

DomiLEDTM

With the intense colors that seem to glow with energy and its significant brightness, DomiLEDTM 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:

- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Communication: mobile phone flash light, backlights in mobile phone display.
- > Industry: general lighting



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	CRI Typ.	Luminous Intensity @ 20mA IV (mcd)			Luminous Flux Typ. (lm)
				Min.	Typ.	Max.	
DDF-WJG-2X4X-1	Warm White	120	75	2020.0	2200.0	2850.0	6.6

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			Vr @ Ir = 10 µA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDF-WJG-2X4X-1	2.9	3.2	3.5	5.0

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

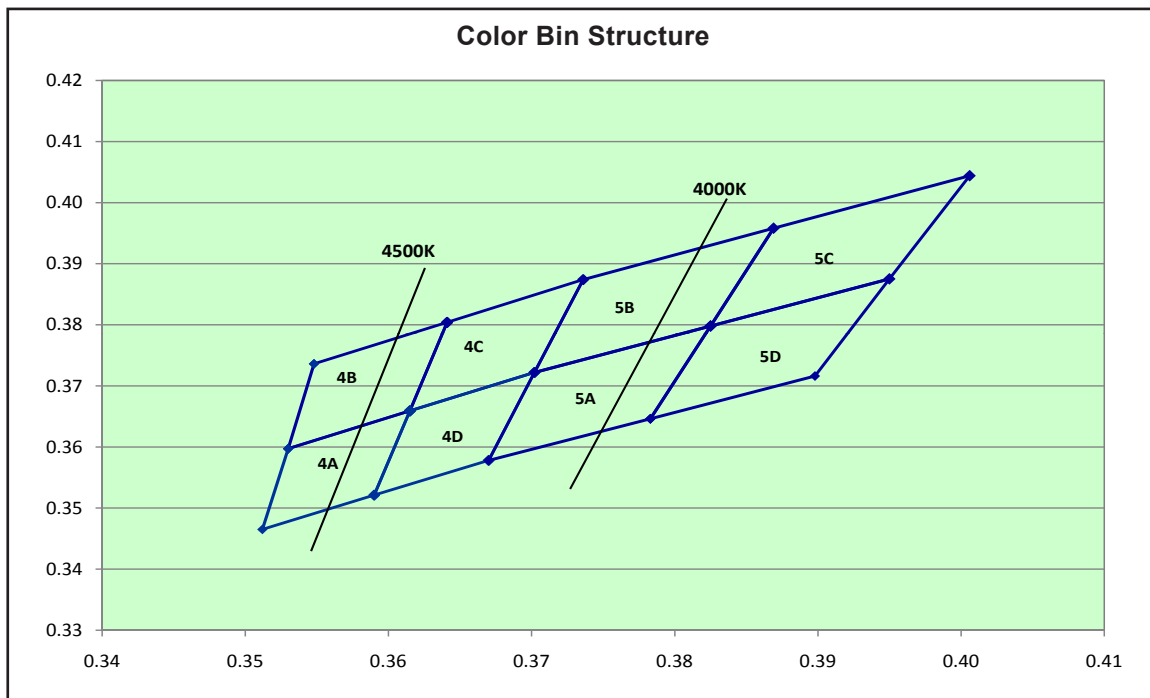
Absolute Maximum Ratings

	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)	500	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 ≥ 16mm² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_V	DDF-WJG	-3.70	mV / K
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{IV}	DDF-WJG	-0.16	% / K
Temperature coefficient of C_x (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{Cx}	DDF-WJG	-0.00007	/ $^\circ\text{C}$
Temperature coefficient of C_y (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{Cy}	DDF-WJG	-0.00005	/ $^\circ\text{C}$

