

### Multi DomiLED™

Synonymous with function and performance, the Multi 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 bi-color 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:

- > Signage: full colour display video notice board, signage, special effect lighting.
- > Lighting: architecture lighting, general lighting, garden light, channel light.



## Optical Characteristics at Tj=25°C

| Part Ordering Number | Color, $\lambda_{\text{dom}}$ (nm) |                   | Viewing Angle° | Luminous Intensity @ 20mA IV (mcd) |              |        |        |              |        |
|----------------------|------------------------------------|-------------------|----------------|------------------------------------|--------------|--------|--------|--------------|--------|
|                      | Chip #1                            | Chip #2           |                | Min.                               | Chip #1 Typ. | Max.   | Min.   | Chip #2 Typ. | Max.   |
| DKST-MJB-UV+WX-1     | Super Red, 632nm                   | True Green, 525nm | 120            | 450.0                              | 715.0        | 1125.0 | 1125.0 | 1800.0       | 2850.0 |
| ● DKST-MJB-UV+UV-1   | Super Red, 632nm                   | True Green, 525nm | 120            | 450.0                              | 715.0        | 1125.0 | 450.0  | 715.0        | 1125.0 |

- Not for new design

### NOTE

1. DKST comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of  $\pm 11\%$ .
3. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.

## Electrical Characteristics at Tj=25°C

|            | Vf @ If = 20mA |          |          |
|------------|----------------|----------|----------|
|            | Min. (V)       | Typ. (V) | Max. (V) |
| Super Red  | 1.80           | 2.10     | 2.60     |
| True Green | 2.90           | 3.40     | 3.70     |

Forward voltage, Vf is measured with an accuracy of  $\pm 0.1$  V.

## Absolute Maximum Ratings

|                                                                      | Maximum Value                                      | Unit |
|----------------------------------------------------------------------|----------------------------------------------------|------|
| DC forward current                                                   | Super Red; AllInGaP=30;<br>True Green; InGaN=20    | mA   |
| Peak pulse current; ( $t_p \leq 10\mu\text{s}$ , Duty cycle = 0.005) | Super Red ; AllInGaP=200;<br>True Green; InGaN=200 | mA   |
| Reverse voltage                                                      | Super Red; AllInGaP=12;<br>True Green; InGaN=5     | V    |
| ESD threshold (HBM)                                                  | 2000                                               | V    |
| LED junction temperature                                             | 125                                                | °C   |
| Operating temperature                                                | -40 ... +100                                       | °C   |
| Storage temperature                                                  | -40 ... +100                                       | °C   |

## Characteristics

|                                                                                                                                                   | Symbol                            |            | Value | Unit   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------|-------|--------|
| Temperature coefficient of $\lambda_{\text{dom}}$ (typ)<br>$I_F = 20\text{mA}; 0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$ | $TC_{\lambda_{\text{dom}}}$ (typ) | Super Red  | 0.06  | nm / K |
|                                                                                                                                                   |                                   | True Green | 0.03  | nm / K |
| Temperature coefficient of $V_F$ (typ)<br>$I_F = 20\text{mA}; 0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$                  | $TC_V$                            | Super Red  | -5.8  | mV / K |
|                                                                                                                                                   |                                   | True Green | -4.3  | mV / K |
| Temperature coefficient of $I_V$ (typ)<br>$I_F = 20\text{mA}; 0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$                  | $TC_{I_V}$                        | Super Red  | -0.57 | % / K  |
|                                                                                                                                                   |                                   | True Green | -0.14 | % / K  |

## Wavelength Grouping

| Color      | Group | Wavelength distribution (nm) |
|------------|-------|------------------------------|
| Super-red  | Full  | 625 - 640                    |
| True Green | Full  | 520 - 536                    |
|            | W     | 520 - 524                    |
|            | X     | 524 - 528                    |
|            | Y     | 528 - 532                    |
|            | Z     | 532 - 536                    |

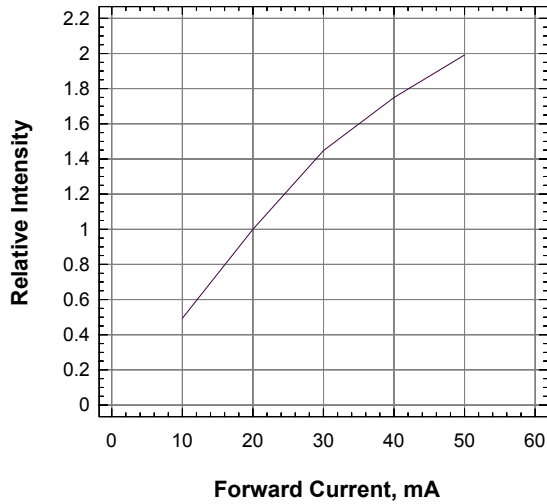
Dominant wavelength is measured with an accuracy of  $\pm 1\text{ nm}$ .

