

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.
- > Based on InGaN technology.
- > 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.



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
DDW-HJG-XaXb-CS0390	White	120	2100.0	2300.0	2500.0

NOTE

1. Part number above comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of $\pm 11\%$.
3. Color binning is carried for all units as per the color binning table. Only one color group is allowed for each reel.
4. High color rendering index (CRI). Minimum CRI of 70.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 20 mA			Vr @ Ir = 10 μ A
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDW-HJG-XaXb-CS0390	2.90	3.30	3.80	5.0

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

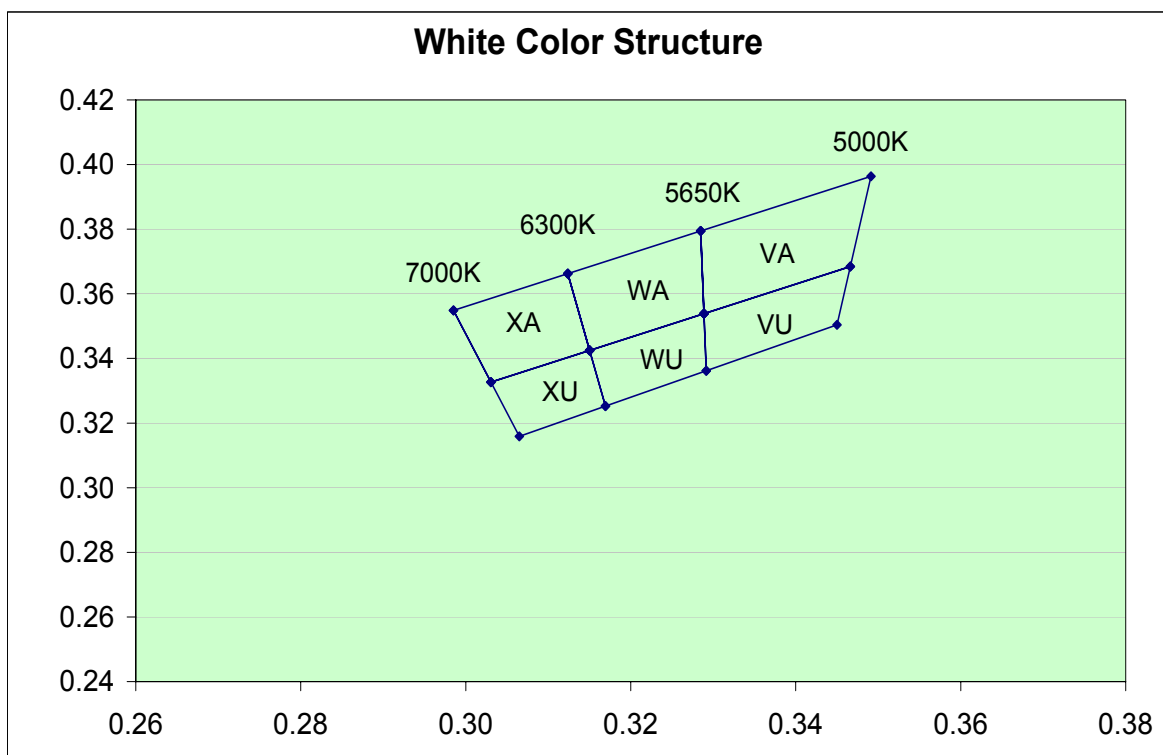
Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp $\leq$ 10 μ s, Duty cycle = 0.10)	100	mA
Reverse voltage; Ir max = 10 μ A	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)	85	mW
Thermal resistance		
- Junction / ambient, Rth JA	340	K/W
- Junction / solder point, Rth JS	180	K/W
(Mounting on FR4 PCB, pad size $\geq$ 16 mm ² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 85\text{ }^{\circ}\text{C}$	TC_V	DDW-HJG	-2.40	mV / K
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 85\text{ }^{\circ}\text{C}$	TC_{IV}	DDW-HJG	-4.80	mcd / K
Temperature coefficient of C_x (typ) $I_F = 20\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 85\text{ }^{\circ}\text{C}$	TC_{Cx}	DDW-HJG	-0.0002	
Temperature coefficient of C_y (typ) $I_F = 20\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 85\text{ }^{\circ}\text{C}$	TC_{Cy}	DDW-HJG	-0.0001	

DDW, White Color Grouping



Bin		1	2	3	4
XA	Cx	0.2985	0.3031	0.3150	0.3124
	Cy	0.3549	0.3327	0.3425	0.3662
XU	Cx	0.3031	0.3065	0.3169	0.3150
	Cy	0.3327	0.3159	0.3252	0.3425
WA	Cx	0.3124	0.3150	0.3289	0.3285
	Cy	0.3662	0.3425	0.3539	0.3795
WU	Cx	0.3150	0.3169	0.3292	0.3289
	Cy	0.3425	0.3252	0.3362	0.3539
VA	Cx	0.3285	0.3289	0.3466	0.3491
	Cy	0.3795	0.3539	0.3684	0.3964
VU	Cx	0.3289	0.3292	0.3450	0.3466
	Cy	0.3539	0.3362	0.3504	0.3684

