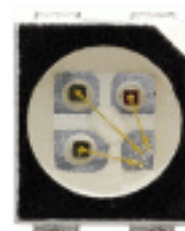


Multi DomiLEDTM

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



Features:

- > High brightness tri-color surface mount LED.
- > Capable for all video-standards.
- > The RGB-LED chips can be controlled separately.
- > 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.
- > Display: full color display video notice board.
- > General Lighting: architectural lighting, decorative lighting



Optical Characteristics at Tj=25°C

| Part Ordering Number | Color, λ_{dom} (nm) | | | Luminous Intensity @ IF = 20mA IV (mcd) | | | | | | | | |
|-------------------------|-----------------------------|------------|---------|---|-------|-------|---------|-------|-------|---------|-------|-------|
| | Chip #1 | Chip #2 | Chip #3 | Chip #1 | | | Chip #2 | | | Chip #3 | | |
| | | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| DMRTB-UJB-ST3+UV3+RS3-1 | Red | True Green | Blue | 140.0 | 200.0 | 285.0 | 285.0 | 400.0 | 560.0 | 100.0 | 140.0 | 200.0 |
| | 625nm | 525nm | 470nm | | | | | | | | | |

NOTE

1. Reel comes in a quantity of 2050 units per reel.
2. Luminous intensity is measured with an accuracy of $\pm 11\%$.
3. All electrical and optical data are measured at room temperature; Ta = 25°C.

Electrical Characteristics at Tj=25°C

| | Vf @ If = 20mA | | Temperature Coefficient of Vf (If=20mA; -10°C<T<100°C) |
|------------|----------------|----------|---|
| | Typ. (V) | Max. (V) | |
| Red | 1.80 | 2.45 | -2.00 |
| True Green | 3.70 | 4.25 | -3.60 |
| Blue | 3.60 | 4.25 | -3.10 |

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

Absolute Maximum Ratings

| | Maximum Value | Unit |
|--|--------------------------------|------|
| DC forward current | Red=30; True Green, Blue=20 | mA |
| Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005) | Red=1000; True Green, Blue=200 | mA |
| Reverse voltage | Red=12; True Green, Blue=5 | V |
| Power consumption | Red=75; True Green, Blue=85 | V |
| Thermal resistance junction/ambient, R _{th JA} | | |
| 1 chip on | Red=480; True Green, Blue=530 | K/W |
| 3 chips on | Red=770; True Green, Blue=820 | |
| Thermal resistance junction/solder point, R _{th JS} | | |
| 1 chip on | Red=260; True Green, Blue=290 | K/W |
| 3 chips on | Red=420; True Green, Blue=470 | |
| LED junction temperature | 125 | °C |
| Operating temperature | -40 ... +100 | °C |
| Storage temperature | -40 ... +100 | °C |

Characteristics at T_j=25°C

| | Temperature Coefficient (I _f =20mA; -10°C<T<100°C) | |
|------------|---|-------------------------|
| | λ _{peak} (nm/K) | λ _{dom} (nm/K) |
| Red | 0.15 | 0.05 |
| True Green | 0.04 | 0.03 |
| Blue | 0.04 | 0.02 |

Wavelength Grouping at Tj=25°C

If wavelength binning is required, only one wavelength group is allowed for each chip within a reel.

| Color | Group | Wavelength distribution (nm) |
|------------|-------|------------------------------|
| Red | Full | 618 - 628 |
| True Green | Full | 521 - 536 |
| | A | 521 - 526 |
| | B | 526 - 531 |
| | C | 531 - 536 |
| Blue | Full | 465 - 475 |
| | A | 465 - 470 |
| | B | 470 - 475 |

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

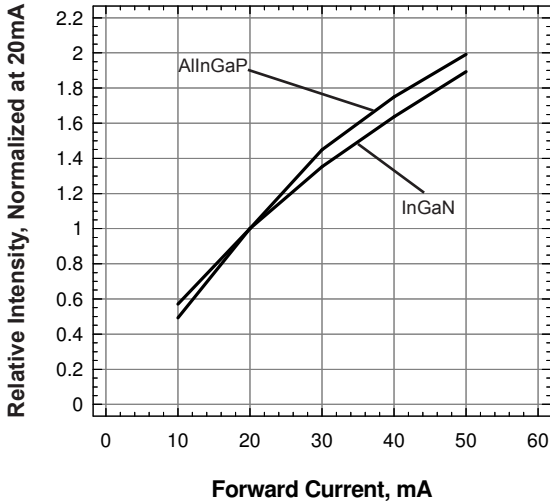
Luminous Intensity Group at Tj=25°C

Only one IV group is allowed for each chip within reel.