DDF, Color Bin Structure

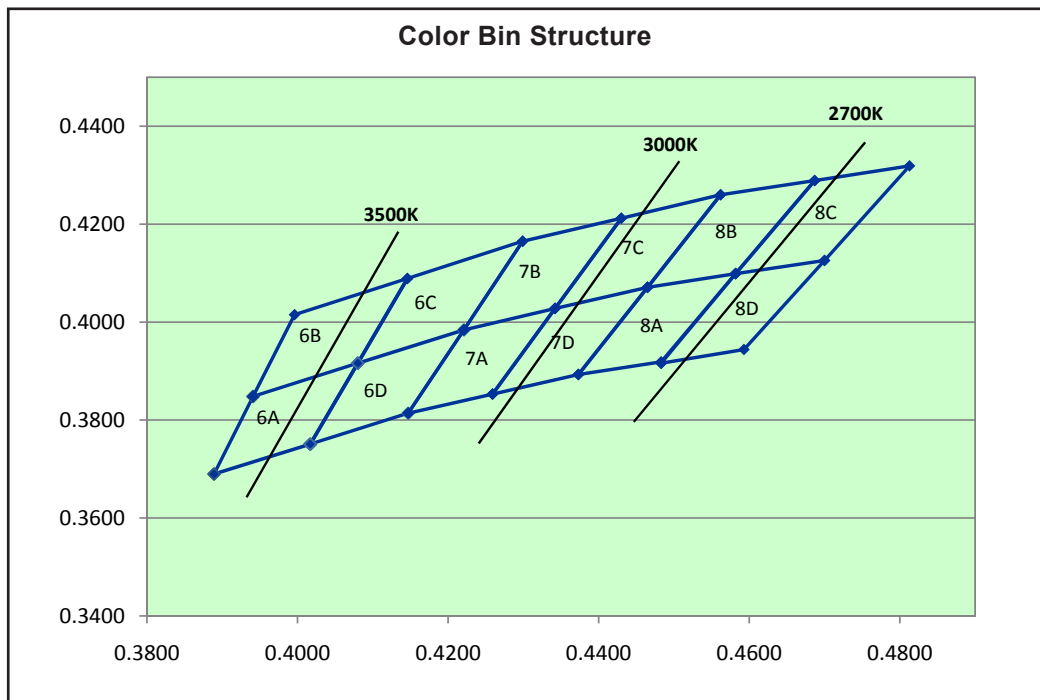


Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
4A	Cx	0.3530	0.3615	0.3590	0.3512
	Cy	0.3597	0.3659	0.3521	0.3465
4B	Cx	0.3548	0.3641	0.3615	0.3530
	Cy	0.3736	0.3804	0.3659	0.3597
4C	Cx	0.3641	0.3736	0.3702	0.3615
	Cy	0.3804	0.3874	0.3722	0.3659
4D	Cx	0.3615	0.3702	0.3670	0.3590
	Cy	0.3659	0.3722	0.3578	0.3521
5A	Cx	0.3670	0.3783	0.3825	0.3702
	Cy	0.3578	0.3646	0.3798	0.3722
5B	Cx	0.3702	0.3825	0.3869	0.3736
	Cy	0.3722	0.3798	0.3958	0.3874
5C	Cx	0.3825	0.3950	0.4006	0.3869
	Cy	0.3798	0.3875	0.4044	0.3958
5D	Cx	0.3783	0.3898	0.3950	0.3825
	Cy	0.3646	0.3716	0.3875	0.3798

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

DDF, Color Bin Structure



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

Bin		1	2	3	4
6A	Cx	0.3889	0.3941	0.4080	0.4017
	Cy	0.3690	0.3848	0.3916	0.3751
6B	Cx	0.3941	0.3996	0.4146	0.4080
	Cy	0.3848	0.4015	0.4089	0.3916
6C	Cx	0.4080	0.4146	0.4299	0.4221
	Cy	0.3916	0.4089	0.4165	0.3984
6D	Cx	0.4017	0.4080	0.4221	0.4147
	Cy	0.3751	0.3916	0.3984	0.3814
7A	Cx	0.4147	0.4221	0.4342	0.4259
	Cy	0.3814	0.3984	0.4028	0.3853
7B	Cx	0.4221	0.4299	0.4430	0.4342
	Cy	0.3984	0.4165	0.4212	0.4028
7C	Cx	0.4342	0.4430	0.4562	0.4465
	Cy	0.4028	0.4212	0.4260	0.4071
7D	Cx	0.4259	0.4342	0.4465	0.4373
	Cy	0.3853	0.4028	0.4071	0.3893
8A	Cx	0.4373	0.4465	0.4582	0.4483
	Cy	0.3893	0.4071	0.4099	0.3919
8B	Cx	0.4465	0.4562	0.4687	0.4582
	Cy	0.4071	0.4260	0.4289	0.4099
8C	Cx	0.4582	0.4687	0.4813	0.4700
	Cy	0.4099	0.4289	0.4319	0.4126
8D	Cx	0.4483	0.4582	0.4700	0.4593
	Cy	0.3916	0.4099	0.4126	0.3944

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

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity IV (mcd)
2X	2020.0 ... 2240.0
3X	2240.0 ... 2540.0
4X	2540.0 ... 2850.0

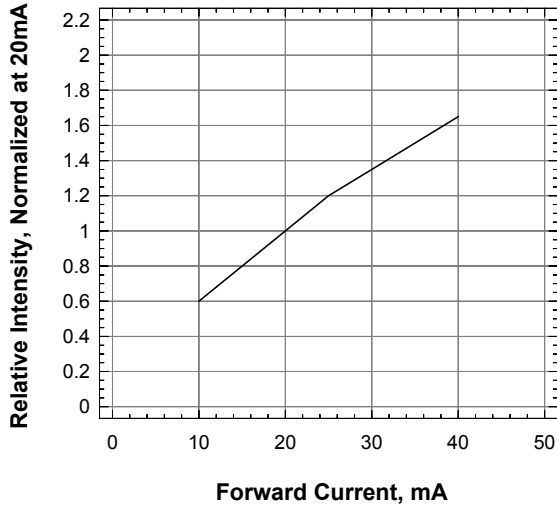
Luminous intensity is measured with an accuracy of ± 11%.

