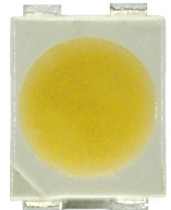


### Power DomiLED<sup>TM</sup>

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLED<sup>TM</sup> truly is a standout performer! Ideal for automotive interior lighting as well as home, office and industrial applications, it is also a proven performer in electronic signs and signals.



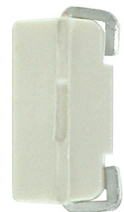
### Features:

- > 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.  
exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL),
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).
- > Lighting: architecture lighting, general lighting, garden light, etc



## Optical Characteristics (Tj=25°C)

| Part Ordering Number | Color      | Viewing Angle° | Total Flux<br>IF=30mA, mlm (typ) | Luminous Intensity @ IF = 30mA IV (mcd) |        |        |
|----------------------|------------|----------------|----------------------------------|-----------------------------------------|--------|--------|
|                      |            |                |                                  | Min.                                    | Typ.   | Max.   |
| DWF-LJG-W2X-1        | Warm White | 120            | 7000                             | 1400.0                                  | 2240.0 | 2850.0 |
| DWF-LJG-X2Y-1        | Warm White | 120            | 11094                            | 2240.0                                  | 3550.0 | 4500.0 |

### NOTE

1. All part number above comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of  $\pm 11\%$ .
3. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
4. 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.

## Electrical Characteristics at Tj=25°C

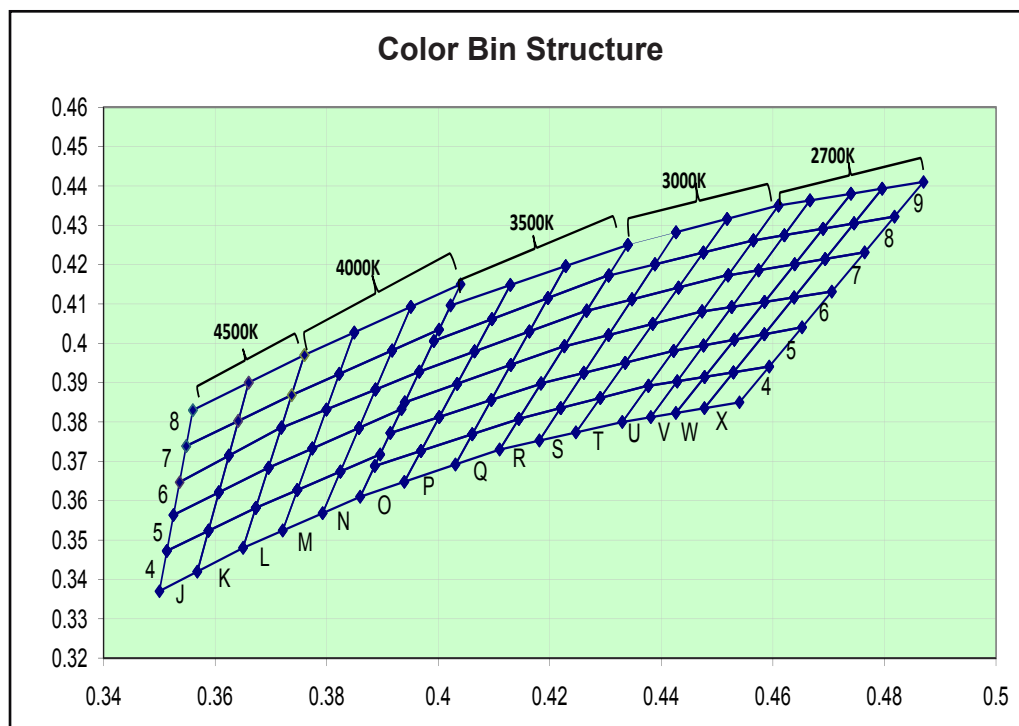
| Part Number | Min. (V) | Vf @ If = 30mA |          | Vr @ Ir = 10uA |  |
|-------------|----------|----------------|----------|----------------|--|
|             |          | Typ. (V)       | Max. (V) | Min. (V)       |  |
| DWF-LJG     | 2.90     | 3.25           | 3.60     | 5              |  |

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

## Absolute Maximum Ratings

|                                                                | Maximum Value | Unit |
|----------------------------------------------------------------|---------------|------|
| DC forward current                                             | 50            | mA   |
| Peak pulse current; (tp $\leq 10\mu s$ , Duty cycle = 0.005)   | 300           | mA   |
| Reverse voltage; Ir (max) = 10 $\mu A$                         | 5             | V    |
| ESD threshold (HBM)                                            | 2000          | V    |
| LED junction temperature                                       | 125           | °C   |
| Operating temperature                                          | -40 ... +110  | °C   |
| Storage temperature                                            | -40 ... +110  | °C   |
| Power dissipation (at room temperature)                        | 200           | mW   |
| Thermal resistance                                             |               |      |
| - Junction / ambient, Rth JA                                   | 300           | K/W  |
| - Junction / solder point, Rth JS                              | 130           | K/W  |
| (Mounting on FR4 PCB, pad size $\geq 16 \text{ mm}^2$ per pad) |               |      |

## Color Bin Structure



| Bin |    | 1      | 2      | 3      | 4      |
|-----|----|--------|--------|--------|--------|
| 4U  | Cx | 0.4330 | 0.4370 | 0.4430 | 0.4380 |
|     | Cy | 0.3800 | 0.3890 | 0.3910 | 0.3810 |
| 5U  | Cx | 0.4370 | 0.4420 | 0.4480 | 0.4430 |
|     | Cy | 0.3890 | 0.3980 | 0.4000 | 0.3910 |
| 6U  | Cx | 0.4420 | 0.4470 | 0.4530 | 0.4480 |
|     | Cy | 0.3980 | 0.4080 | 0.4090 | 0.4000 |
| 7U  | Cx | 0.4470 | 0.4510 | 0.4580 | 0.4530 |
|     | Cy | 0.4080 | 0.4170 | 0.4180 | 0.4090 |
| 8U  | Cx | 0.4510 | 0.4560 | 0.4620 | 0.4580 |
|     | Cy | 0.4170 | 0.4260 | 0.4270 | 0.4180 |
| 9U  | Cx | 0.4560 | 0.4610 | 0.4670 | 0.4620 |
|     | Cy | 0.4260 | 0.4350 | 0.4370 | 0.4270 |
| 4V  | Cx | 0.4380 | 0.4430 | 0.4480 | 0.4430 |
|     | Cy | 0.3810 | 0.3910 | 0.3920 | 0.3830 |
| 5V  | Cx | 0.4430 | 0.4480 | 0.4530 | 0.4480 |
|     | Cy | 0.3910 | 0.4000 | 0.4010 | 0.3920 |
| 6V  | Cx | 0.4480 | 0.4530 | 0.4590 | 0.4530 |
|     | Cy | 0.4000 | 0.4090 | 0.4100 | 0.4010 |
| 7V  | Cx | 0.4530 | 0.4580 | 0.4640 | 0.4590 |
|     | Cy | 0.4090 | 0.4180 | 0.4200 | 0.4100 |
| 8V  | Cx | 0.4580 | 0.4620 | 0.4690 | 0.4640 |
|     | Cy | 0.4180 | 0.4270 | 0.4290 | 0.4200 |
| 9V  | Cx | 0.4620 | 0.4670 | 0.4740 | 0.4690 |
|     | Cy | 0.4270 | 0.4370 | 0.4380 | 0.4290 |

