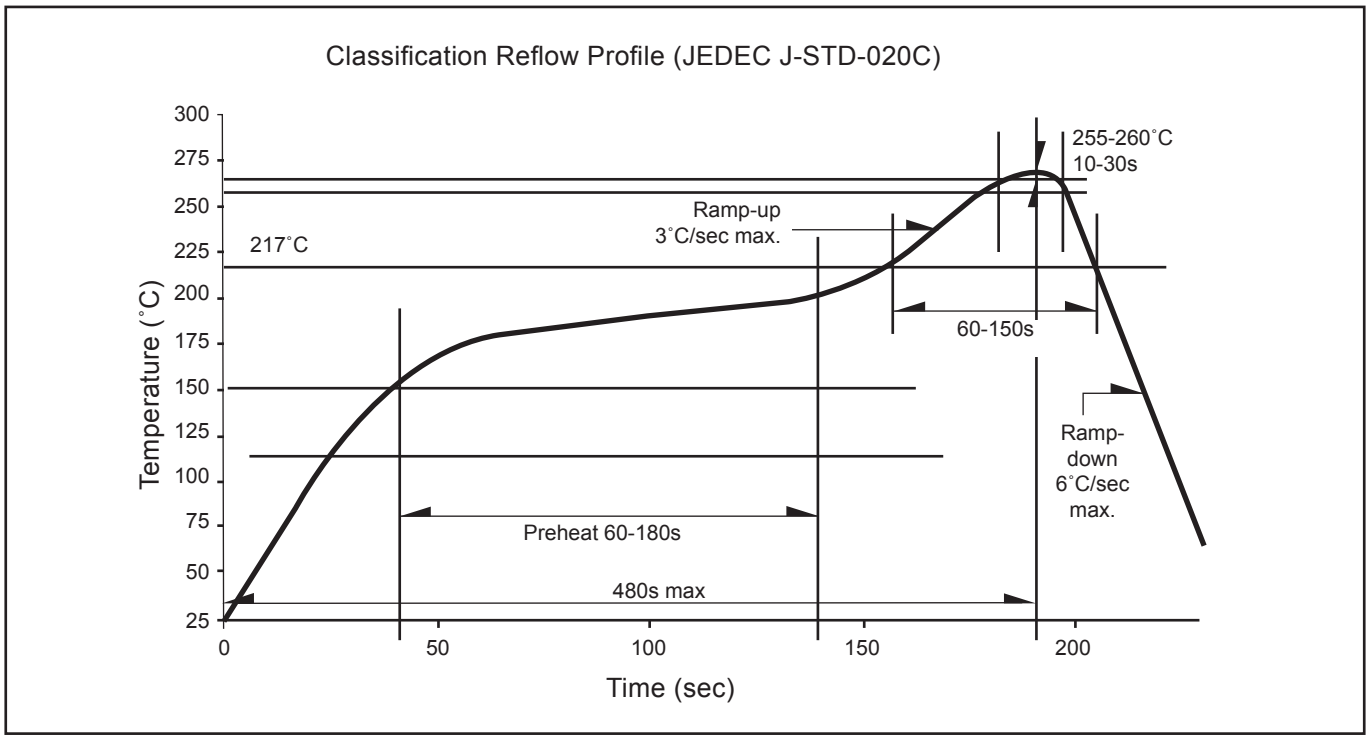

| | Average 1pc DomiLED/Multi DomiLED | 1 completed bag (2000pcs) |
|---|---|---|
| **Weight (gram)** | **0.034** | **190 ± 10** |




### 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 Pb-free Soldering Profile



## Revision History

| Page | Subjects | Date of Modification |
|---|---|---|
| - | Initial release | 09 Jul 2012 |
| 1 | Update Application | 09 Oct 2012 |
| 2 | Add Thermal Resistance | 22 Apr 2013 |
| 1, 3 | Update Product Photo<br>Add Characteristic | 12 Jun 2013 |
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## About Us

DOMINANT Opto Technologies 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 Opto Technologies can be found on the Internet at http://www.dominant-semi.com.

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