Vf Binning

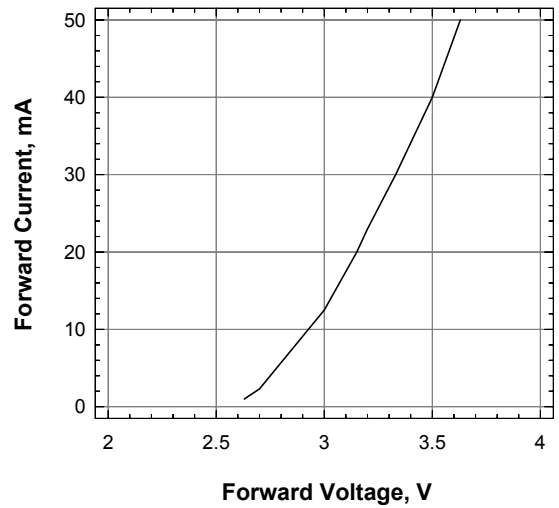
Vf Bin	Forward Voltage (V)
V1	2.90 ... 3.00
V2	3.00 ... 3.10
V3	3.10 ... 3.20
V4	3.20 ... 3.30
V5	3.30 ... 3.40
V6	3.40 ... 3.50

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

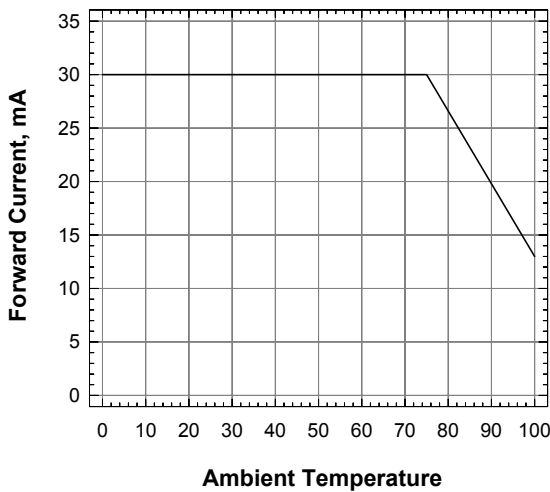
Relative Intensity Vs Forward Current



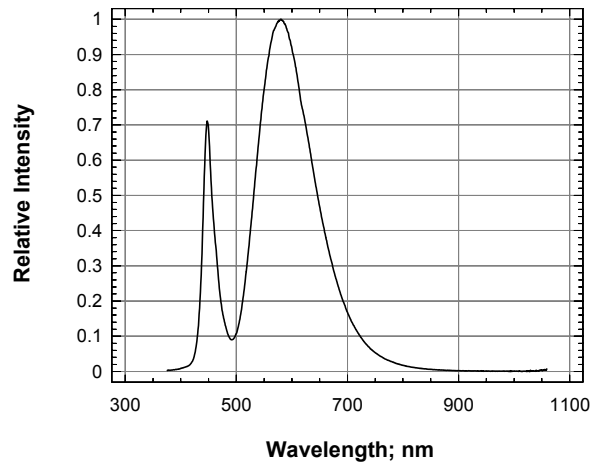
Forward Current Vs Forward Voltage



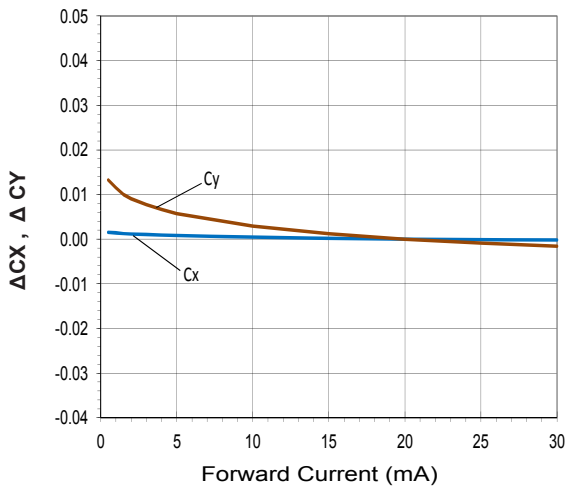
Maximum Forward Current Vs Ambient Temperature