| Bin |    | 1      | 2      | 3      | 4      |
|-----|----|--------|--------|--------|--------|
| 4W  | Cx | 0.4430 | 0.4480 | 0.4540 | 0.4480 |
|     | Cy | 0.3830 | 0.3920 | 0.3930 | 0.3840 |
| 5W  | Cx | 0.4480 | 0.4530 | 0.4590 | 0.4540 |
|     | Cy | 0.3920 | 0.4010 | 0.4020 | 0.3930 |
| 6W  | Cx | 0.4530 | 0.4590 | 0.4640 | 0.4590 |
|     | Cy | 0.4010 | 0.4100 | 0.4120 | 0.4020 |
| 7W  | Cx | 0.4590 | 0.4640 | 0.4700 | 0.4640 |
|     | Cy | 0.4100 | 0.4200 | 0.4210 | 0.4120 |
| 8W  | Cx | 0.4640 | 0.4690 | 0.4750 | 0.4700 |
|     | Cy | 0.4200 | 0.4290 | 0.4300 | 0.4210 |
| 9W  | Cx | 0.4690 | 0.4740 | 0.4800 | 0.4750 |
|     | Cy | 0.4290 | 0.4380 | 0.4400 | 0.4300 |
| 4X  | Cx | 0.4480 | 0.4540 | 0.4590 | 0.4540 |
|     | Cy | 0.3840 | 0.3930 | 0.3940 | 0.3850 |
| 5X  | Cx | 0.4540 | 0.4590 | 0.4650 | 0.4590 |
|     | Cy | 0.3930 | 0.4020 | 0.4040 | 0.3940 |
| 6X  | Cx | 0.4590 | 0.4640 | 0.4700 | 0.4650 |
|     | Cy | 0.4020 | 0.4120 | 0.4130 | 0.4040 |
| 7X  | Cx | 0.4640 | 0.4700 | 0.4760 | 0.4700 |
|     | Cy | 0.4120 | 0.4210 | 0.4230 | 0.4130 |
| 8X  | Cx | 0.4700 | 0.4750 | 0.4810 | 0.4760 |
|     | Cy | 0.4210 | 0.4300 | 0.4320 | 0.4230 |
| 9X  | Cx | 0.4750 | 0.4800 | 0.4870 | 0.4810 |
|     | Cy | 0.4300 | 0.4400 | 0.4410 | 0.4320 |
| 4R  | Cx | 0.4110 | 0.4150 | 0.4220 | 0.4180 |
|     | Cy | 0.3730 | 0.3810 | 0.3840 | 0.3750 |
| 5R  | Cx | 0.4150 | 0.4190 | 0.4260 | 0.4220 |
|     | Cy | 0.3810 | 0.3900 | 0.3930 | 0.3840 |
| 6R  | Cx | 0.4190 | 0.4220 | 0.4300 | 0.4260 |
|     | Cy | 0.3900 | 0.3990 | 0.4020 | 0.3930 |
| 7R  | Cx | 0.4220 | 0.4260 | 0.4350 | 0.4300 |
|     | Cy | 0.3990 | 0.4080 | 0.4110 | 0.4020 |
| 8R  | Cx | 0.4260 | 0.4300 | 0.4390 | 0.4350 |
|     | Cy | 0.4080 | 0.4170 | 0.4200 | 0.4110 |
| 9R  | Cx | 0.4300 | 0.4340 | 0.4430 | 0.4390 |
|     | Cy | 0.4170 | 0.4250 | 0.4290 | 0.4200 |
| 4S  | Cx | 0.4180 | 0.4220 | 0.4300 | 0.4250 |
|     | Cy | 0.3750 | 0.3840 | 0.3870 | 0.3780 |
| 5S  | Cx | 0.4220 | 0.4260 | 0.4340 | 0.4300 |
|     | Cy | 0.3840 | 0.3930 | 0.3960 | 0.3870 |
| 6S  | Cx | 0.4260 | 0.4300 | 0.4390 | 0.4340 |
|     | Cy | 0.3930 | 0.4020 | 0.4050 | 0.3960 |
| 7S  | Cx | 0.4300 | 0.4350 | 0.4430 | 0.4390 |
|     | Cy | 0.4020 | 0.4110 | 0.4140 | 0.4050 |
| 8S  | Cx | 0.4350 | 0.4390 | 0.4470 | 0.4430 |
|     | Cy | 0.4110 | 0.4200 | 0.4230 | 0.4140 |
| 9S  | Cx | 0.4390 | 0.4430 | 0.4520 | 0.4470 |
|     | Cy | 0.4200 | 0.4290 | 0.4320 | 0.4230 |
| 4T  | Cx | 0.4250 | 0.4300 | 0.4370 | 0.4330 |
|     | Cy | 0.3780 | 0.3870 | 0.3890 | 0.3800 |