## Luminous Intensity Group at $T_j=25^{\circ}\text{C}$

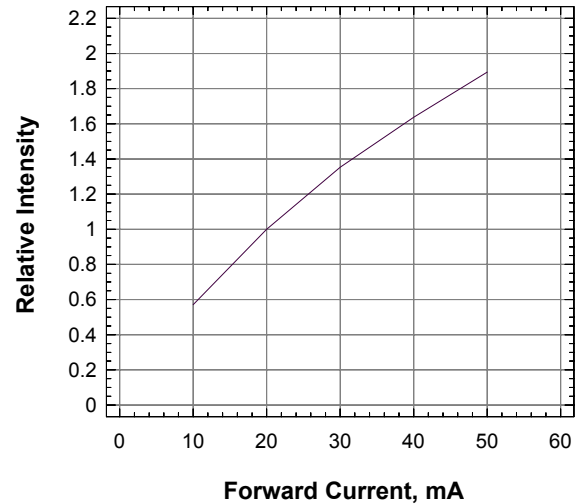
| Brightness Group | Luminous Intensity @ $I_V$ (mcd) |                 |
|------------------|----------------------------------|-----------------|
|                  | Chip #1                          | Chip #2         |
| UU               | 450.0...715.0                    | 450.0...715.0   |
| UV               | 450.0...715.0                    | 715.0...1125.0  |
| UW               | 450.0...715.0                    | 1125.0...1800.0 |
| UX               | 450.0...715.0                    | 1800.0...2850.0 |
| VU               | 715.0...1125.0                   | 450.0...715.0   |
| VV               | 715.0...1125.0                   | 715.0...1125.0  |
| VW               | 715.0...1125.0                   | 1125.0...1800.0 |
| VX               | 715.0...1125.0                   | 1800.0...2850.0 |

Luminous intensity is measured with an accuracy of  $\pm 11\%$ .

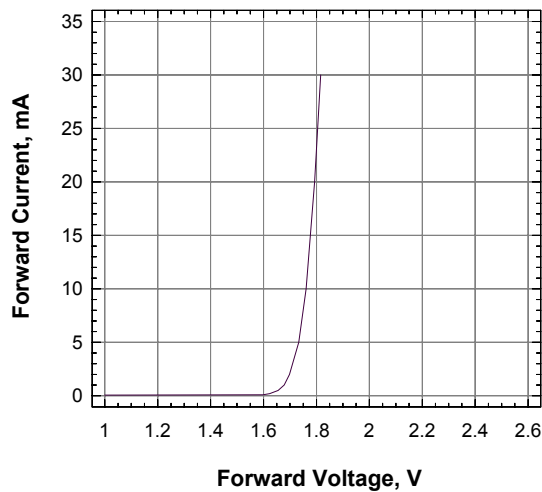
**Relative Intensity Vs Forward Current (AS AlInGaP)**



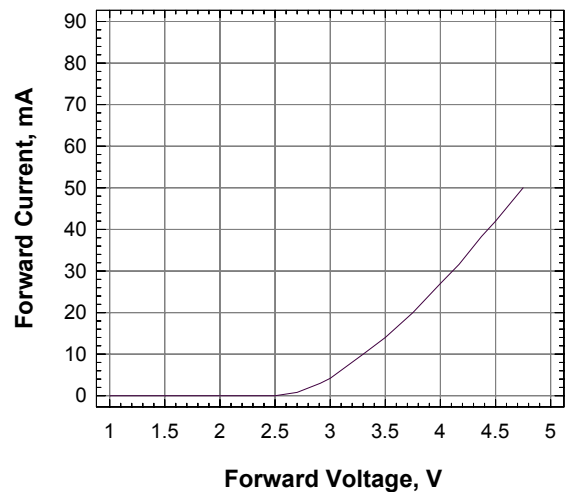
**Relative Intensity Vs Forward Current (InGaN)**



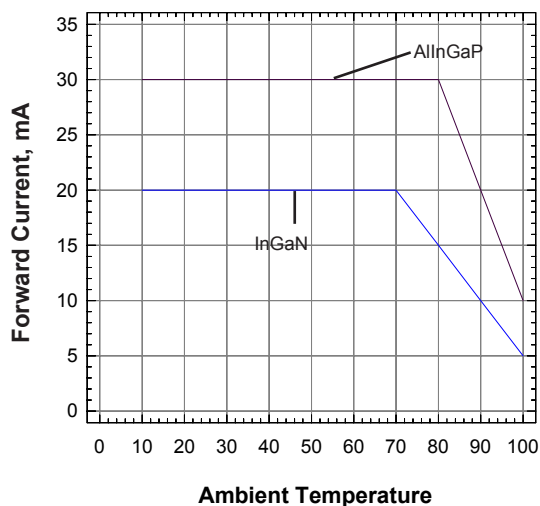
**Forward Current Vs Forward Voltage (AS AlInGaP)**