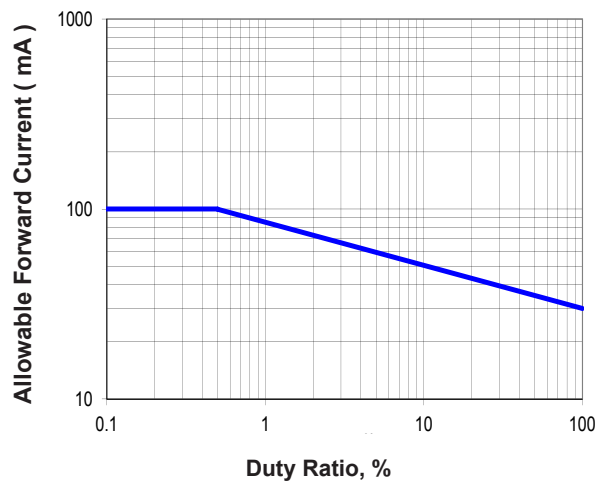
Relative Intensity Vs Wavelength



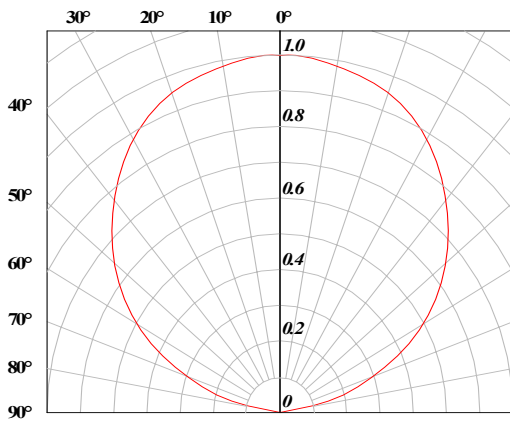
Chromaticity Coordinate Shift



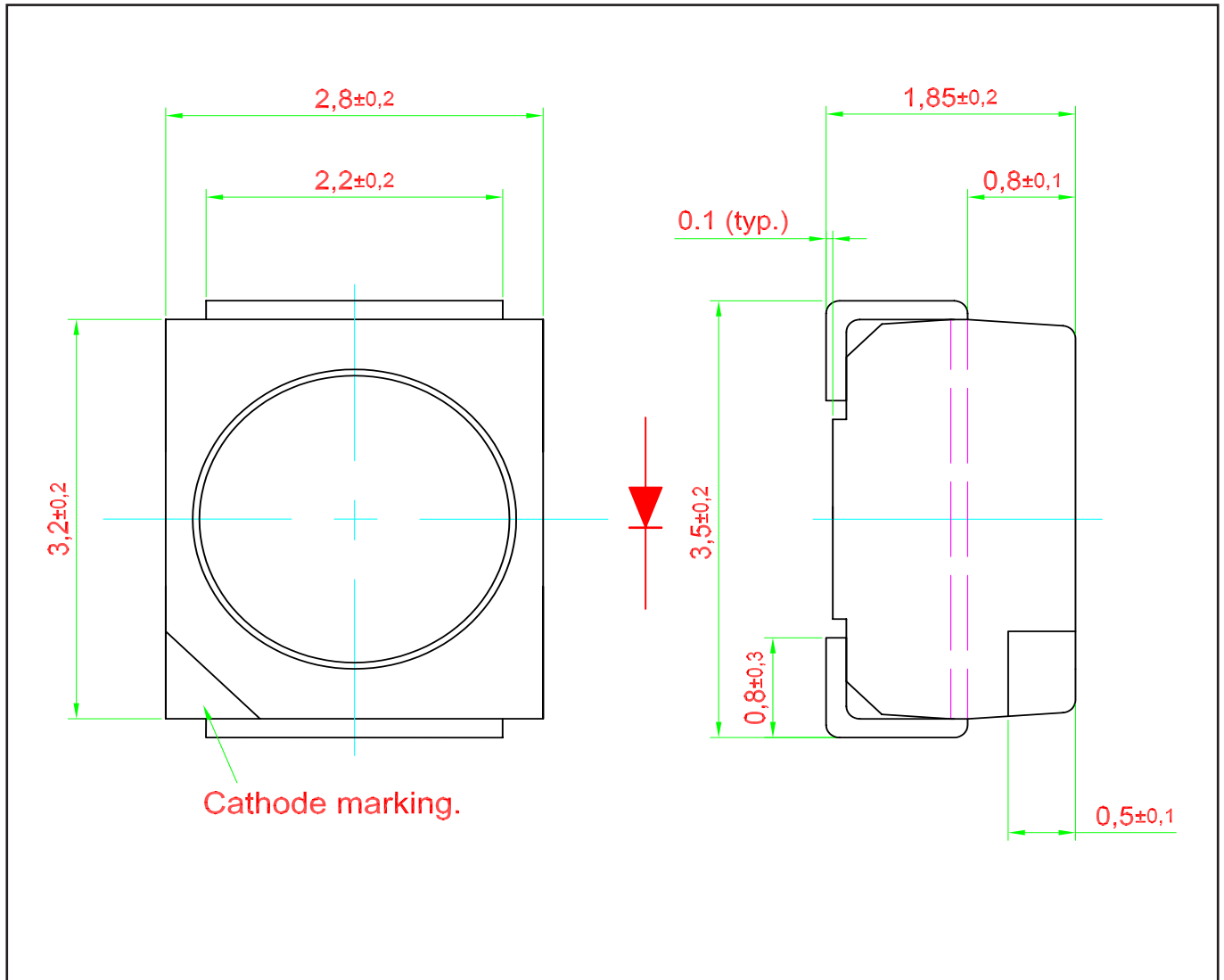
Allowable Forward Current Vs Duty Ratio (Ta=25 Deg C, tp≤10uS)