| Bin |    | 1      | 2      | 3      | 4      |
|-----|----|--------|--------|--------|--------|
| 5T  | Cx | 0.4300 | 0.4340 | 0.4420 | 0.4370 |
|     | Cy | 0.3870 | 0.3960 | 0.3980 | 0.3890 |
| 6T  | Cx | 0.4340 | 0.4390 | 0.4470 | 0.4420 |
|     | Cy | 0.3960 | 0.4050 | 0.4080 | 0.3980 |
| 7T  | Cx | 0.4390 | 0.4430 | 0.4510 | 0.4470 |
|     | Cy | 0.4050 | 0.4140 | 0.4170 | 0.4080 |
| 8T  | Cx | 0.4430 | 0.4470 | 0.4560 | 0.4510 |
|     | Cy | 0.4140 | 0.4230 | 0.4260 | 0.4170 |
| 9T  | Cx | 0.4470 | 0.4520 | 0.4610 | 0.4560 |
|     | Cy | 0.4230 | 0.4320 | 0.4350 | 0.4260 |
| 4O  | Cx | 0.3860 | 0.3890 | 0.3980 | 0.3940 |
|     | Cy | 0.3610 | 0.3690 | 0.3730 | 0.3650 |
| 5O  | Cx | 0.3890 | 0.3910 | 0.4010 | 0.3980 |
|     | Cy | 0.3690 | 0.3770 | 0.3810 | 0.3730 |
| 6O  | Cx | 0.3910 | 0.3940 | 0.4040 | 0.4010 |
|     | Cy | 0.3770 | 0.3850 | 0.3900 | 0.3810 |
| 7O  | Cx | 0.3940 | 0.3970 | 0.4070 | 0.4040 |
|     | Cy | 0.3850 | 0.3930 | 0.3980 | 0.3900 |
| 8O  | Cx | 0.3970 | 0.4000 | 0.4100 | 0.4070 |
|     | Cy | 0.3930 | 0.4010 | 0.4060 | 0.3980 |
| 9O  | Cx | 0.4000 | 0.4030 | 0.4130 | 0.4100 |
|     | Cy | 0.4010 | 0.4100 | 0.4150 | 0.4060 |
| 4P  | Cx | 0.3940 | 0.3980 | 0.4060 | 0.4030 |
|     | Cy | 0.3650 | 0.3730 | 0.3770 | 0.3690 |
| 5P  | Cx | 0.3980 | 0.4010 | 0.4100 | 0.4060 |
|     | Cy | 0.3730 | 0.3810 | 0.3860 | 0.3770 |
| 6P  | Cx | 0.4010 | 0.4040 | 0.4130 | 0.4100 |
|     | Cy | 0.3810 | 0.3900 | 0.3940 | 0.3860 |
| 7P  | Cx | 0.4040 | 0.4070 | 0.4160 | 0.4130 |
|     | Cy | 0.3900 | 0.3980 | 0.4030 | 0.3940 |
| 8P  | Cx | 0.4070 | 0.4100 | 0.4200 | 0.4160 |
|     | Cy | 0.3980 | 0.4060 | 0.4120 | 0.4030 |
| 9P  | Cx | 0.4100 | 0.4130 | 0.4230 | 0.4200 |
|     | Cy | 0.4060 | 0.4150 | 0.4200 | 0.4120 |
| 4Q  | Cx | 0.4030 | 0.4060 | 0.4150 | 0.4110 |
|     | Cy | 0.3690 | 0.3770 | 0.3810 | 0.3730 |
| 5Q  | Cx | 0.4060 | 0.4100 | 0.4190 | 0.4150 |
|     | Cy | 0.3770 | 0.3860 | 0.3900 | 0.3810 |
| 6Q  | Cx | 0.4100 | 0.4130 | 0.4220 | 0.4190 |
|     | Cy | 0.3860 | 0.3940 | 0.3990 | 0.3900 |
| 7Q  | Cx | 0.4130 | 0.4160 | 0.4260 | 0.4220 |
|     | Cy | 0.3940 | 0.4030 | 0.4080 | 0.3990 |
| 8Q  | Cx | 0.4160 | 0.4200 | 0.4300 | 0.4260 |
|     | Cy | 0.4030 | 0.4120 | 0.4170 | 0.4080 |
| 9Q  | Cx | 0.4200 | 0.4230 | 0.4340 | 0.4300 |
|     | Cy | 0.4120 | 0.4200 | 0.4250 | 0.4170 |
| 4L  | Cx | 0.3650 | 0.3670 | 0.3750 | 0.3720 |
|     | Cy | 0.3480 | 0.3580 | 0.3620 | 0.3520 |
| 5L  | Cx | 0.3670 | 0.3690 | 0.3770 | 0.3750 |
|     | Cy | 0.3580 | 0.3680 | 0.3730 | 0.3620 |

| Bin |    | 1      | 2      | 3      | 4      |
|-----|----|--------|--------|--------|--------|
| 6L  | Cx | 0.3690 | 0.3710 | 0.3800 | 0.3770 |
|     | Cy | 0.3680 | 0.3780 | 0.3830 | 0.3730 |
| 7L  | Cx | 0.3710 | 0.3740 | 0.3830 | 0.3800 |
|     | Cy | 0.3780 | 0.3870 | 0.3930 | 0.3830 |
| 8L  | Cx | 0.3740 | 0.3760 | 0.3850 | 0.3830 |
|     | Cy | 0.3870 | 0.3970 | 0.4030 | 0.3930 |
| 4M  | Cx | 0.3720 | 0.3750 | 0.3820 | 0.3790 |
|     | Cy | 0.3520 | 0.3620 | 0.3670 | 0.3560 |
| 5M  | Cx | 0.3750 | 0.3770 | 0.3850 | 0.3820 |
|     | Cy | 0.3620 | 0.3730 | 0.3780 | 0.3670 |
| 6M  | Cx | 0.3770 | 0.3800 | 0.3880 | 0.3850 |
|     | Cy | 0.3730 | 0.3830 | 0.3880 | 0.3780 |
| 7M  | Cx | 0.3800 | 0.3830 | 0.3920 | 0.3880 |
|     | Cy | 0.3830 | 0.3930 | 0.3990 | 0.3880 |
| 8M  | Cx | 0.3830 | 0.3850 | 0.3950 | 0.3920 |
|     | Cy | 0.3930 | 0.4030 | 0.4090 | 0.3990 |
| 4N  | Cx | 0.3790 | 0.3820 | 0.3900 | 0.3860 |
|     | Cy | 0.3560 | 0.3670 | 0.3720 | 0.3610 |
| 5N  | Cx | 0.3820 | 0.3850 | 0.3930 | 0.3900 |
|     | Cy | 0.3670 | 0.3780 | 0.3830 | 0.3720 |
| 6N  | Cx | 0.3850 | 0.3880 | 0.3970 | 0.3930 |
|     | Cy | 0.3780 | 0.3880 | 0.3930 | 0.3830 |
| 7N  | Cx | 0.3880 | 0.3920 | 0.4010 | 0.3970 |
|     | Cy | 0.3880 | 0.3990 | 0.4040 | 0.3930 |
| 8N  | Cx | 0.3920 | 0.3950 | 0.4040 | 0.4010 |
|     | Cy | 0.3990 | 0.4090 | 0.4150 | 0.4040 |
| 4J  | Cx | 0.3500 | 0.3510 | 0.3590 | 0.3570 |
|     | Cy | 0.3370 | 0.3470 | 0.3520 | 0.3430 |
| 5J  | Cx | 0.3510 | 0.3520 | 0.3610 | 0.3590 |
|     | Cy | 0.3470 | 0.3560 | 0.3620 | 0.3520 |
| 6J  | Cx | 0.3520 | 0.3540 | 0.3630 | 0.3610 |
|     | Cy | 0.3560 | 0.3650 | 0.3710 | 0.3620 |
| 7J  | Cx | 0.3540 | 0.3550 | 0.3640 | 0.3630 |
|     | Cy | 0.3650 | 0.3740 | 0.3810 | 0.3710 |
| 8J  | Cx | 0.3550 | 0.3560 | 0.3660 | 0.3640 |
|     | Cy | 0.3740 | 0.3830 | 0.3900 | 0.3810 |
| 4K  | Cx | 0.3570 | 0.3590 | 0.3670 | 0.3650 |
|     | Cy | 0.3430 | 0.3520 | 0.3580 | 0.3480 |
| 5K  | Cx | 0.3590 | 0.3610 | 0.3690 | 0.3670 |
|     | Cy | 0.3520 | 0.3620 | 0.3680 | 0.3580 |
| 6K  | Cx | 0.3610 | 0.3630 | 0.3710 | 0.3690 |
|     | Cy | 0.3620 | 0.3710 | 0.3780 | 0.3680 |
| 7K  | Cx | 0.3630 | 0.3640 | 0.3740 | 0.3710 |
|     | Cy | 0.3710 | 0.3810 | 0.3870 | 0.3780 |
| 8K  | Cx | 0.3640 | 0.3660 | 0.3760 | 0.3740 |
|     | Cy | 0.3810 | 0.3900 | 0.3970 | 0.3870 |