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity @ IV (mcd)
Xa	2100.0...2300.0
Xb	2300.0...2500.0

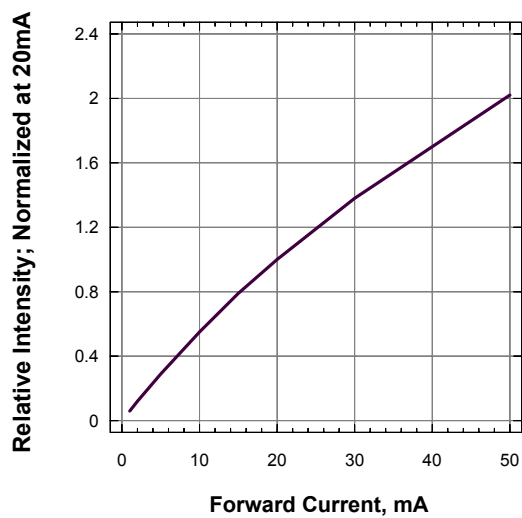
Luminous intensity is measured with an accuracy of $\pm 11\%$.

Vf Binning

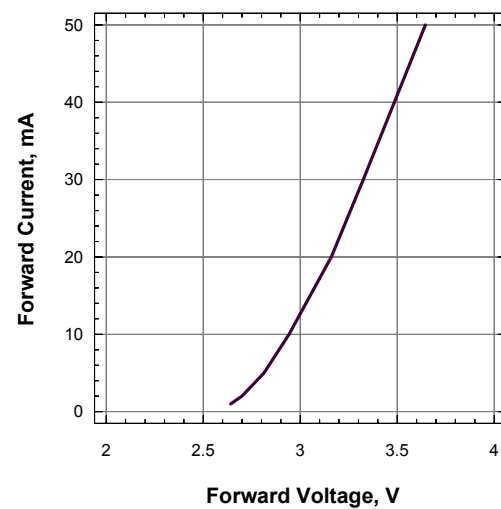
Vf Bin	Forward Voltage (V)
V1	2.90 ... 3.00
V2	3.00 ... 3.10
V3	3.10 ... 3.20
V4	3.20 ... 3.30
V5	3.30 ... 3.40
V6	3.40 ... 3.50
V7	3.50 ... 3.60
V8	3.60 ... 3.70
V9	3.70 ... 3.80

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

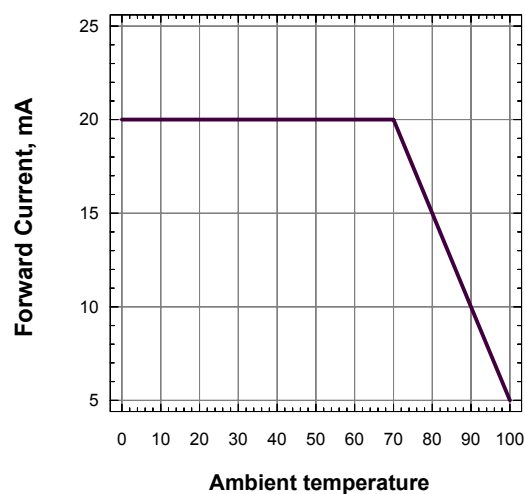
Relative Luminous Intensity Vs Forward Current