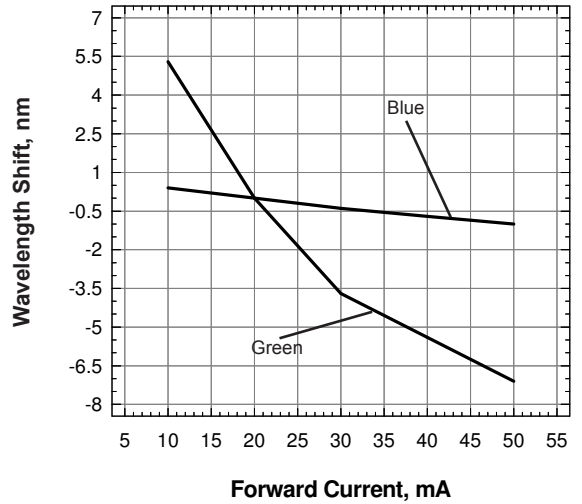
| Brightness Group | Luminous Intensity @ IV (mcd) | | |
|------------------|-------------------------------|---------------|---------------|
| | Chip #1 | Chip #2 | Chip #3 |
| S3U3R3 | 140.0...200.0 | 285.0...400.0 | 100.0...140.0 |
| S3U3S3 | 140.0...200.0 | 285.0...400.0 | 140.0...200.0 |
| S3V3R3 | 140.0...200.0 | 400.0...560.0 | 100.0...140.0 |
| S3V3S3 | 140.0...200.0 | 400.0...560.0 | 140.0...200.0 |
| T3U3R3 | 200.0...285.0 | 285.0...400.0 | 100.0...140.0 |
| T3U3S3 | 200.0...285.0 | 285.0...400.0 | 140.0...200.0 |
| T3V3R3 | 200.0...285.0 | 400.0...560.0 | 100.0...140.0 |
| T3V3S3 | 200.0...285.0 | 400.0...560.0 | 140.0...200.0 |