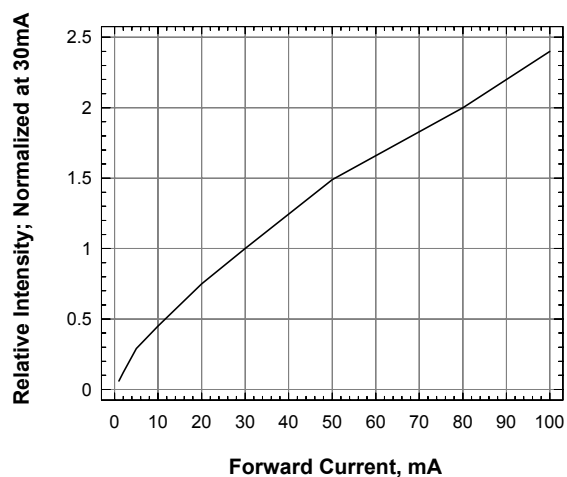
InGaN wavelength is very sensitive to drive current. Operating at lower current is not recommended and may yield unpredictable performance current pulsing should be used for dimming purposed.

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

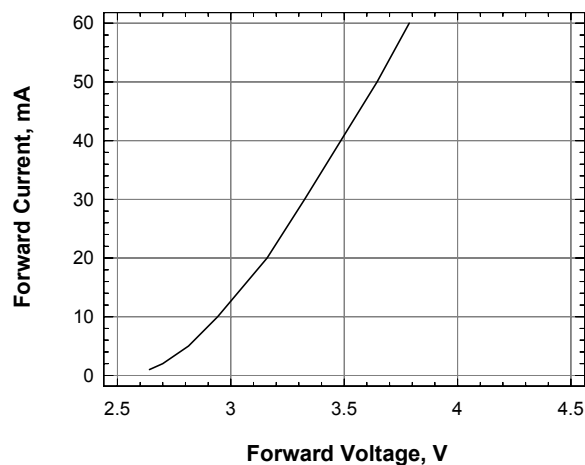
| Brightness Group | Luminous Intensity<br>IV (mcd) |
|------------------|--------------------------------|
| W2               | 1400.0 ... 1800.0              |
| X1               | 1800.0 ... 2240.0              |
| X2               | 2240.0 ... 2850.0              |
| Y1               | 2850.0 ... 3550.0              |
| Y2               | 3550.0 ... 4500.0              |