Radiation Pattern



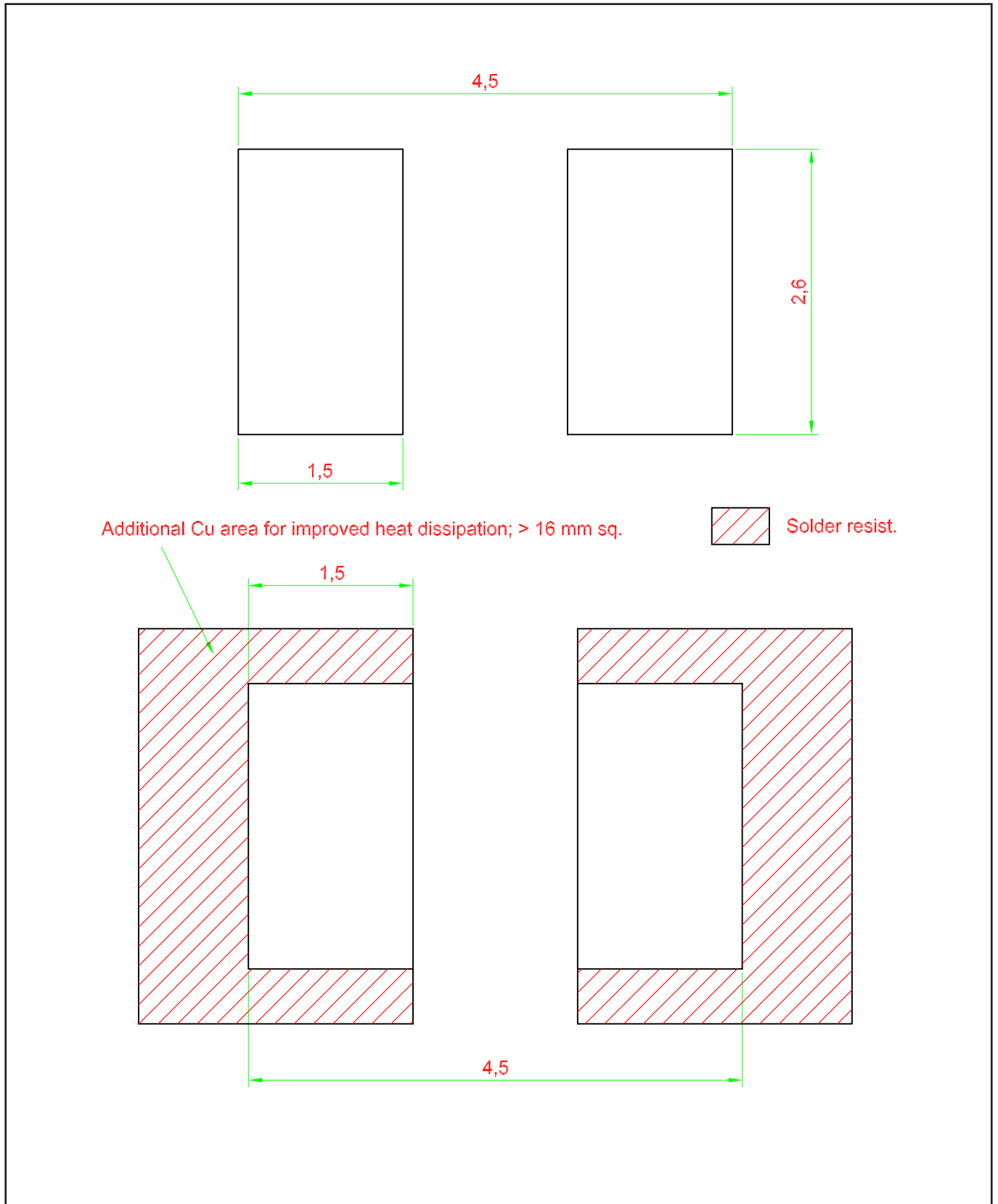
DomiLED™ • InGaN Warm White : DDF-WJG-2X4X-1 Package Outlines



Material

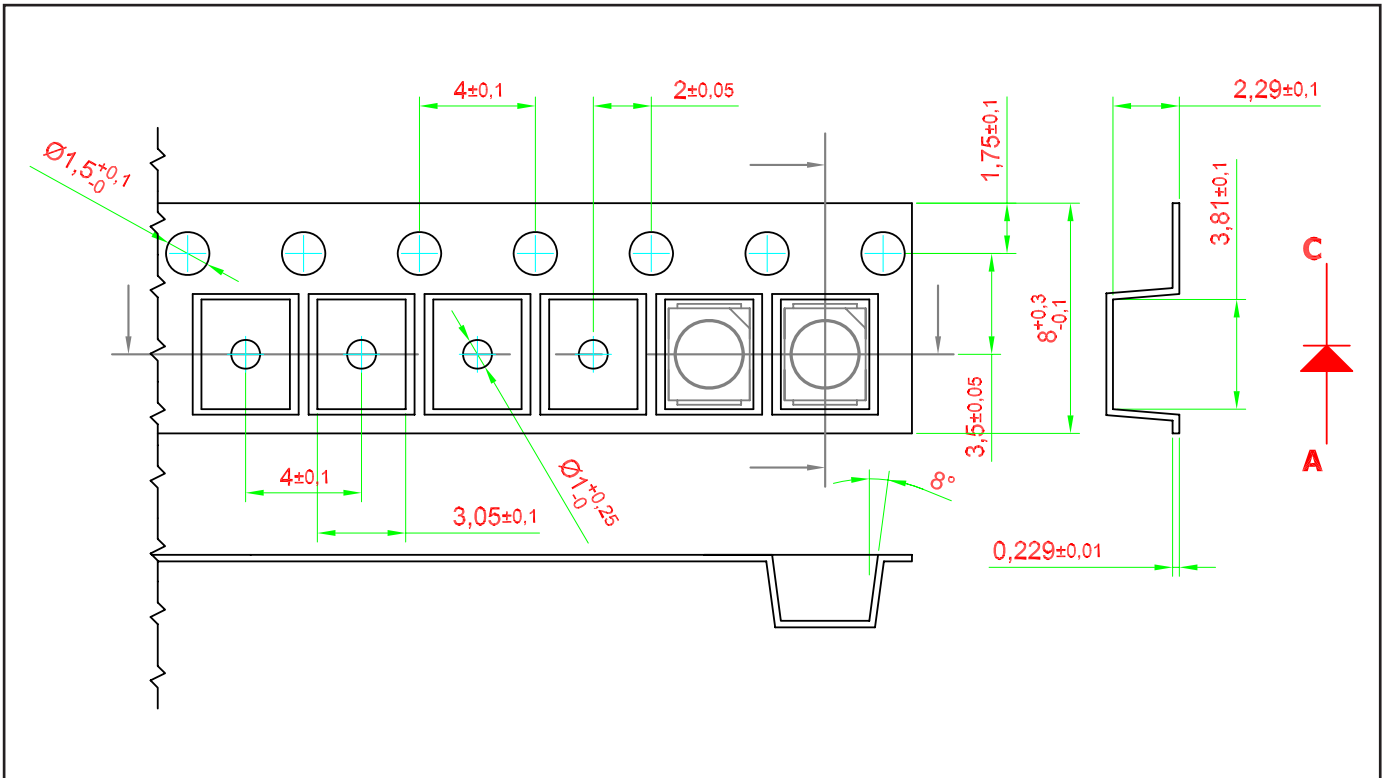
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Ag Plating