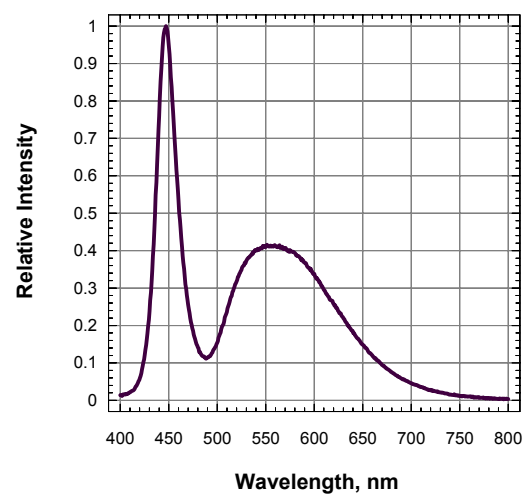
Forward Current Vs Forward Voltage



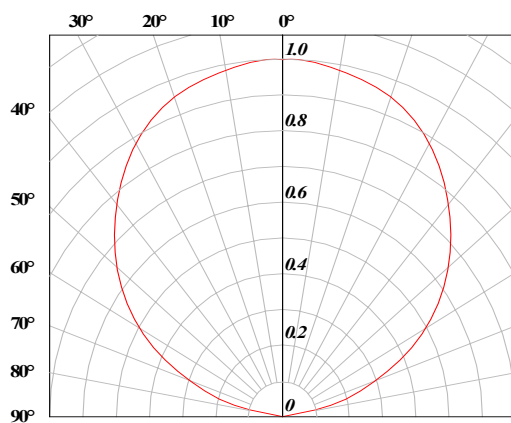
Maximum Current Vs Ambient Temperature



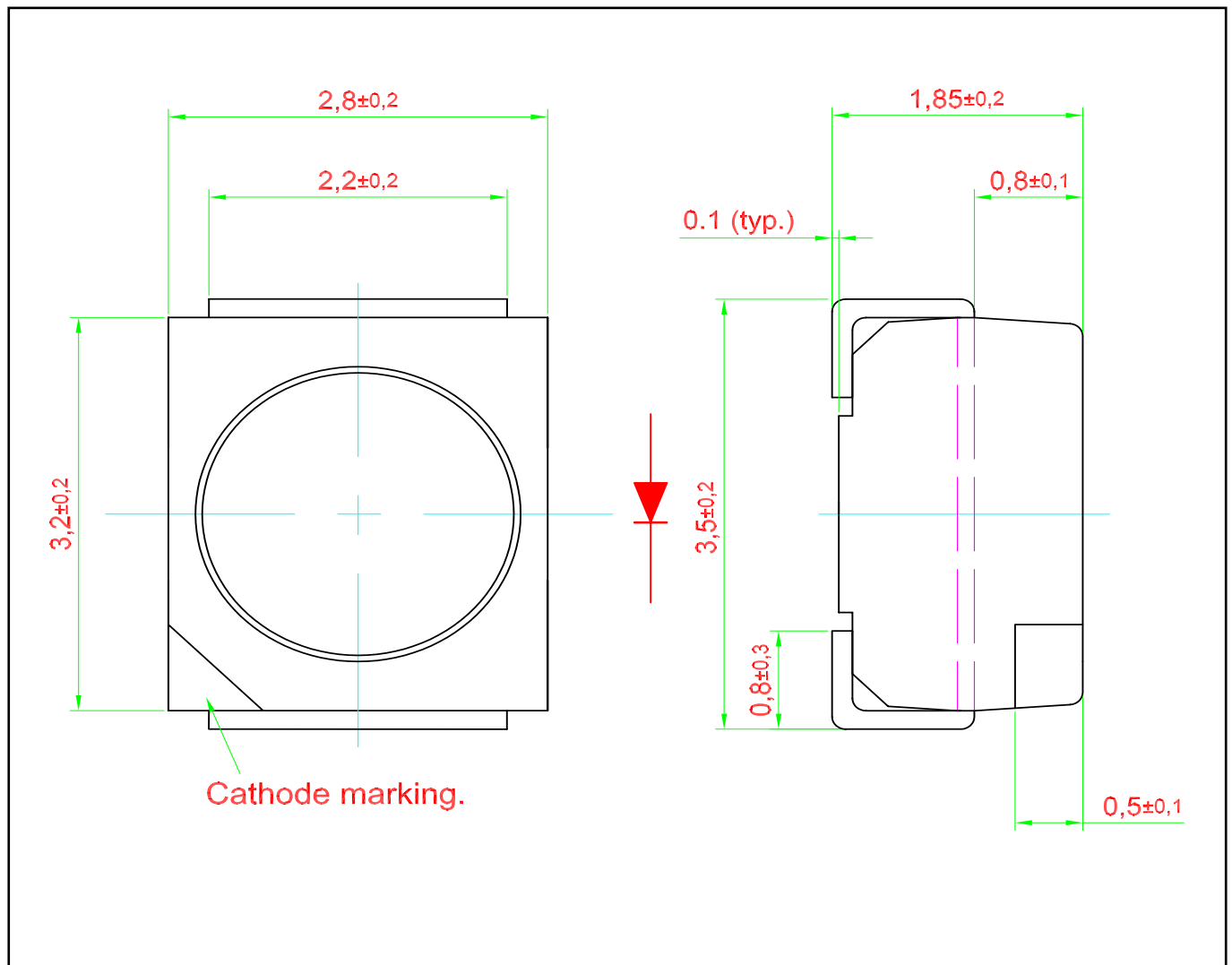