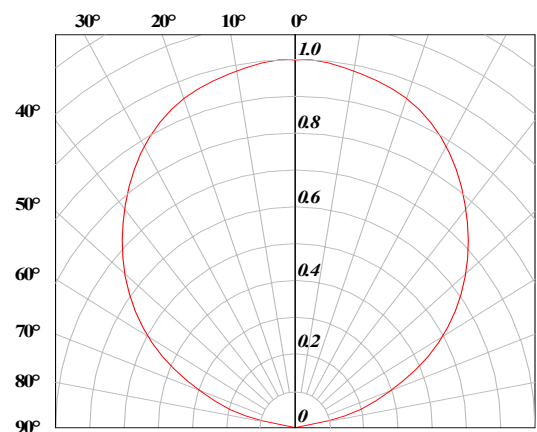
**Forward Current Vs Forward Voltage (InGaN)**



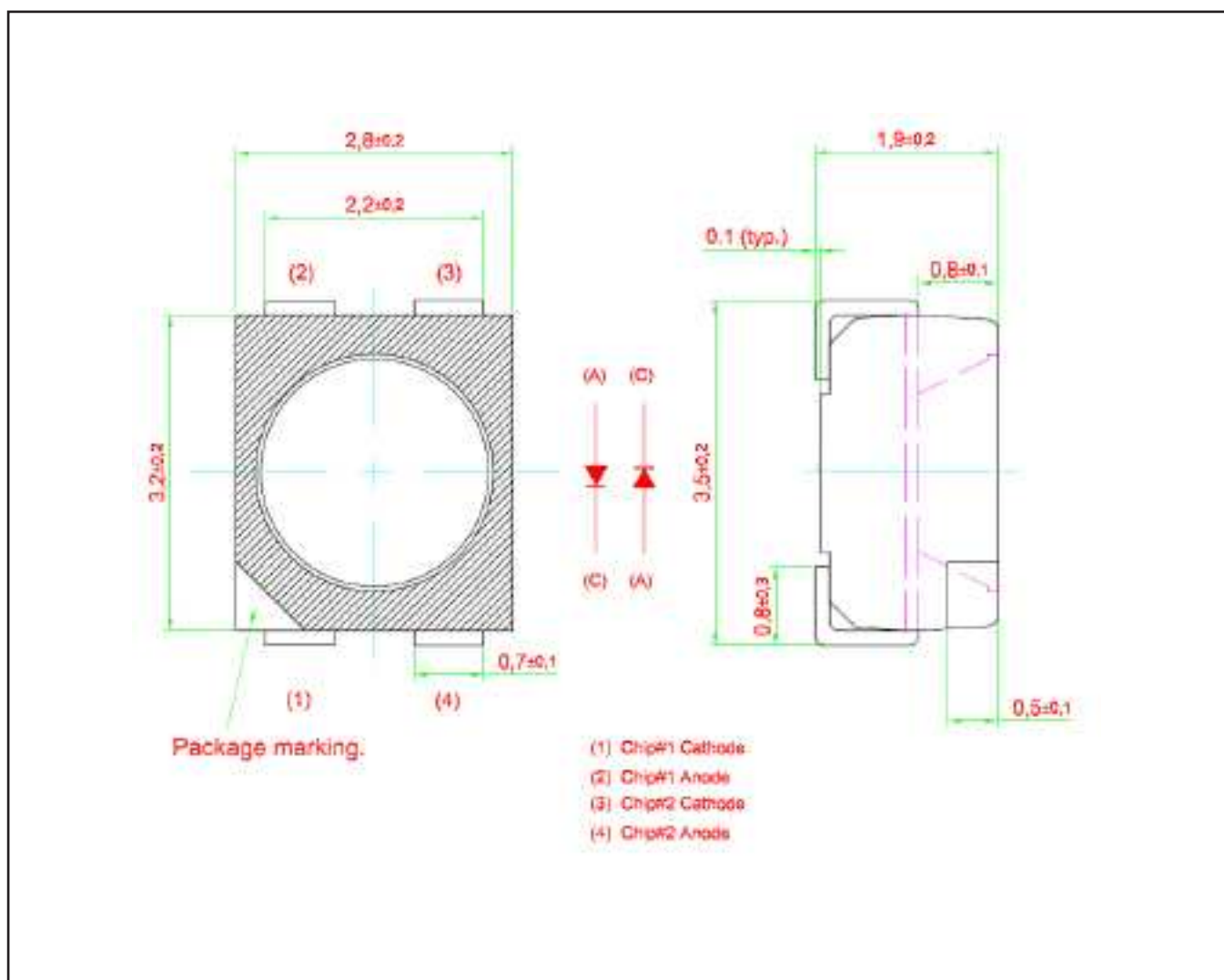