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

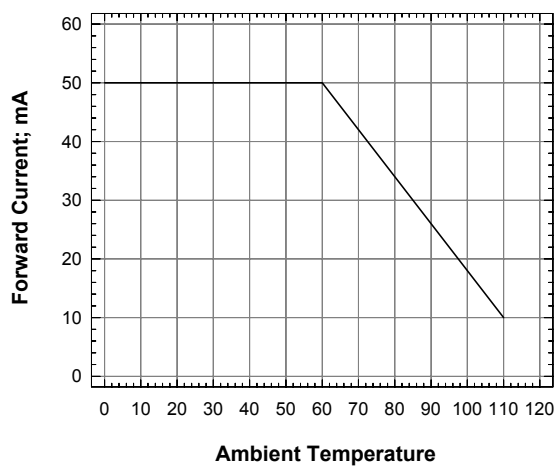
Relative Intensity Vs Forward Current



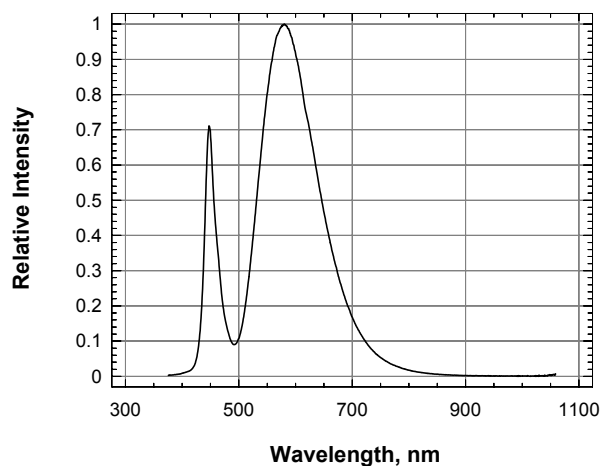
Forward Current Vs Forward Voltage



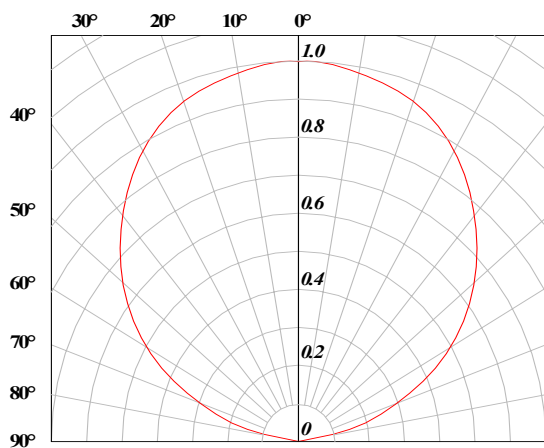
Forward Current Vs Ambient Temperature



Relative Intensity Vs Wavelength

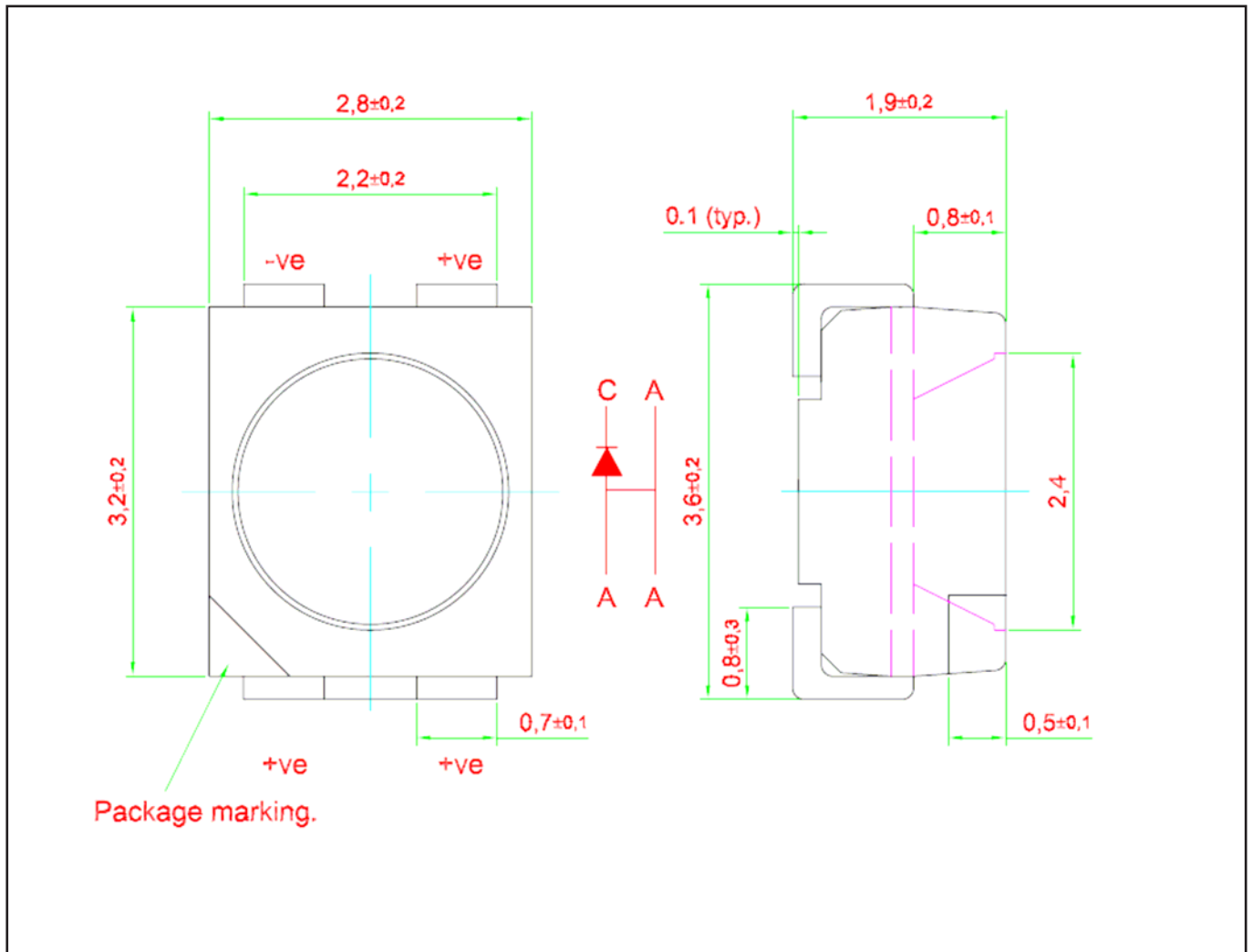


Radiation Pattern





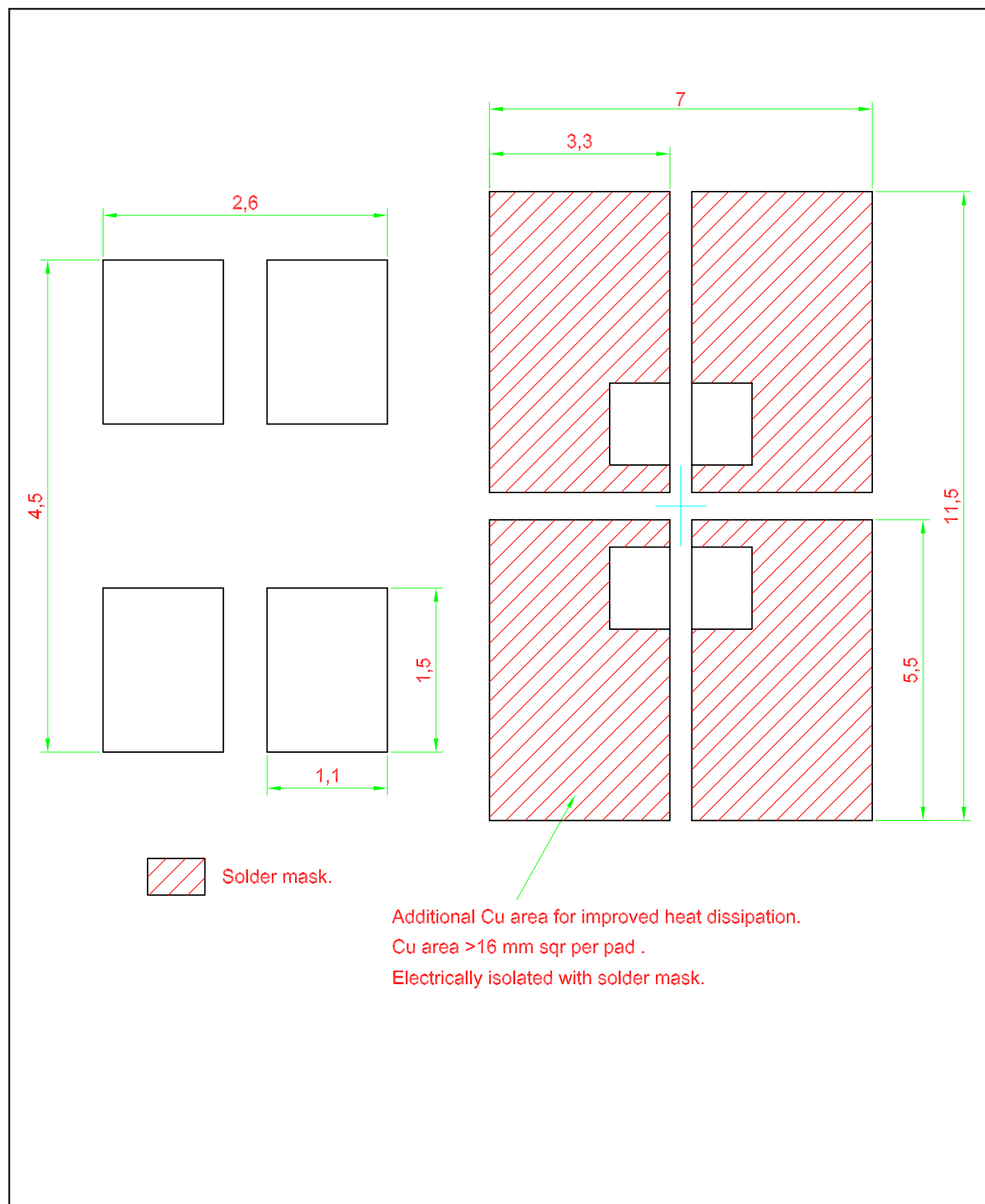
**Power DomiLED™ • InGaN Warm White : DWF-LJG Package Outlines**