Relative Intensity Vs. Wavelength



Radiation Pattern



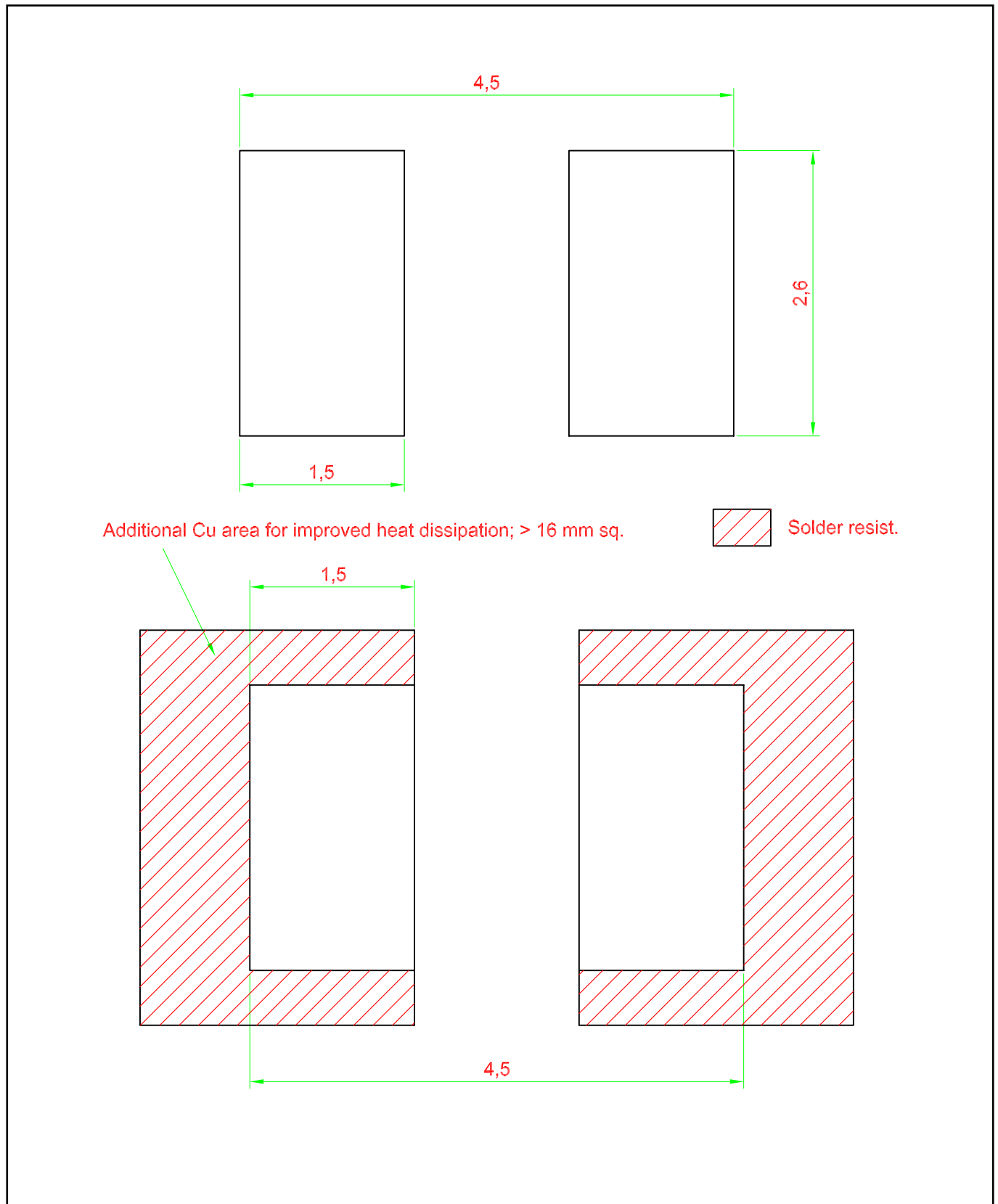
DomiLED™ • InGaN White : DDW-HJG-XaXb-CS0390 Package Outlines