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

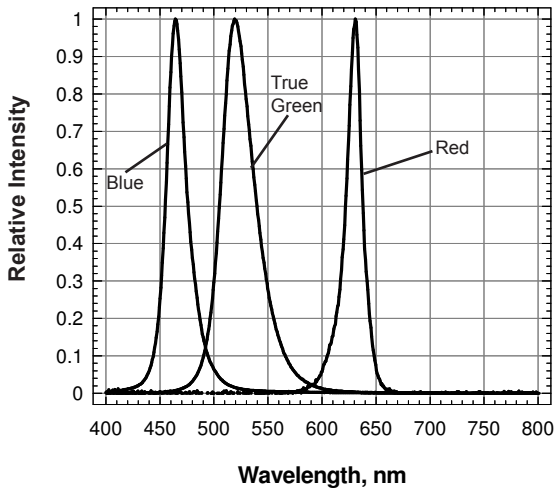
Luminous Intensity Vs Forward Current



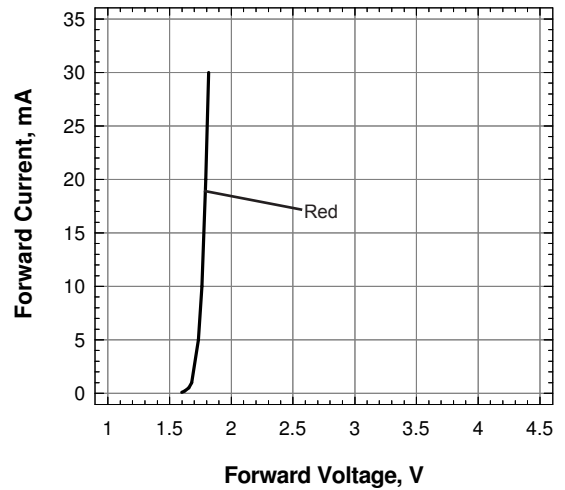
Wavelength Shift Vs Forward Current



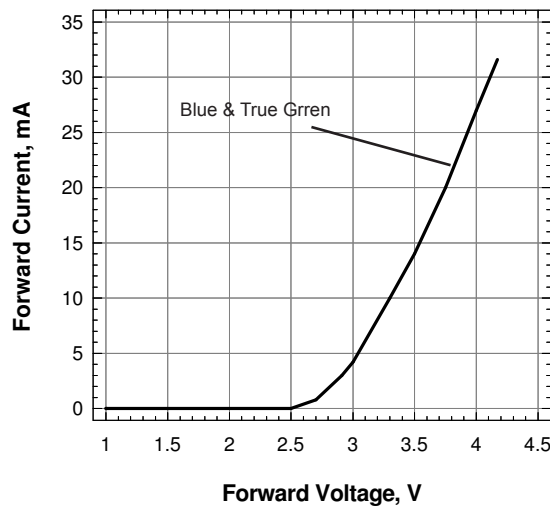
Wavelength Distribution



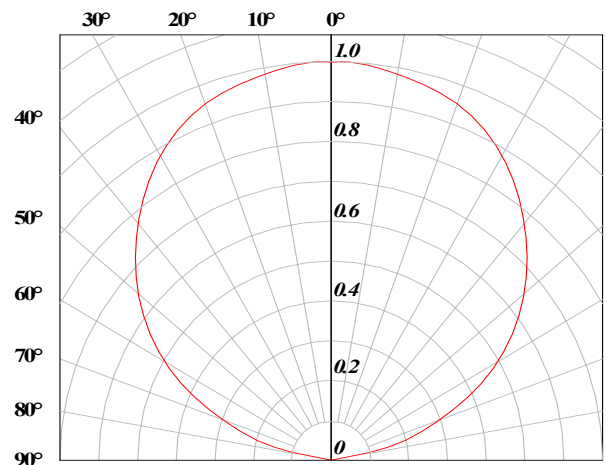
Forward Current Vs Forward Voltage



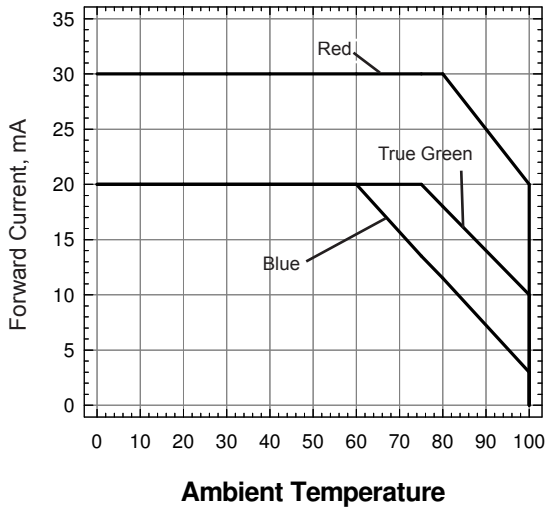
Forward Current Vs Forward Voltage



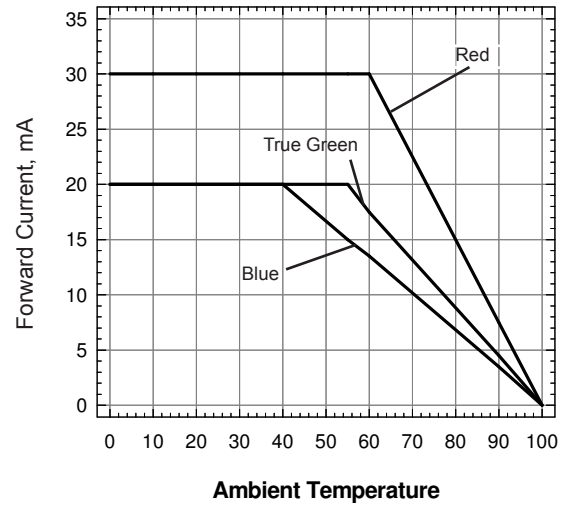
Radiation Pattern



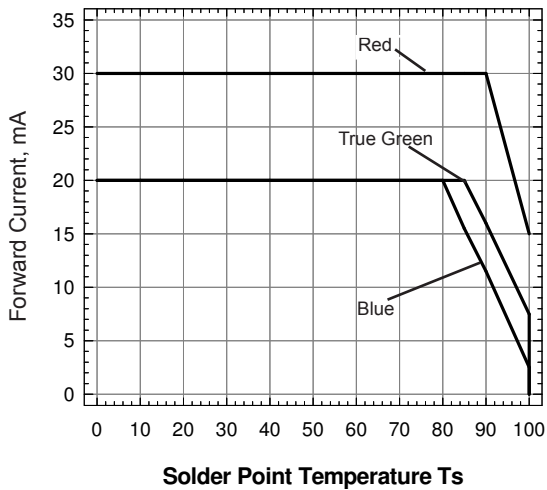
Maximum Forward Current Vs Temperature (1 chip on)



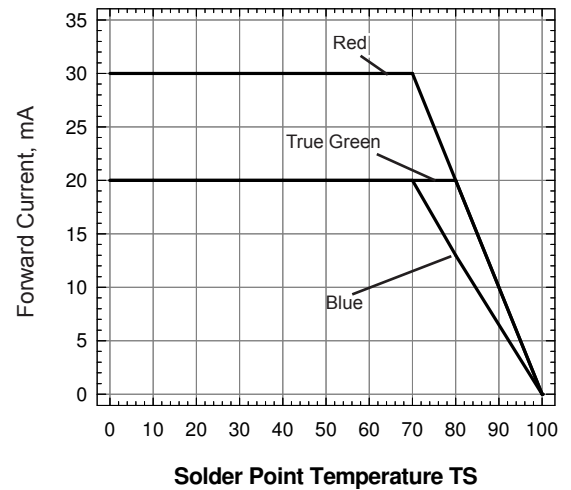
Maximum Forward Current Vs Temperature (3 chips on)