Recommended Solder Pad



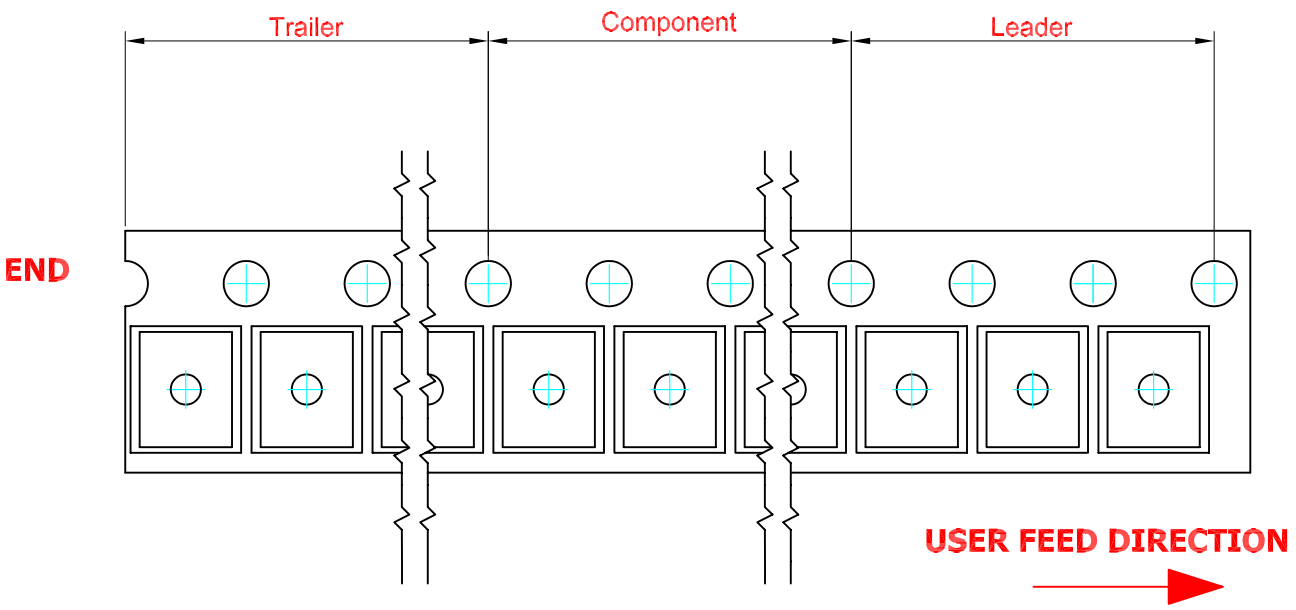
Taping and orientation

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

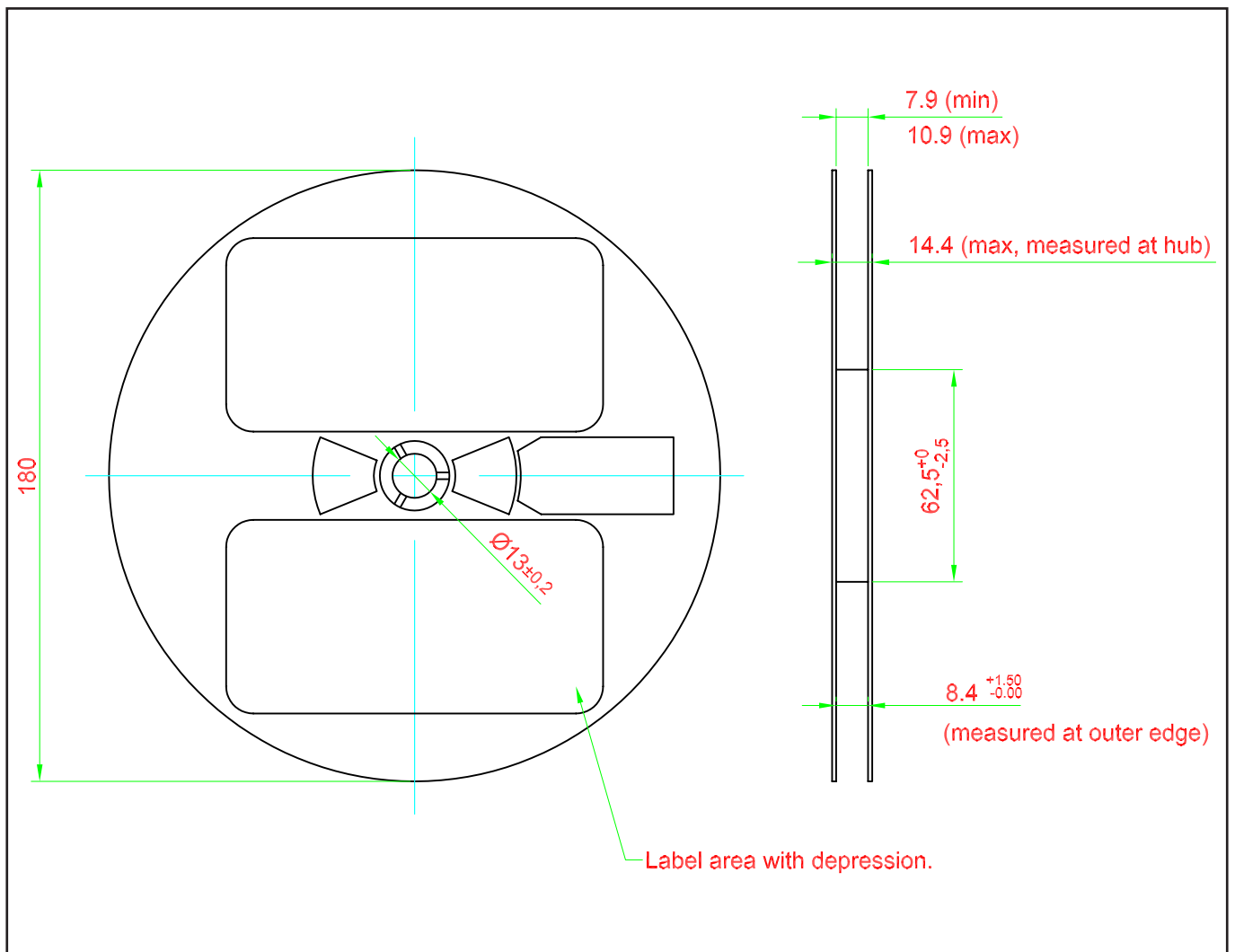