Material

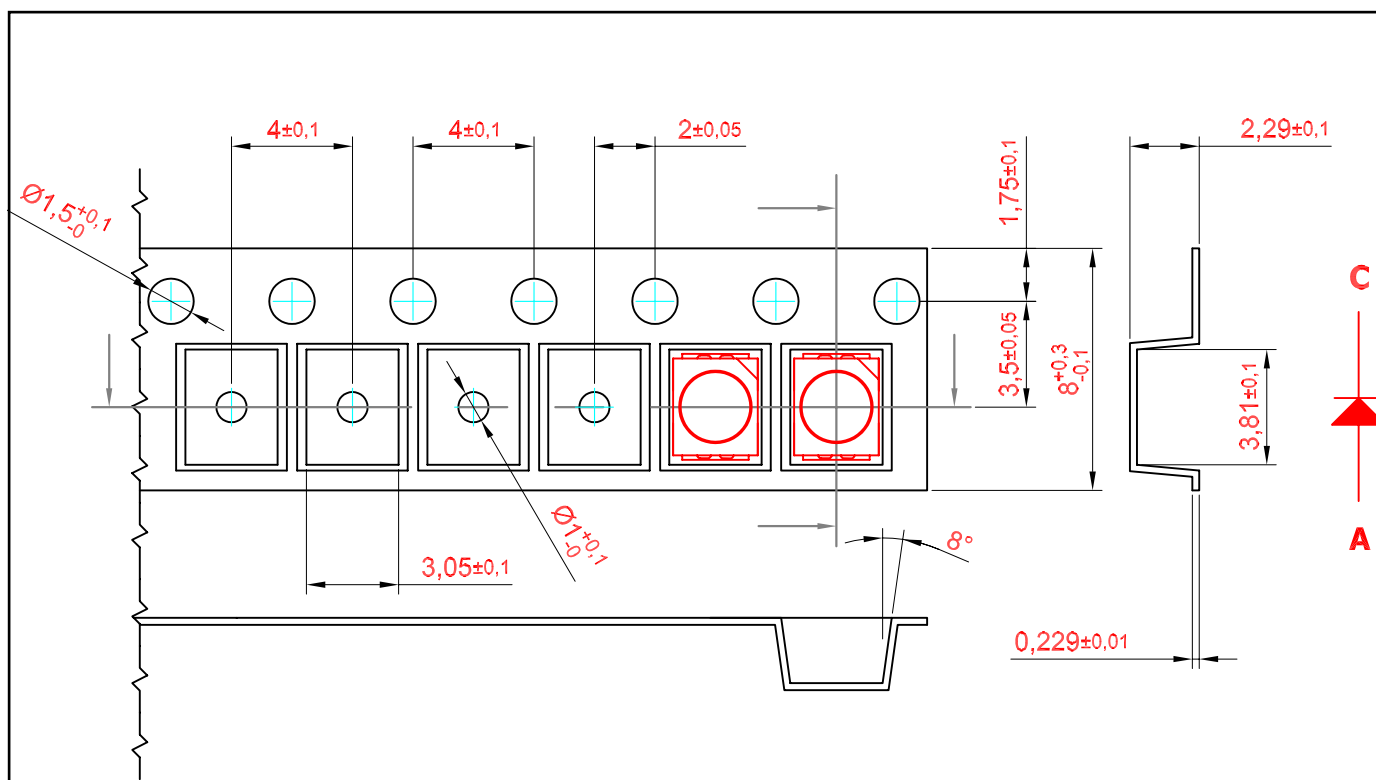
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad



Taping and orientation

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

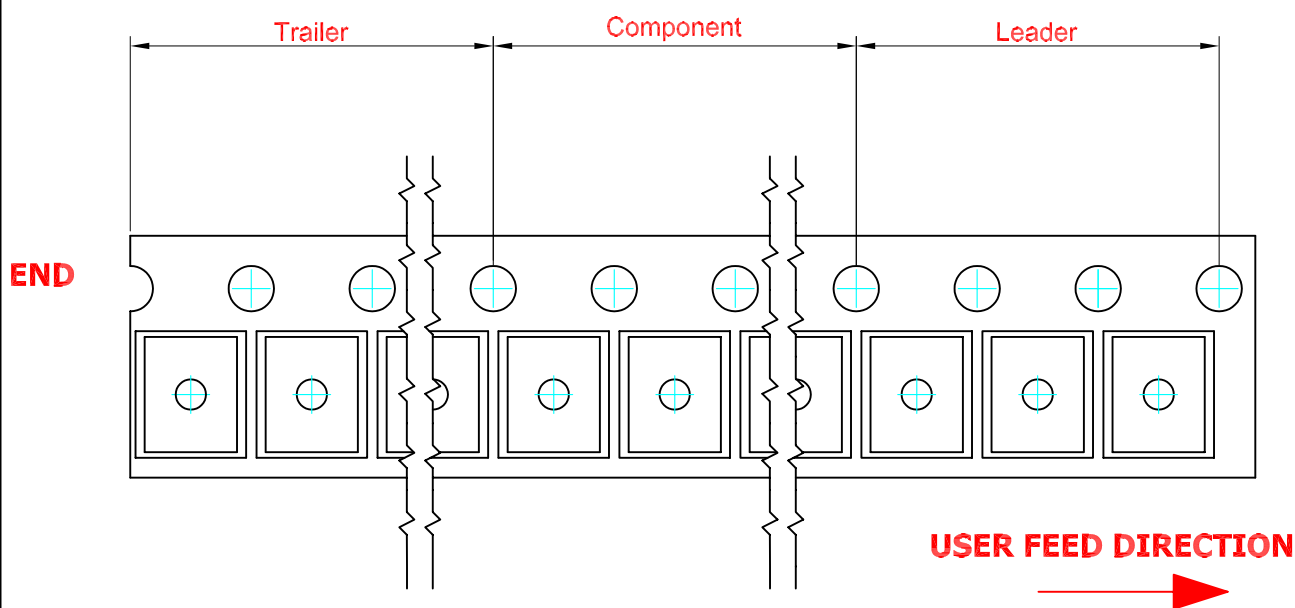


200 mm min. for $\varnothing 180$ reel.