**Material**

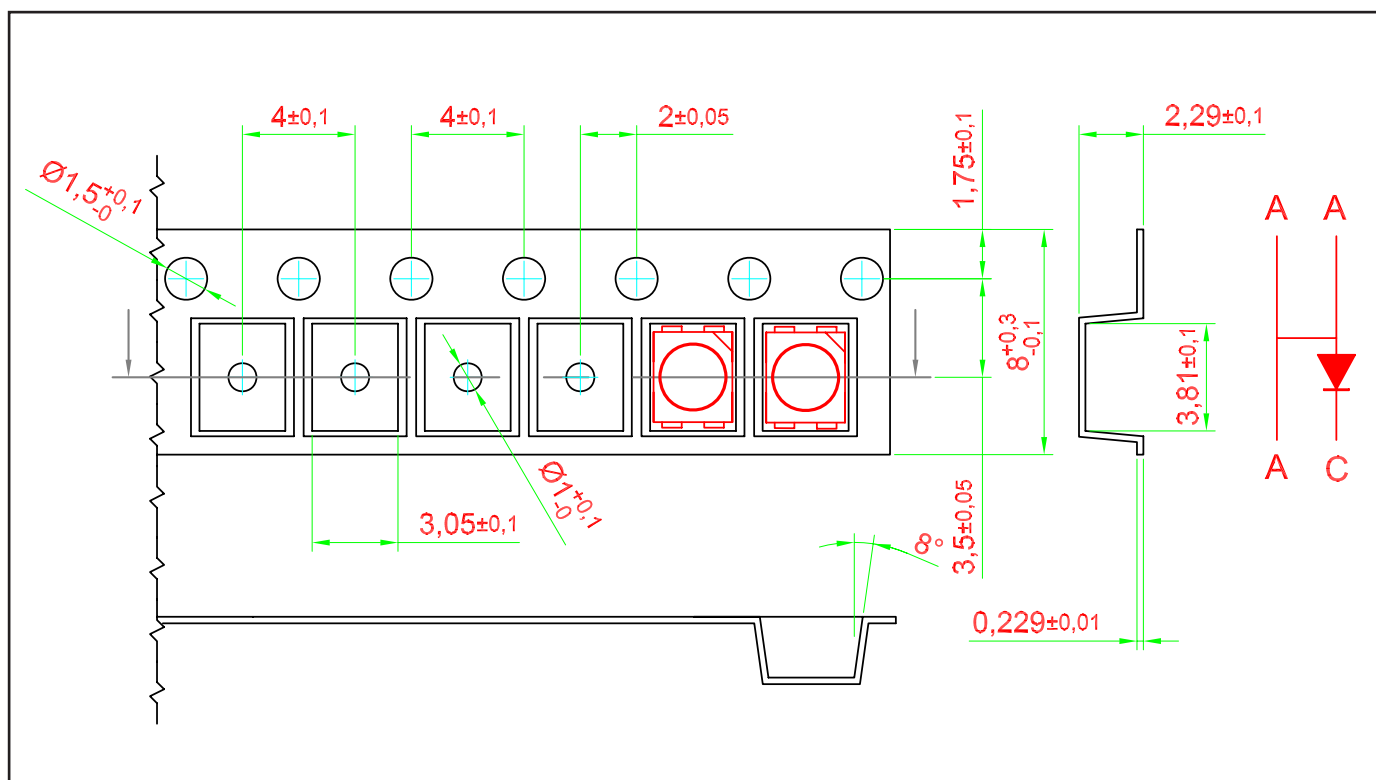
| Material        |                                         |
|-----------------|-----------------------------------------|
| Lead-frame      | Cu Alloy With Ag Plating                |
| Package         | High Temperature Resistant Plastic, PPA |
| Encapsulant     | Silicone Resin                  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

## Recommended Solder Pad



## Taping and orientation

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

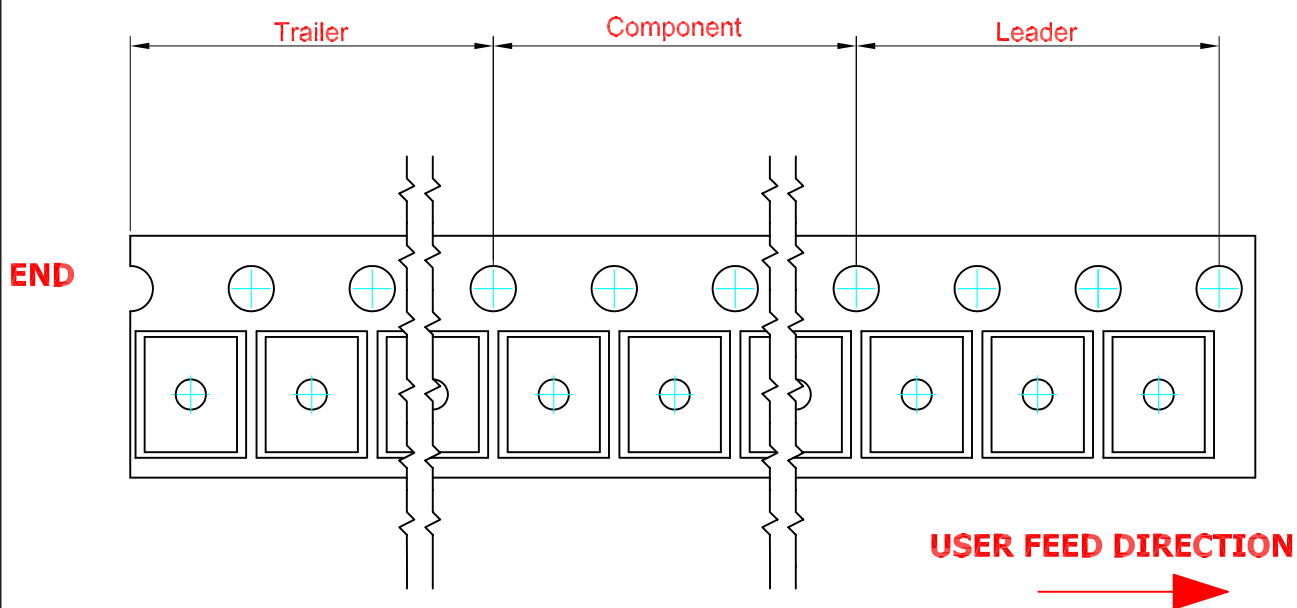


200 mm min. for  $\varnothing 180$  reel.