**Maximum Current Vs Temperature**



**Radiation Pattern**



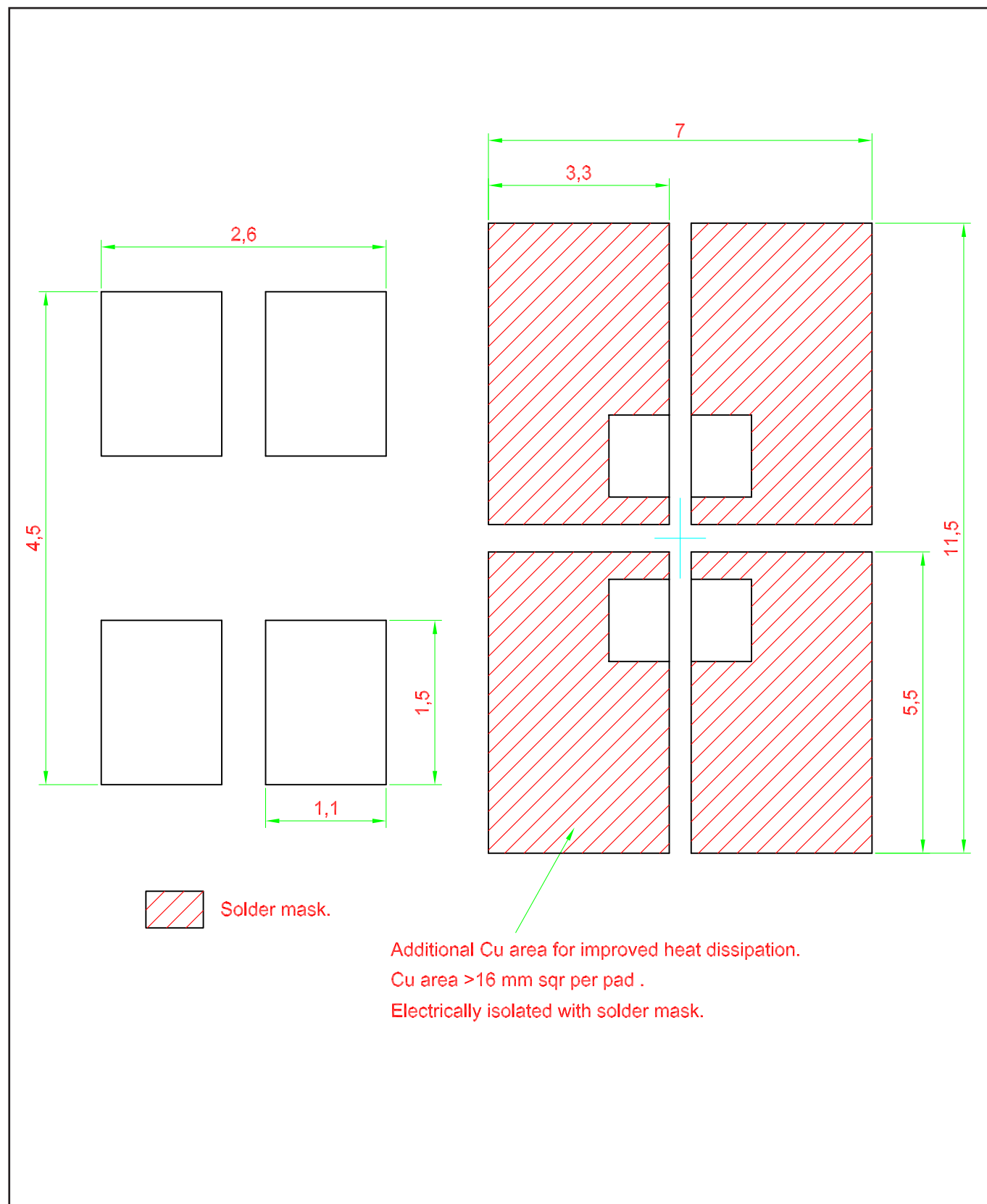
## Multi DomiLED™ • Bi-Color : DKST-MJB Package Outlines