200 mm min. for Ø180 reel.
200 mm min. for Ø330 reel.

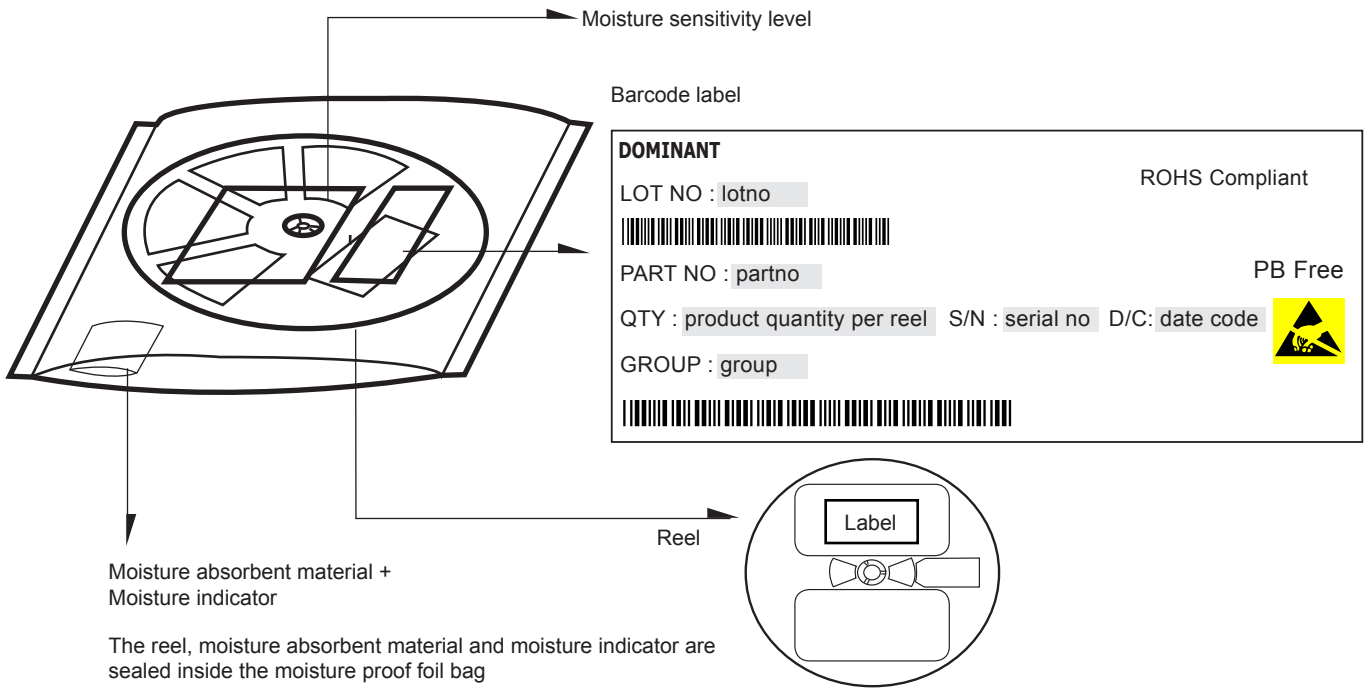
480 mm min. for Ø180 reel.
960 mm min. for Ø330 reel.