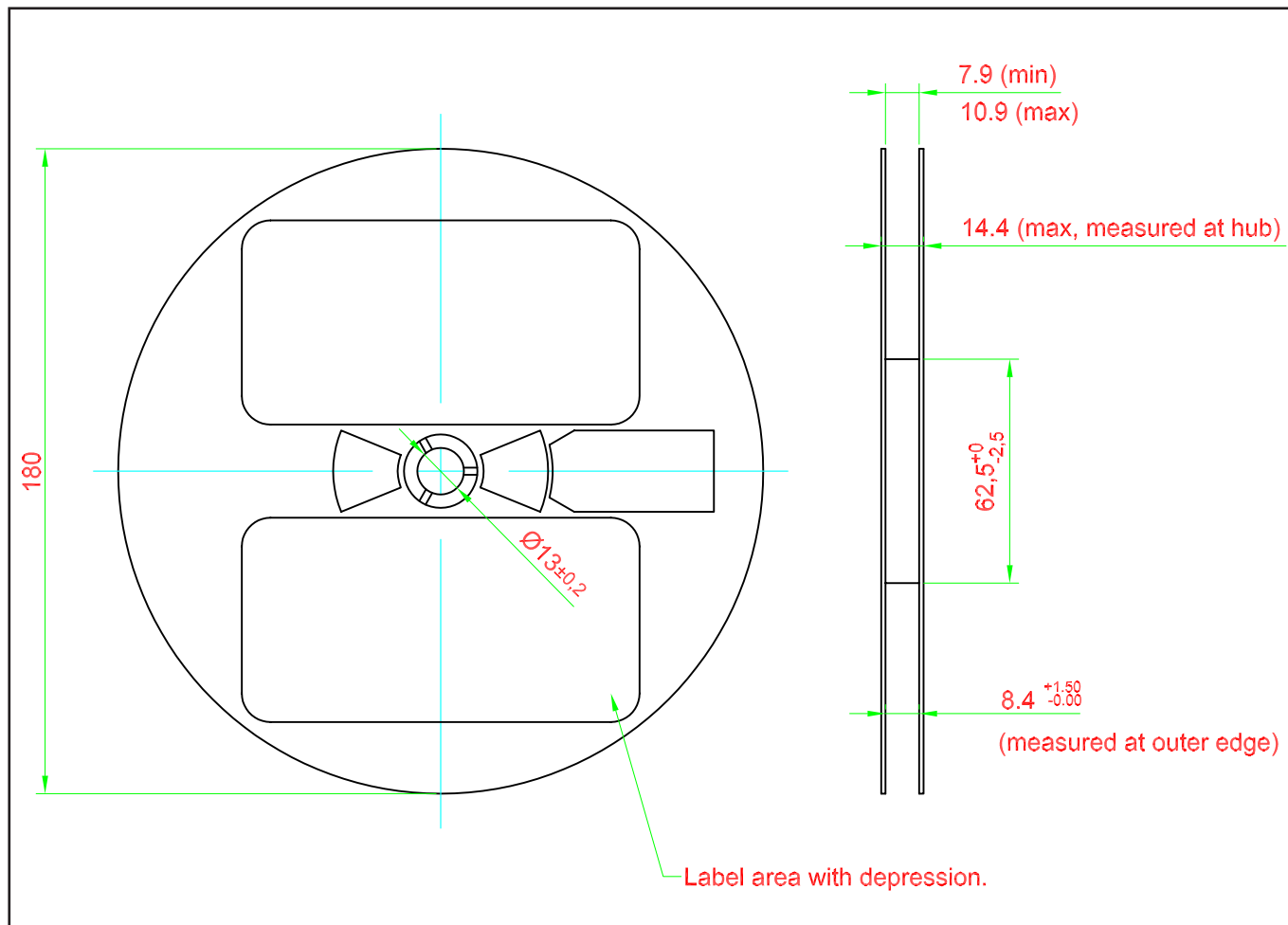
480 mm min. for  $\varnothing 180$  reel.

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

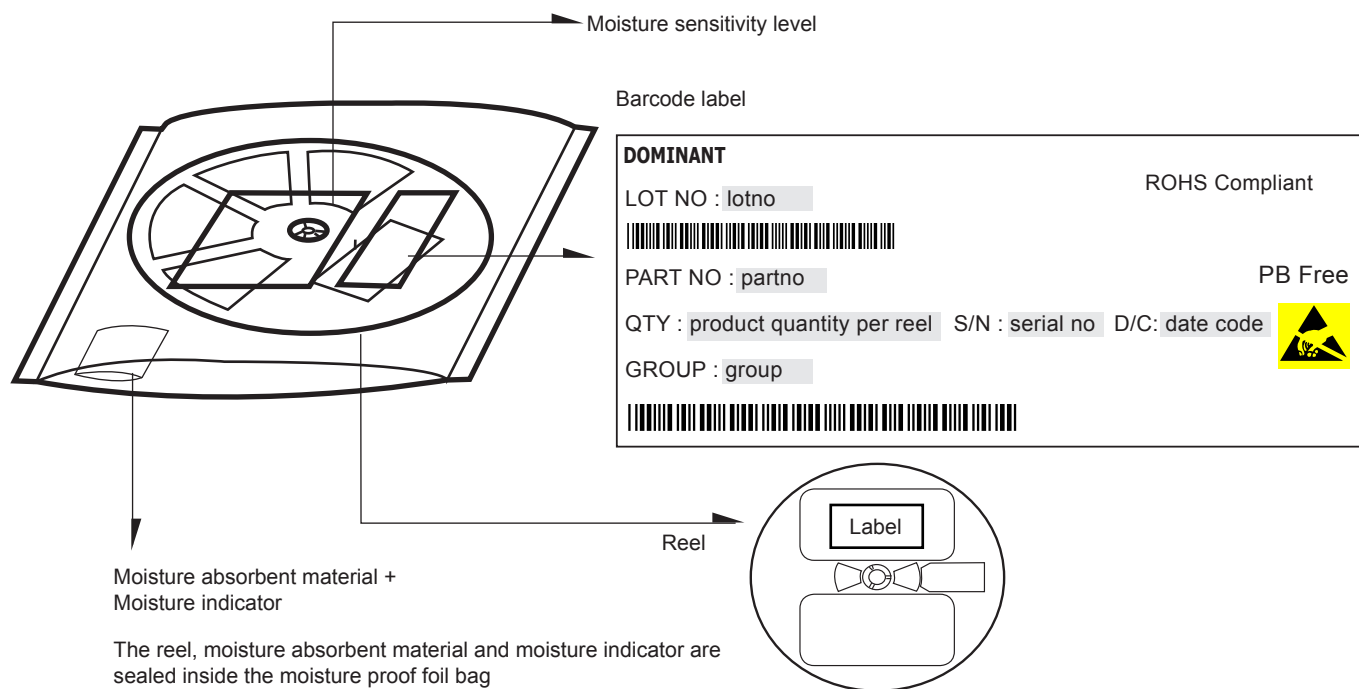
960 mm min. for  $\varnothing 330$  reel.