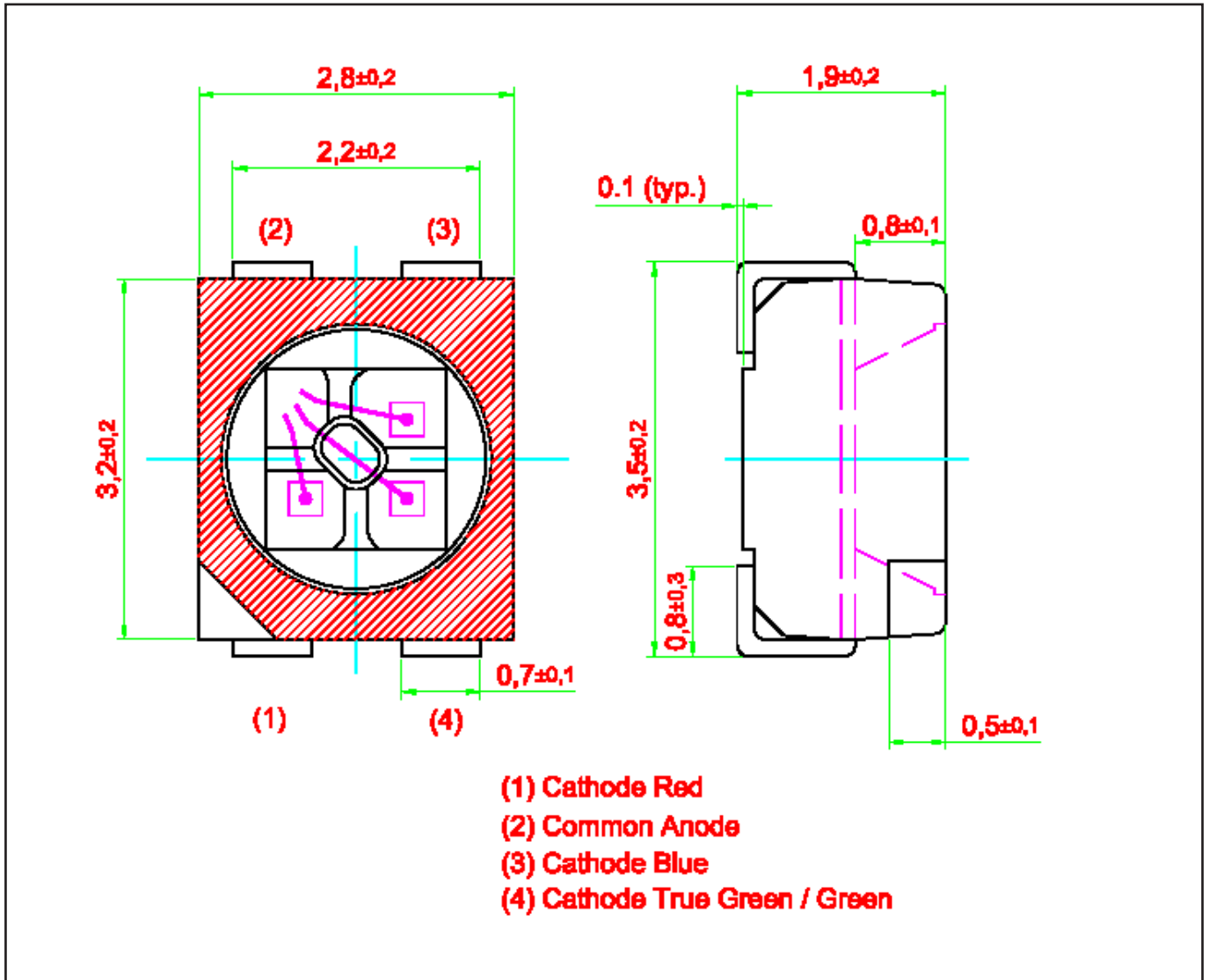
Maximum Forward Current Vs Temperature (1 chip on)



Maximum Forward Current Vs Temperature (3 chips on)



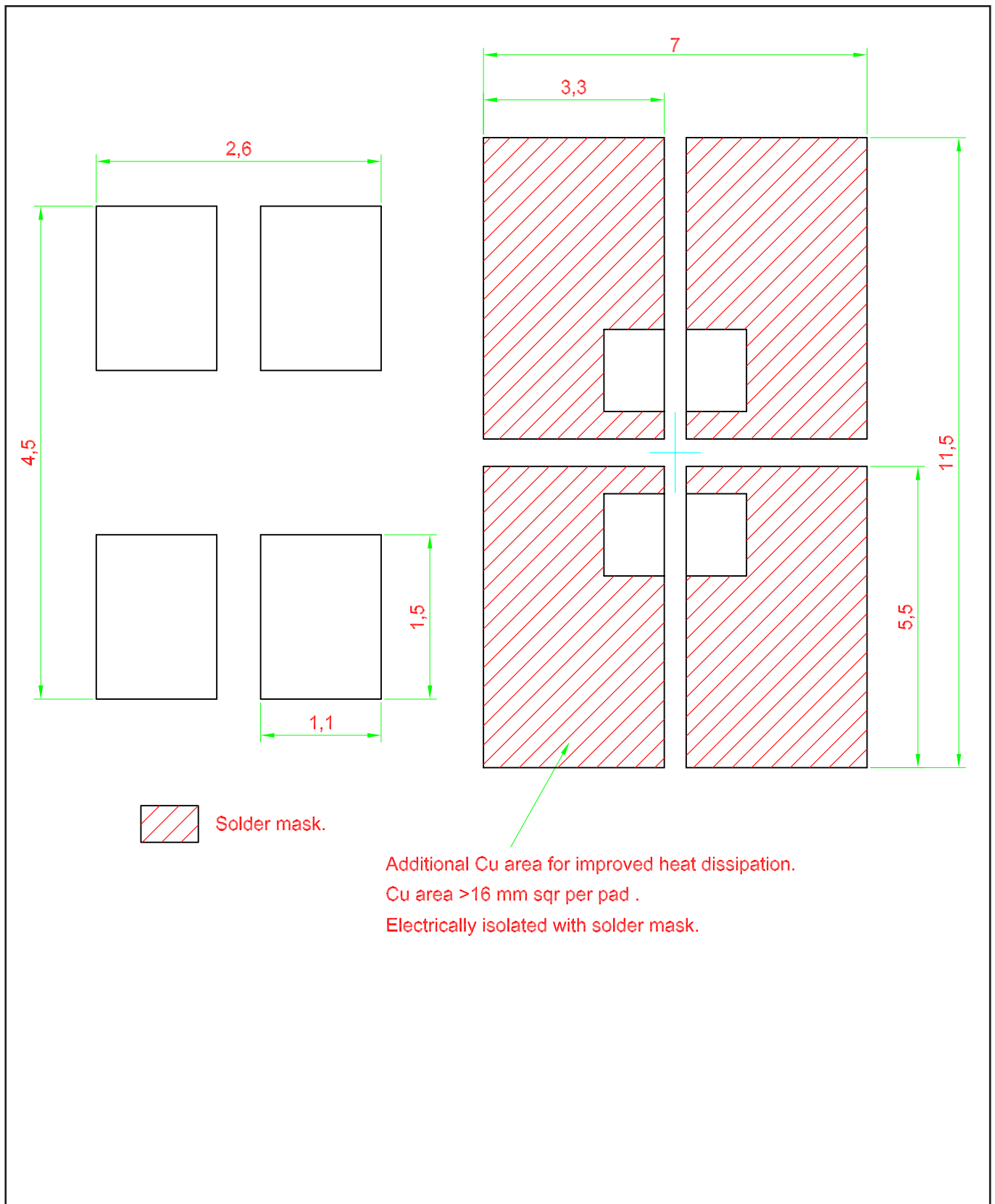
Multi DomiLED™ • DMRTB-UJB-ST3+UV3+RS3-1 : Tri-Color Package Outlines