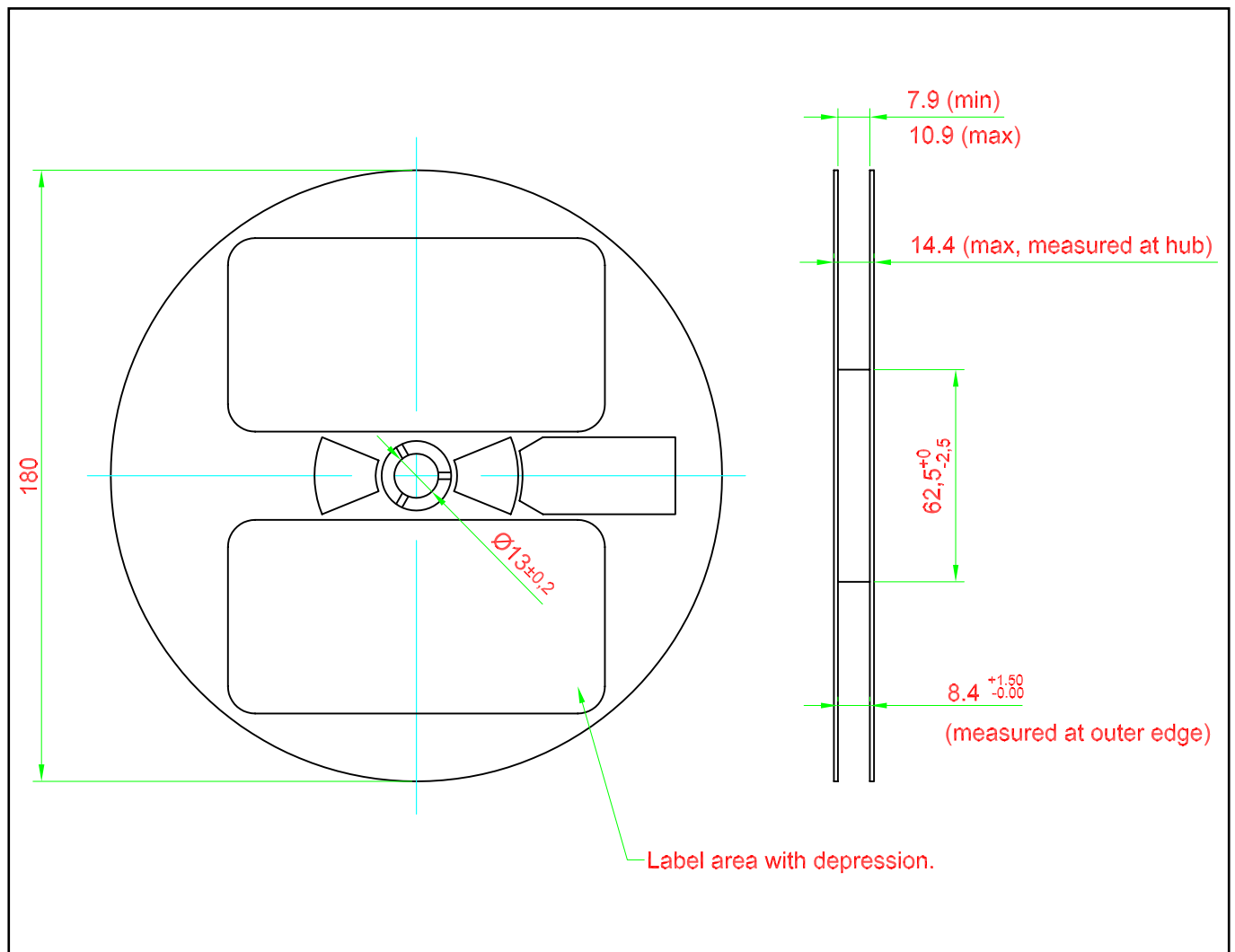
480 mm min. for $\varnothing 180$ reel.