## Material

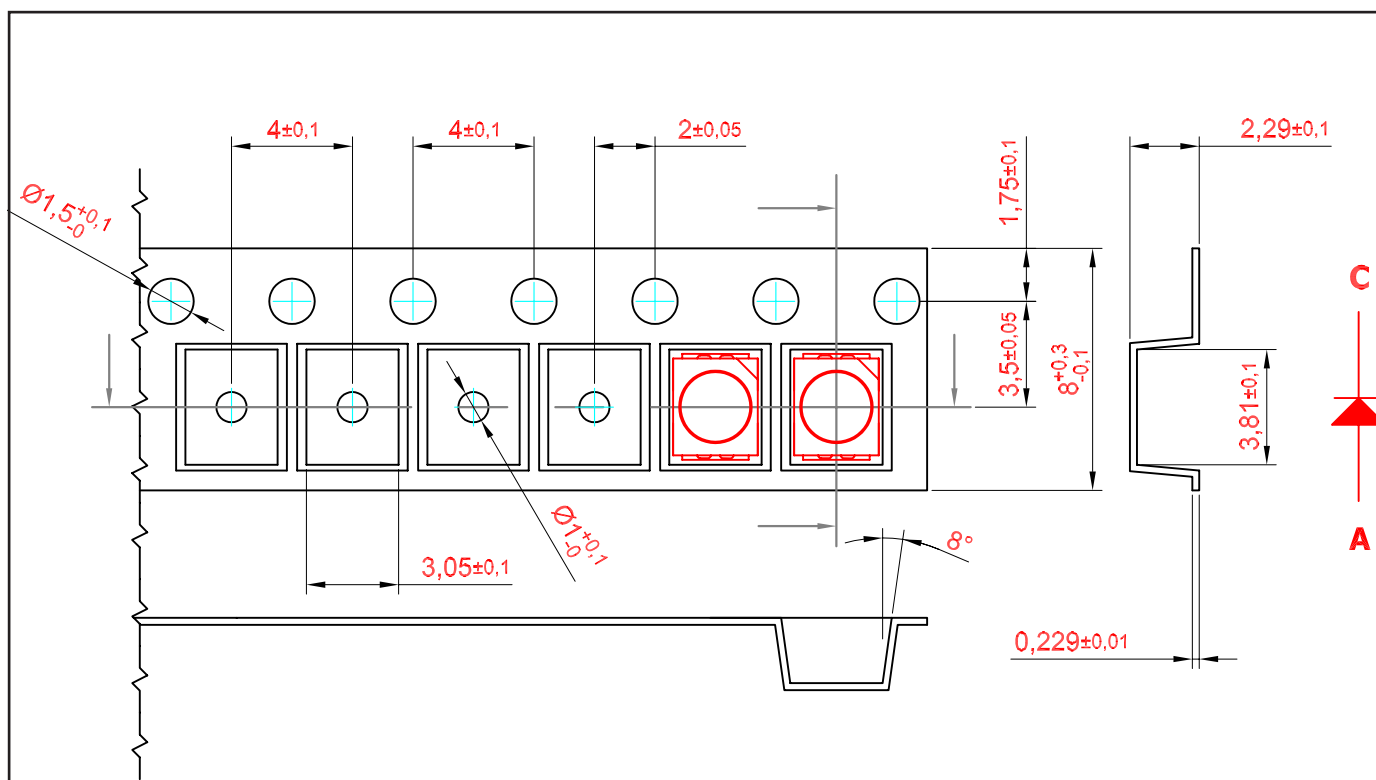
| Material        |                                         |
|-----------------|-----------------------------------------|
| Lead-frame      | Cu Alloy With Ag Plating                |
| Package         | High Temperature Resistant Plastic, PPA |
| Encapsulant     | Epoxy                           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