Material

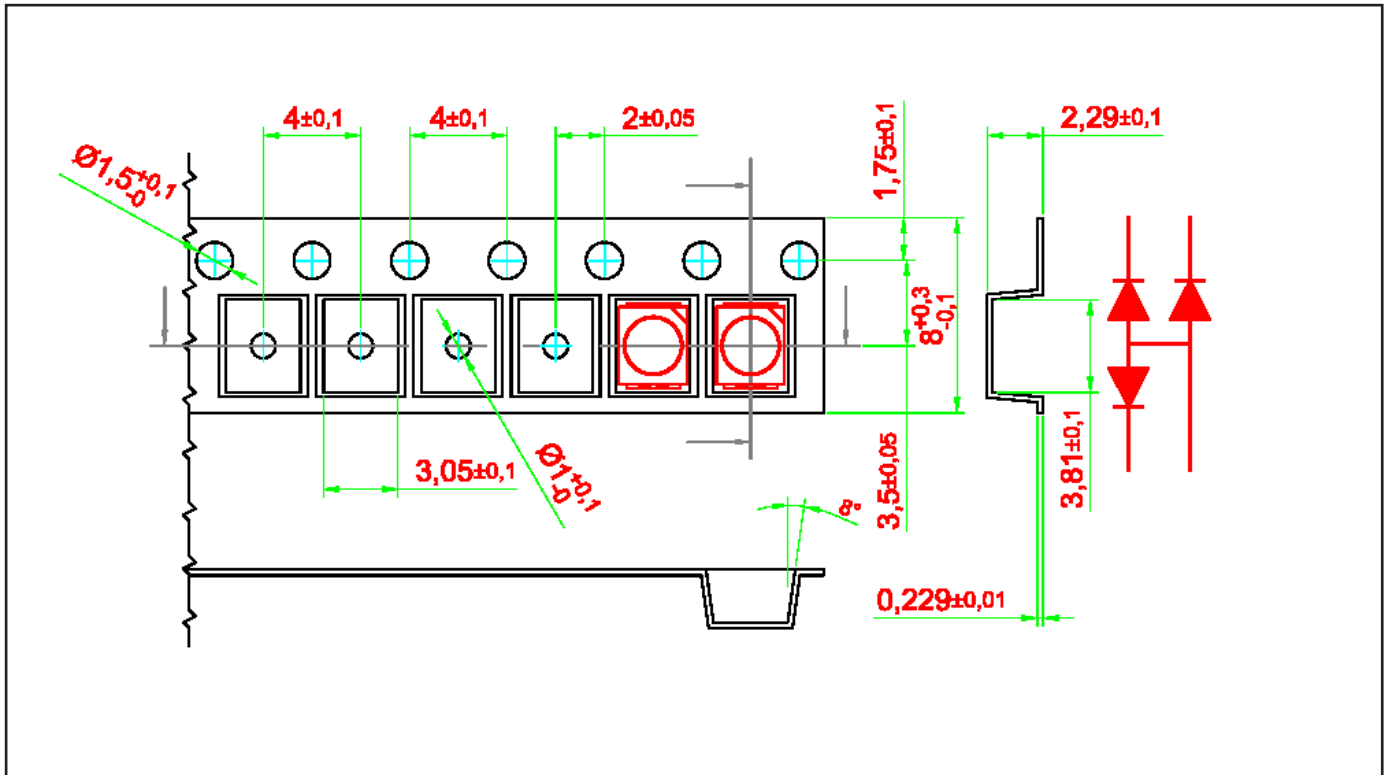
| | Material |
|-----------------|---|
| Lead-frame | Cu Alloy With Ag Plating |
| Package | High Temperature Resistant Plastic, PPA |
| Encapsulant | Epoxy |
| Soldering Leads | Sn Plating |