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

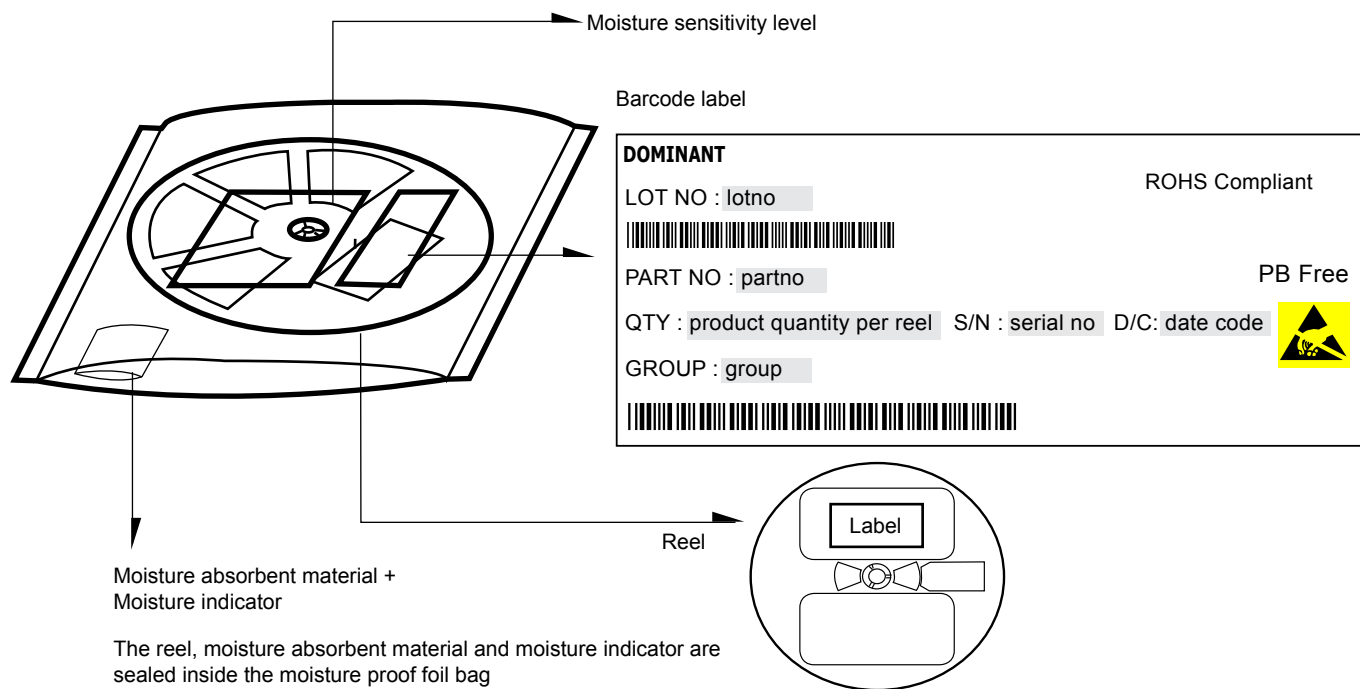
960 mm min. for $\varnothing 330$ reel.



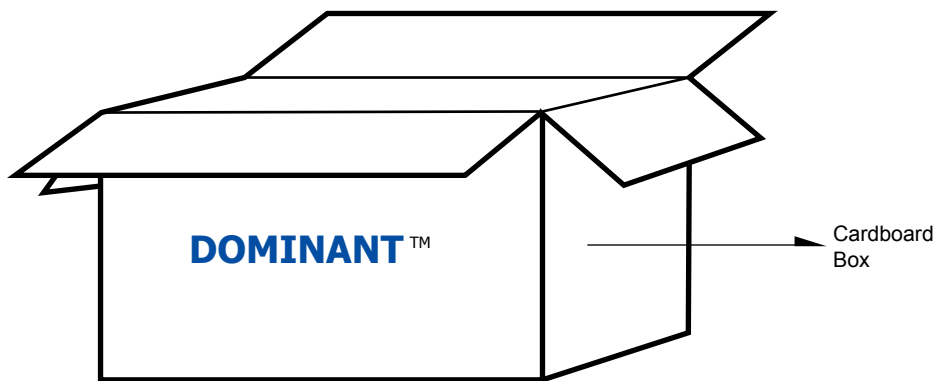
Packaging Specification



Packaging Specification



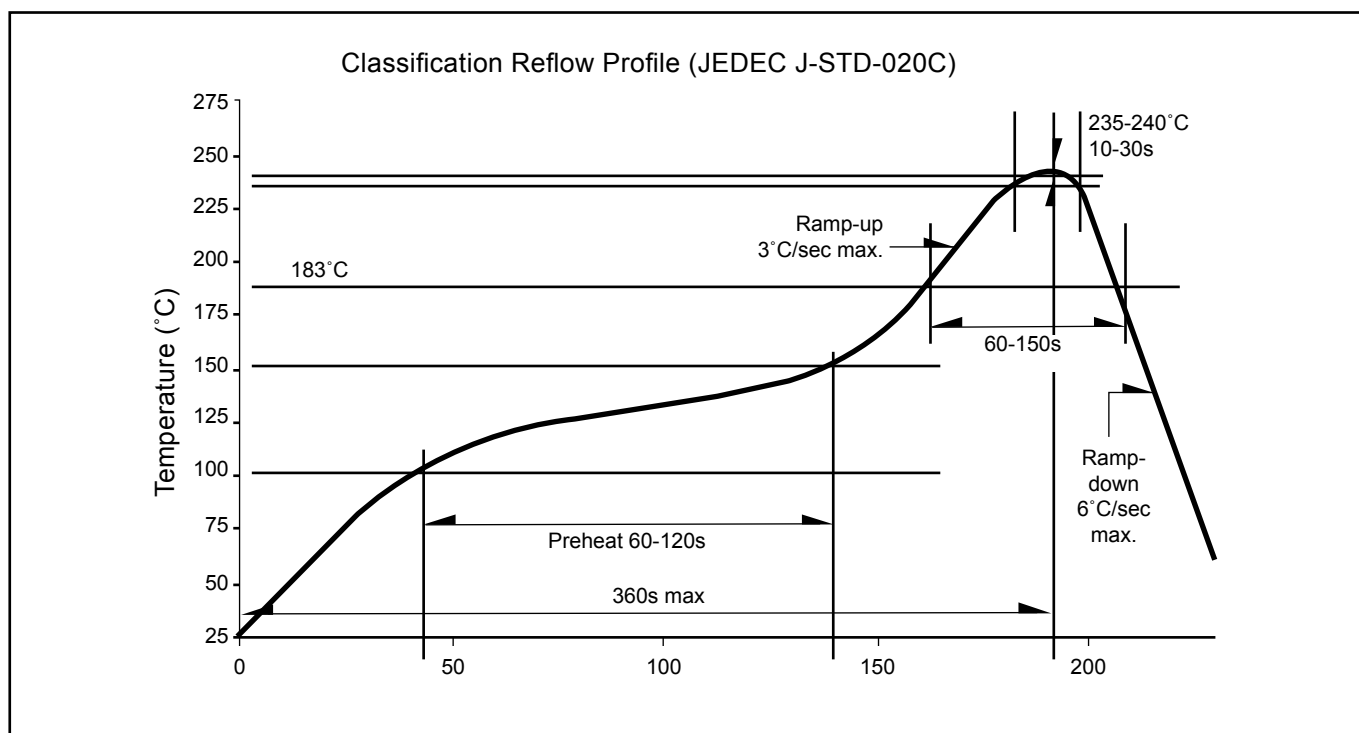
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