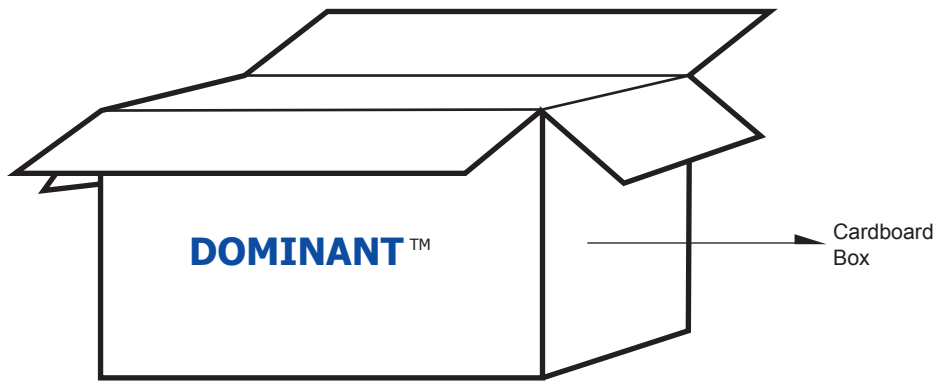
Packaging Specification



Packaging Specification



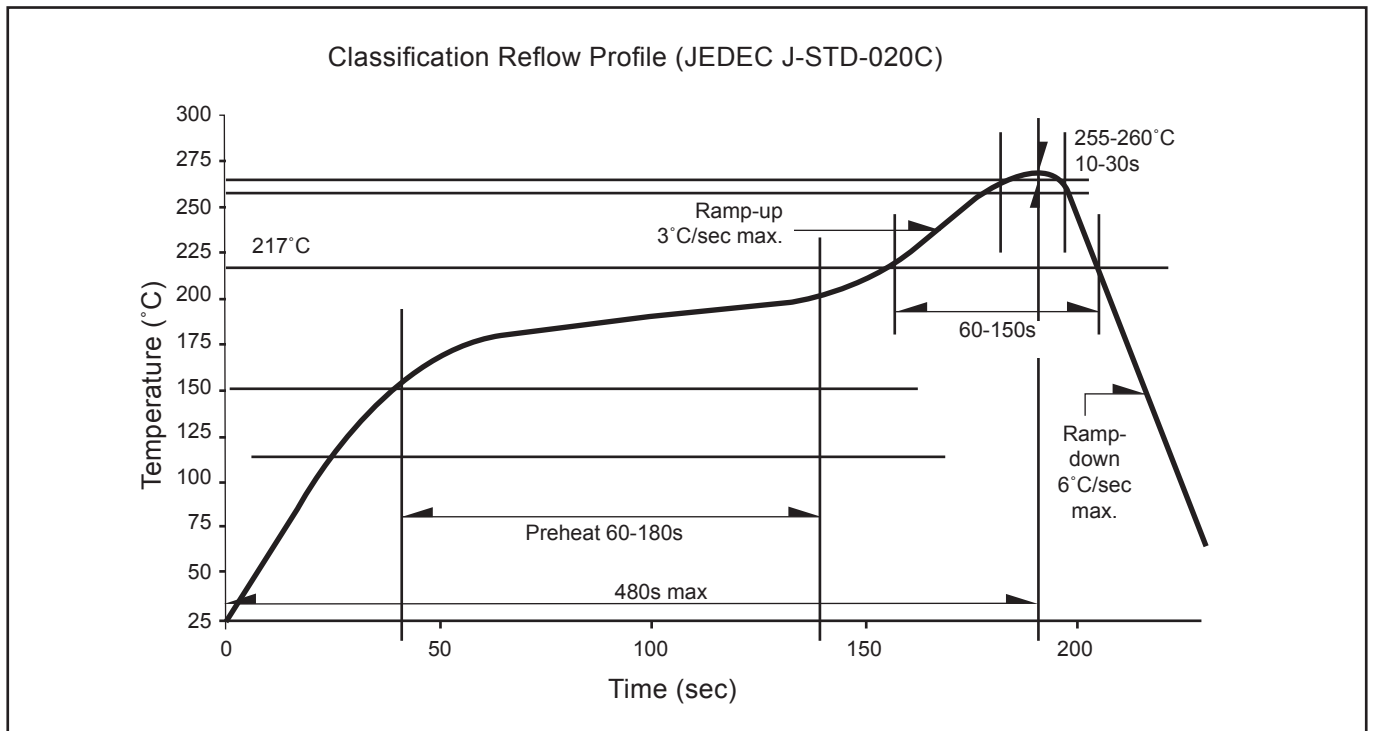
Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034
	190 ± 10



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 Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial release	12 Mar 2012
3	Add in Color Bin Structure	30 May 2012
3	Update Color Bin Structure	28 Aug 2012
2, 3, 7	Add Thermal Resistance Add Characteristics Add Graph: Chromaticity Coordinate Shift Add Graph: Allowable Forward Current Vs Duty Ratio	04 Aug 2014

NOTE

All the information contained in this document is considered to be reliable at the time of publishing. However, DOMINANT Opto Technologies does not assume any liability arising out of the application or use of any product described herein.

DOMINANT Opto Technologies reserves the right to make changes to any products in order to improve reliability, function or design.

DOMINANT Opto Technologies products are not authorized for use as critical components in life support devices or systems without the express written approval from the Managing Director of DOMINANT Opto Technologies.

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>.

Please contact us for more information:

DOMINANT Opto Technologies 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