Recommended Solder Pad



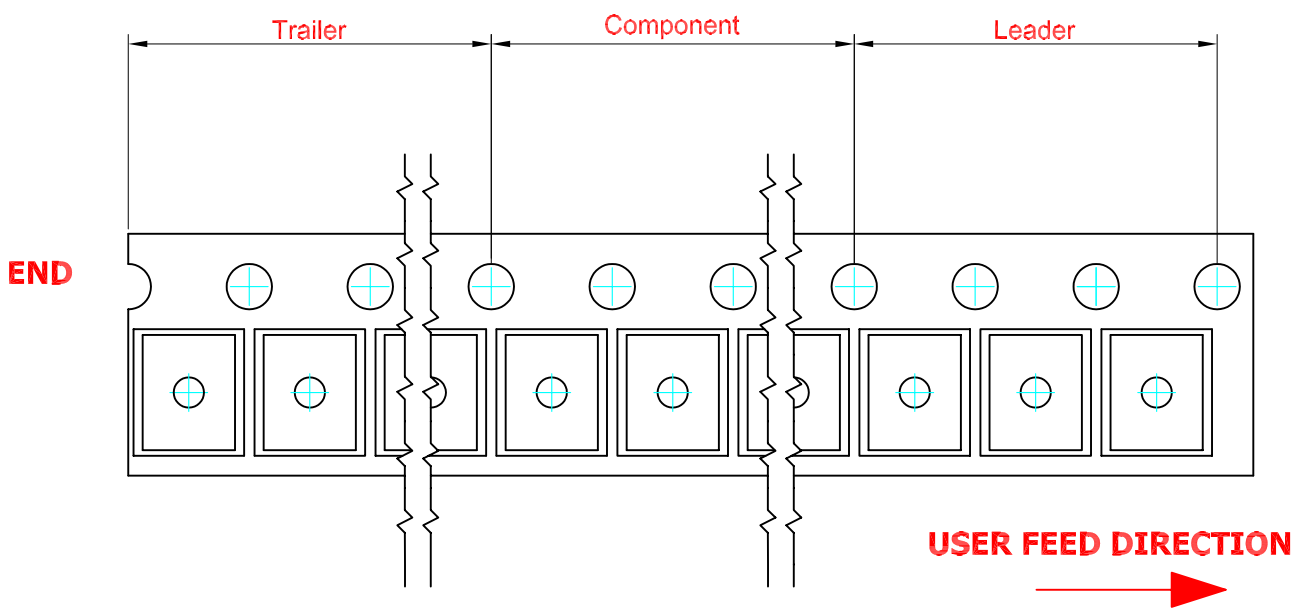
Taping and orientation

- Reels come in quantity of 2050 units.
- Reel diameter is 180 mm.