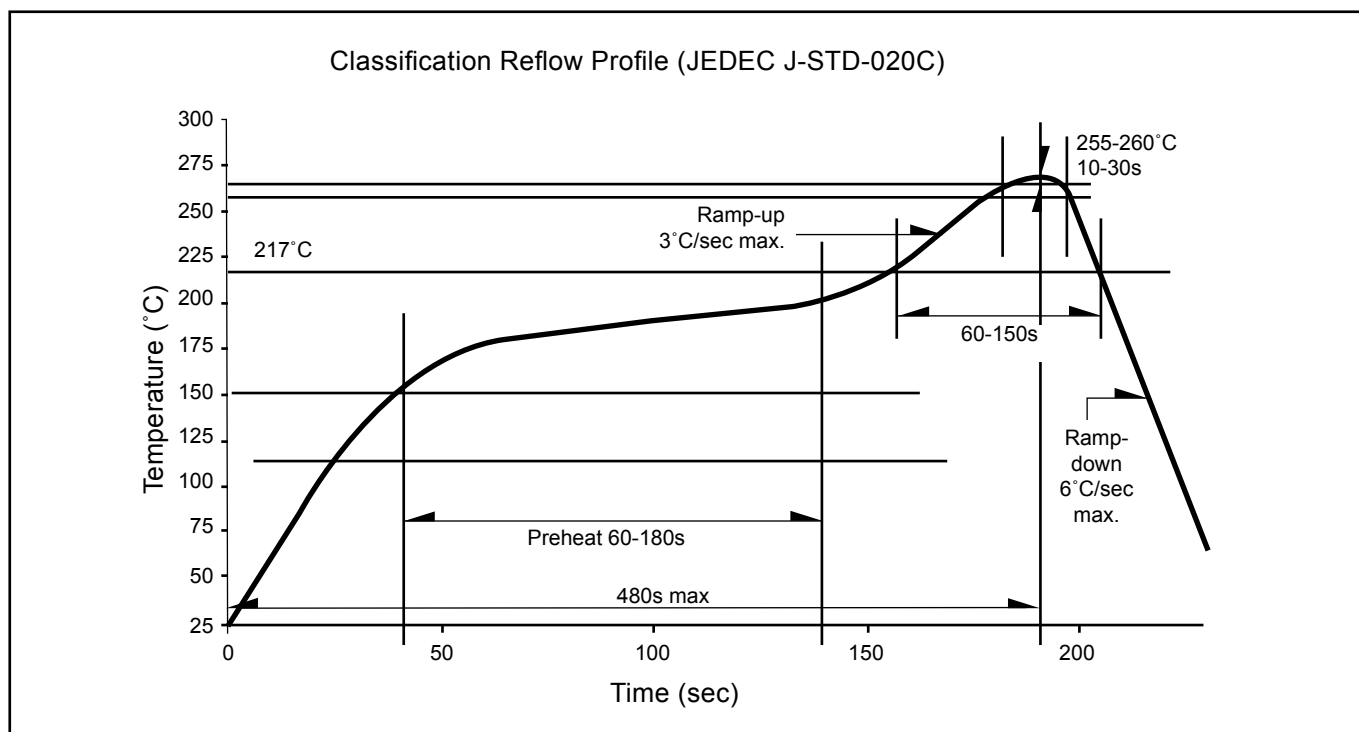
For DomiLED™

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 Sn-Pb IR-Reflow Soldering Profile



Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial release	01 Sep 2010

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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