## Recommended Solder Pad



## Taping and orientation

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

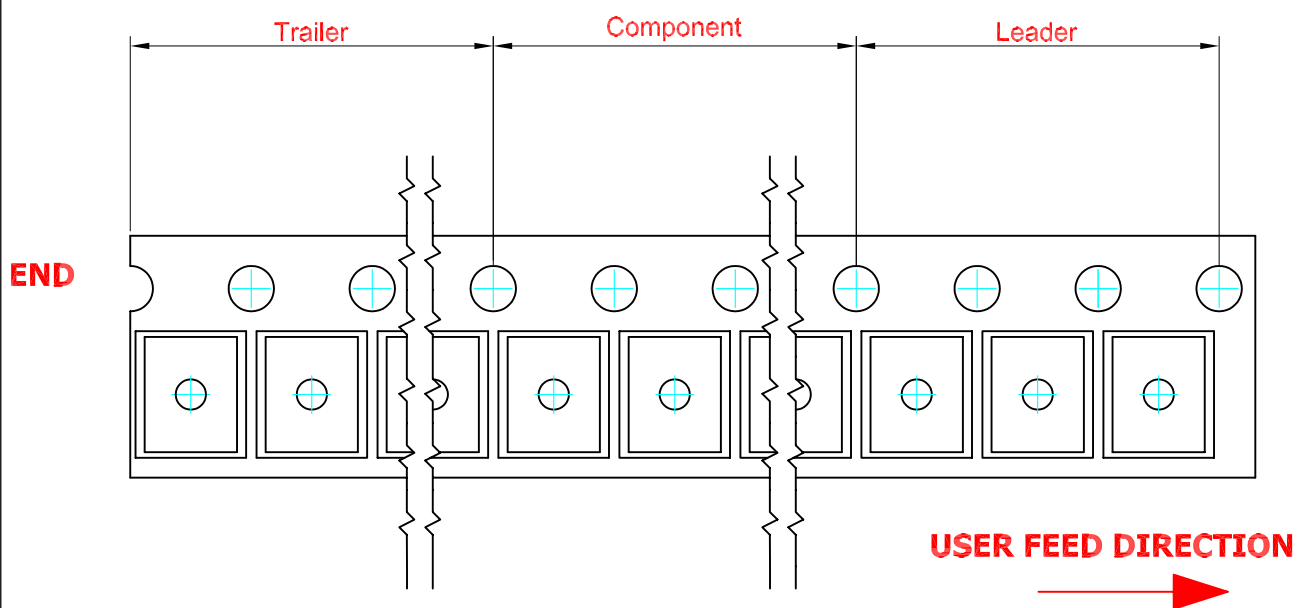


200 mm min. for  $\varnothing 180$  reel.

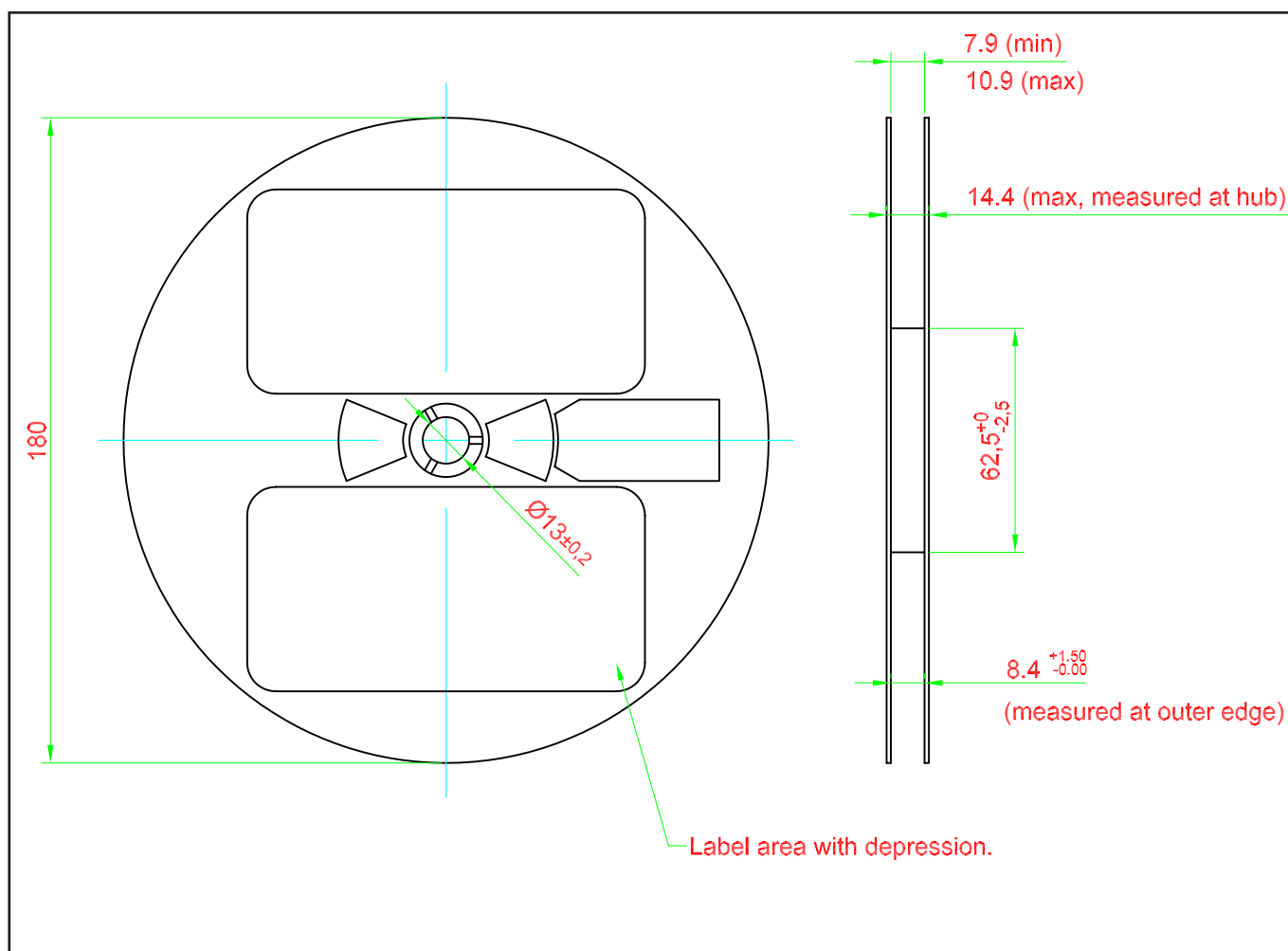
480 mm min. for  $\varnothing 180$  reel.