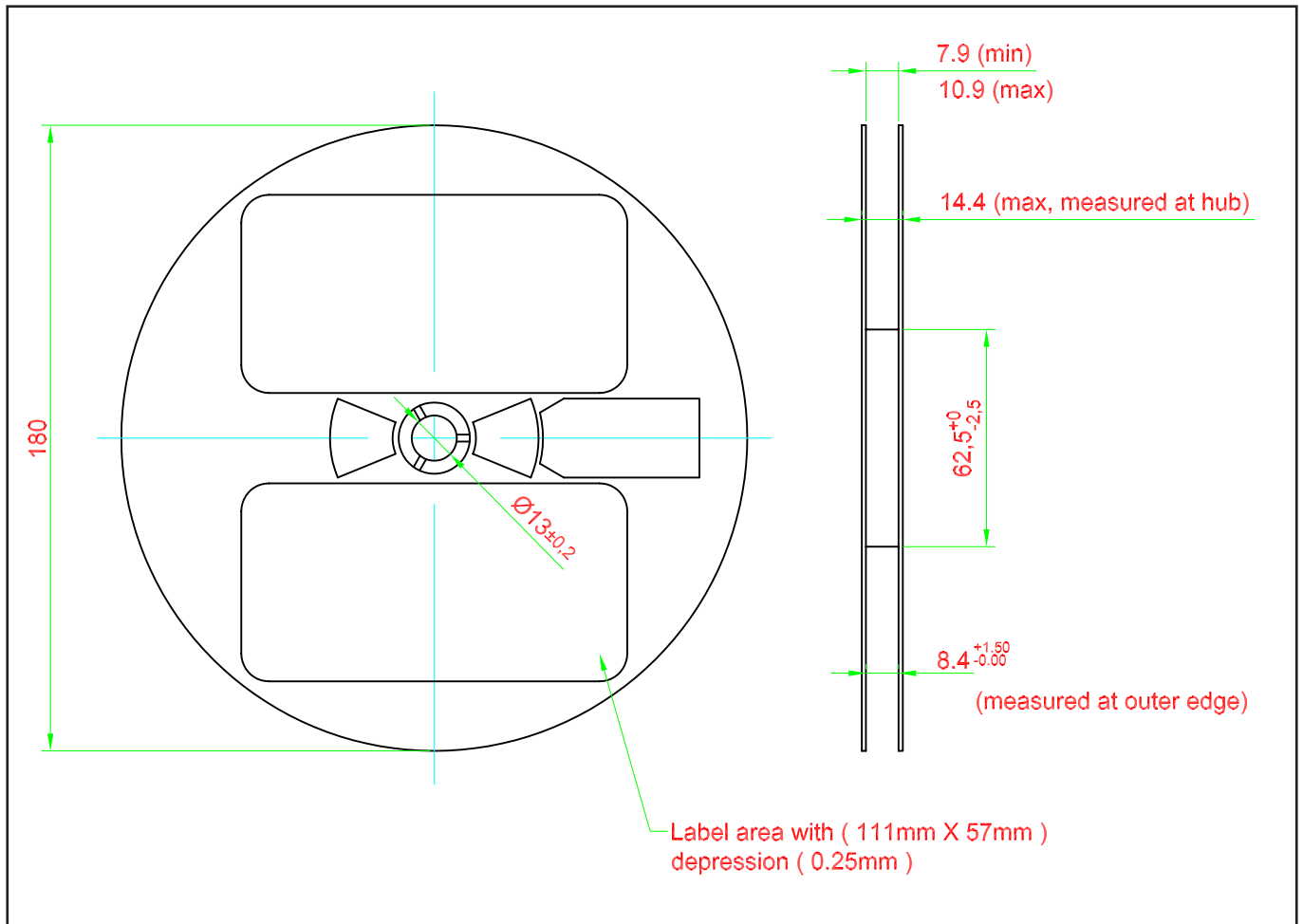


200 mm min. for $\text{Ø}180$ reel.
 200 mm min. for $\text{Ø}330$ reel.

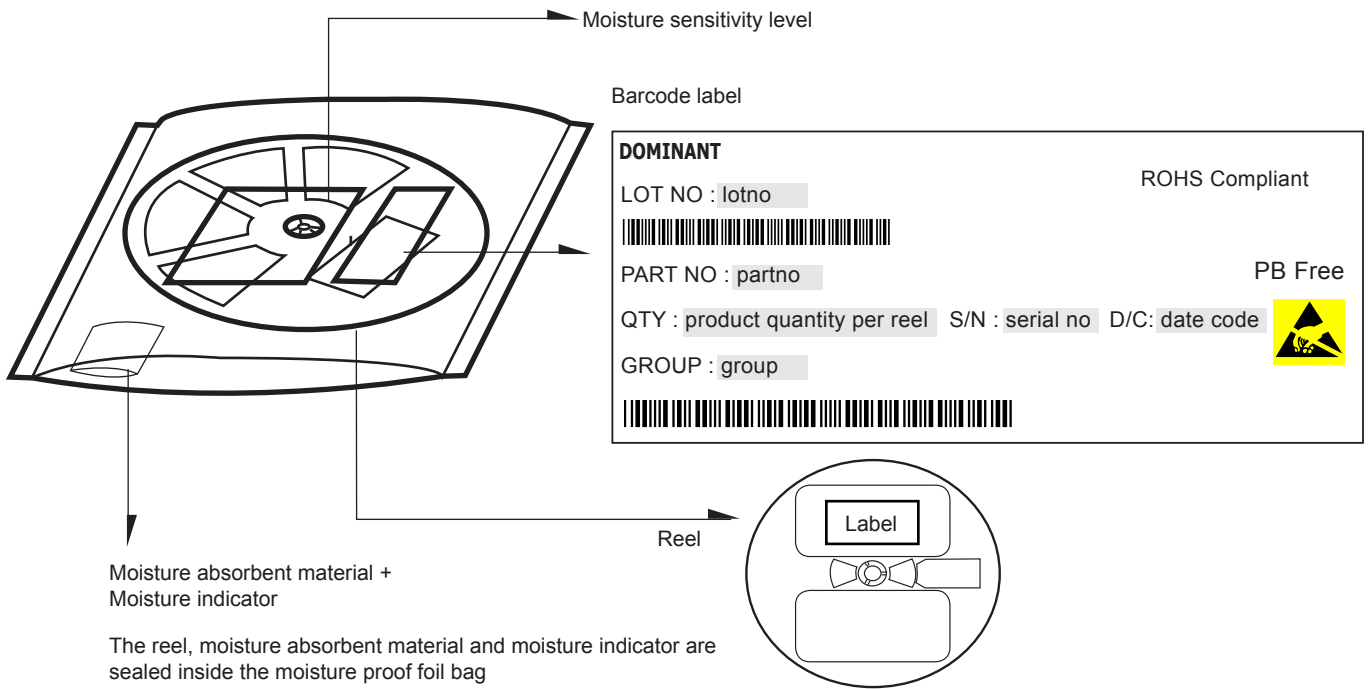
480 mm min. for $\text{Ø}180$ reel.
 960 mm min. for $\text{Ø}330$ reel.