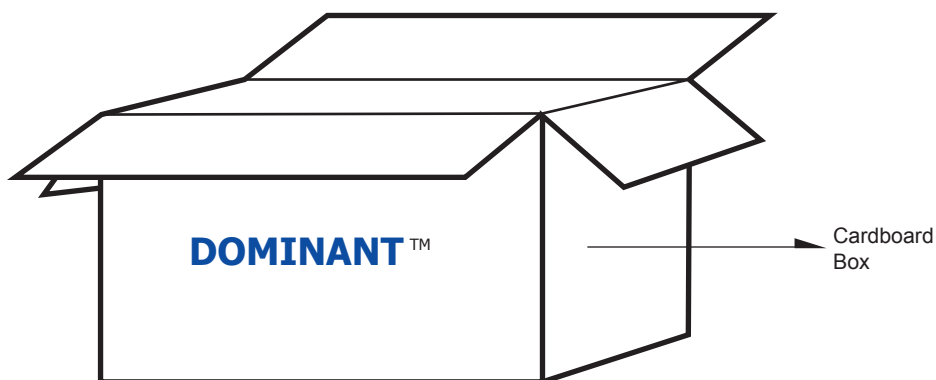
## Packaging Specification



## Packaging Specification



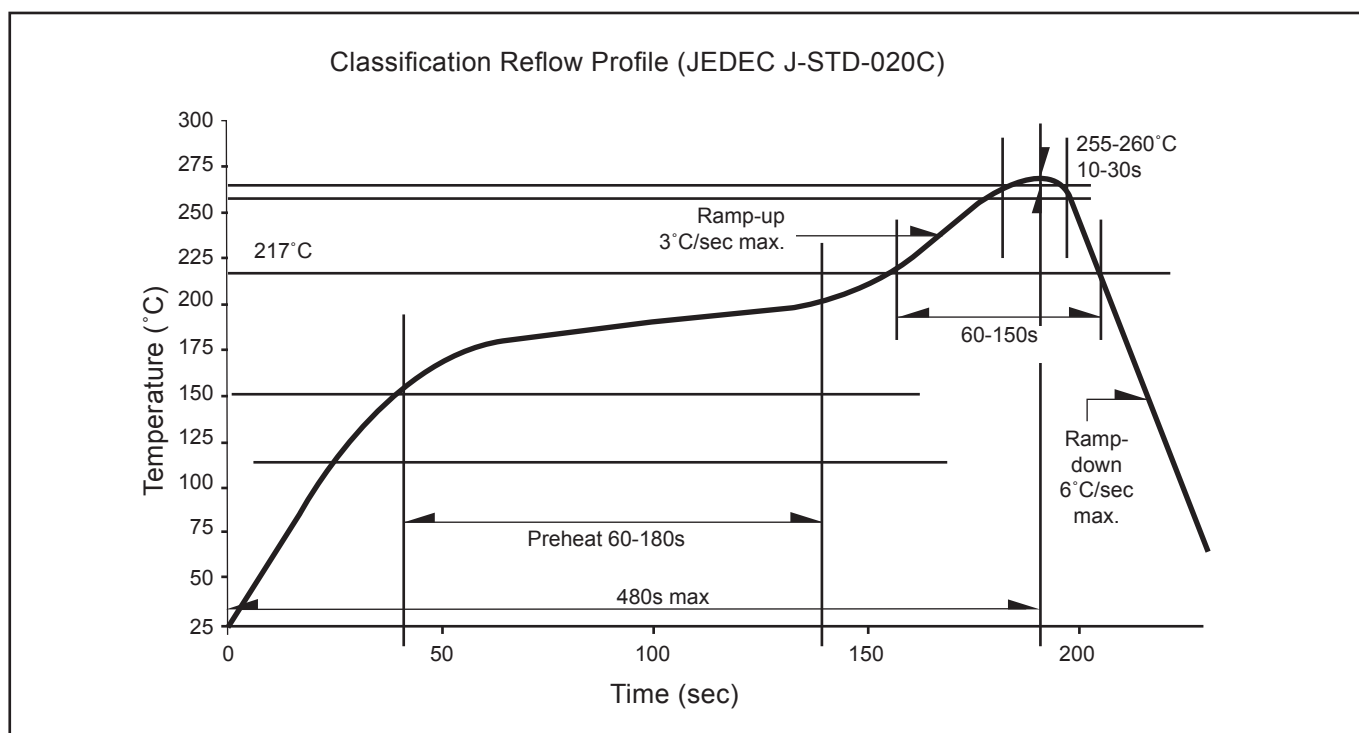
|               | Average 1pc Power DomiLED | 1 completed bag (2000pcs) |
|---------------|---------------------------|---------------------------|
| Weight (gram) | 0.034                     | 190 ± 10                  |



### For Power 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                                                                          | 21 Jun 2012          |
| 2    | Update Thermal Resistance                                                                | 13 Mar 2013          |
| 2    | Add new partno: DWF-LJG-X2Y-1<br>Update Operating Temperature and<br>Storage Temperature | 09 Jul 2013          |
| 2    | Typo error on Vf                                                                         | 23 Jan 2014          |
|      |                                                                                          |                      |
|      |                                                                                          |                      |
|      |                                                                                          |                      |
|      |                                                                                          |                      |
|      |                                                                                          |                      |
|      |                                                                                          |                      |
|      |                                                                                          |                      |

### 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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