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

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

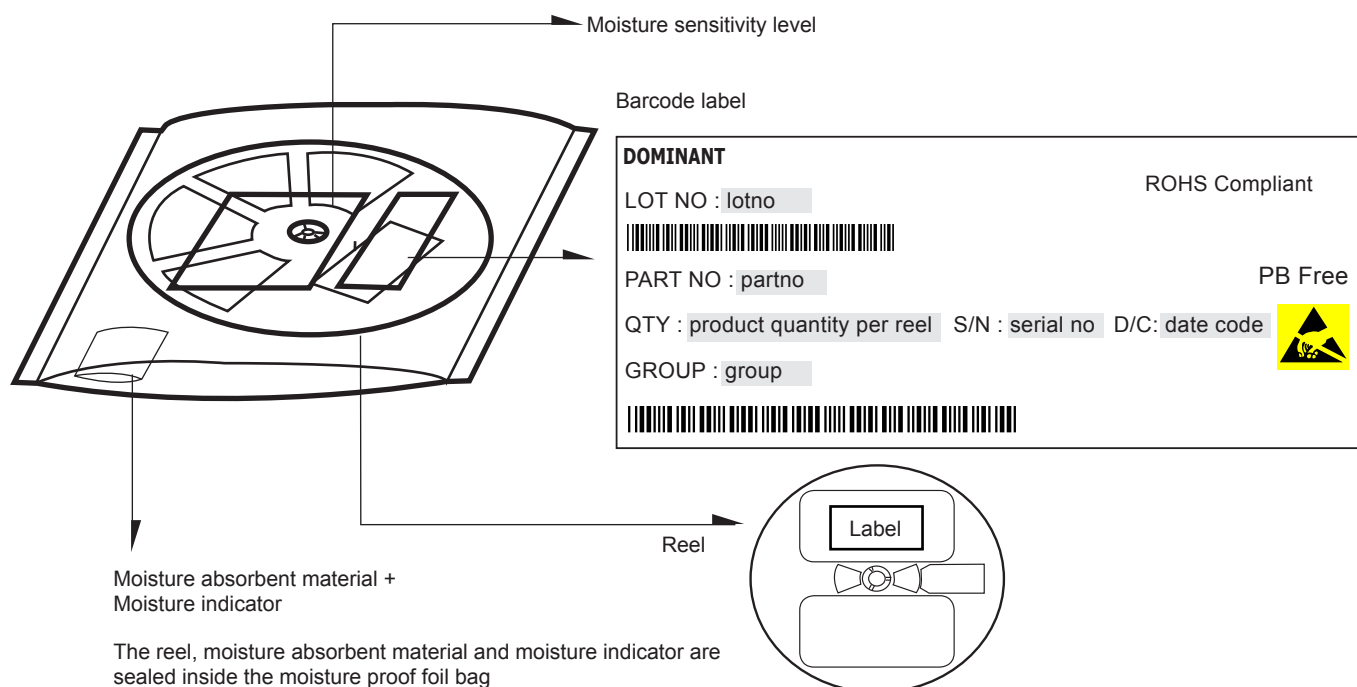


## Packaging Specification

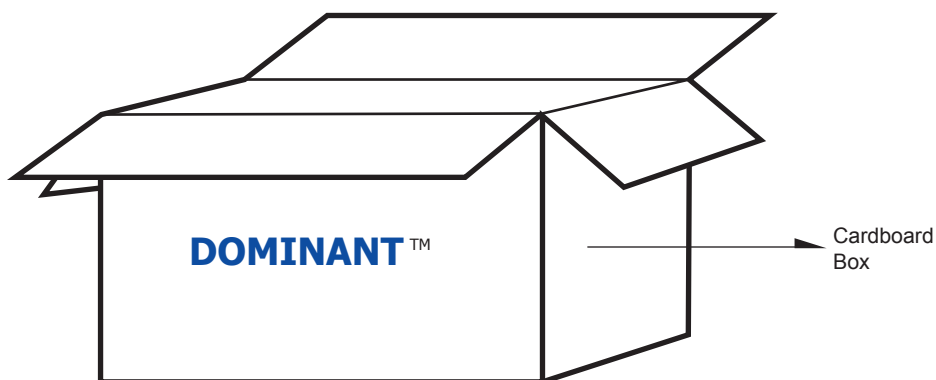




## Packaging Specification



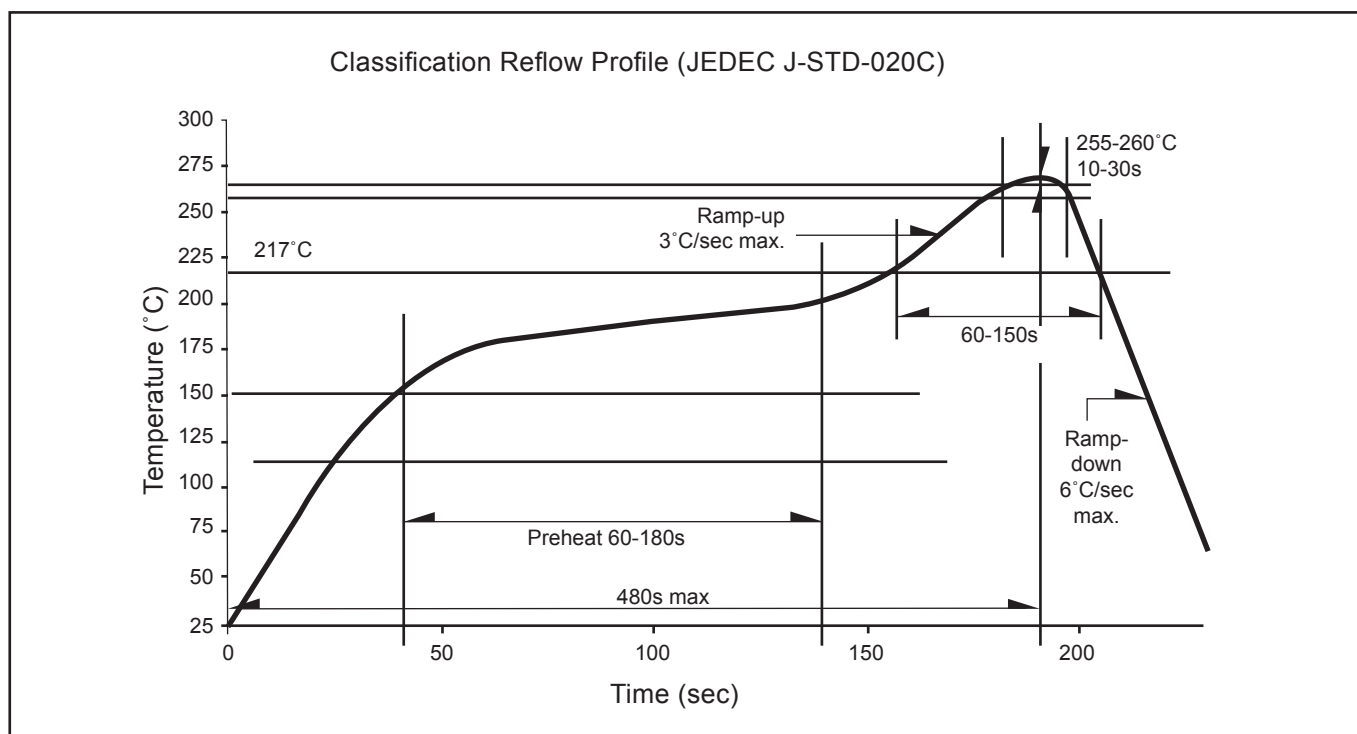
|               | Average 1pc DomiLED/Multi DomiLED | 1 completed bag (2000pcs) |
|---------------|-----------------------------------|---------------------------|
| Weight (gram) | 0.034                             | 190 ± 10                  |



### For Multi 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                                                                                  | 02 Jul 2009          |
| -    | Update company name                                                                              | 04 May 2010          |
| 2, 3 | Not for new design: DKST-MJB-UV+UV-1,<br>Add new partno: DKST-MJB-UV+WX-1<br>Add Characteristics | 12 Jul 2013          |
|      |                                                                                                  |                      |
|      |                                                                                                  |                      |
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### NOTE

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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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