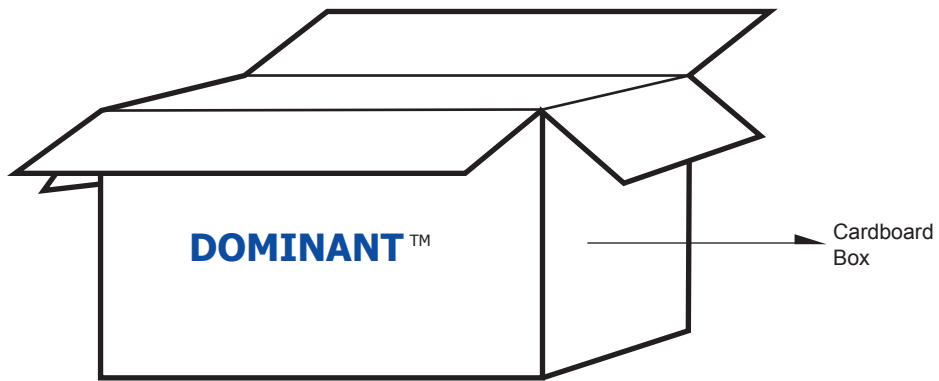
Packaging Specification



Packaging Specification



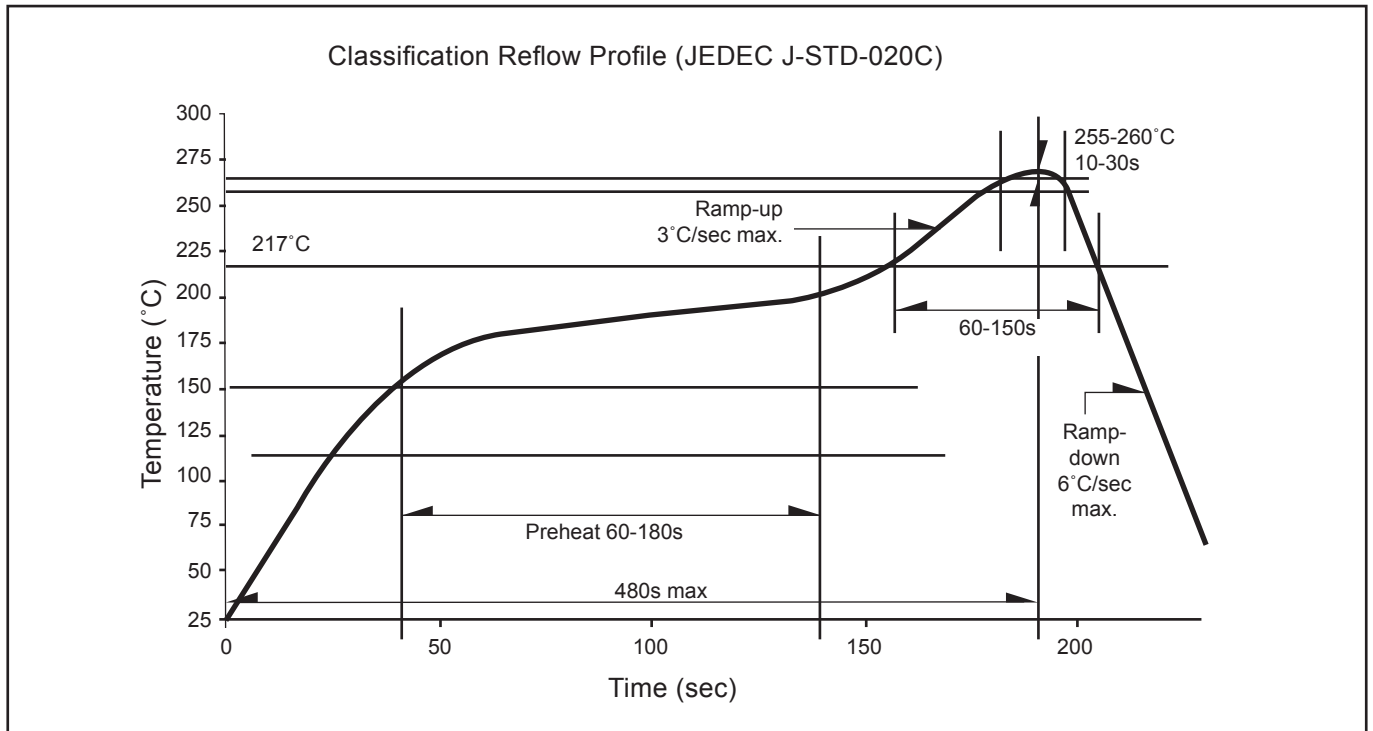
| | |
|--|----------------------------------|
| Average 1pc DomiLED/Multi DomiLED | 1 completed bag (2050pcs) |
| Weight (gram) | 0.034 |
| | 190 ± 10 |



For Multi DomiLED™

| Cardboard Box Size | Dimensions (mm) | Empty Box Weight (kg) | Reel / Box | Quantity / Box (pcs) |
|--------------------|-----------------|-----------------------|--------------|----------------------|
| Small | 300 x 250 x 250 | 0.3 | 15 reels MAX | 30,750 MAX |
| Large | 416 x 516 x 476 | 1.4 | 96 reels MAX | 196,800 MAX |

Recommended Pb-free Soldering Profile



Revision History

| Page | Subjects | Date of Modification |
|-------------|---|-----------------------------|
| - | New Format | 27 Nov 2006 |
| 3 | Print error on Thermal resistance junction/solder point, Rth JS | 04 May 2009 |
| 2, 9 & 11 | Amend standard packing --> 2050 units per reel | 20 Oct 2009 |
| - | Update company name | 04 May 2010 |
| 11 | Typo error on packaging specification | 13 Mar 2014 |
| | | |
| | | |
| | | |
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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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