

### Domiled™

With the intense colors that seem to glow with energy and its significant brightness, Domiled™ 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.



### Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Communication: mobile phone flash light, backlights in mobile phone display.
- > Display: full color display video notice board.
- > Industry: general lighting



### Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
● DDW-HJG-VW1-1	White	120	715.0	1125.0	1400.0
● DDW-HJG-W2X1-1	White	120	1400.0	1800.0	2240.0
DDW-HJG-X1X2-1	White	120	1800.0	2240.0	2850.0

● Not for new design

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

### Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 20 mA			Vr @ Ir = 10 µA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDW-HJG	2.9	3.3	3.8	5.0

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

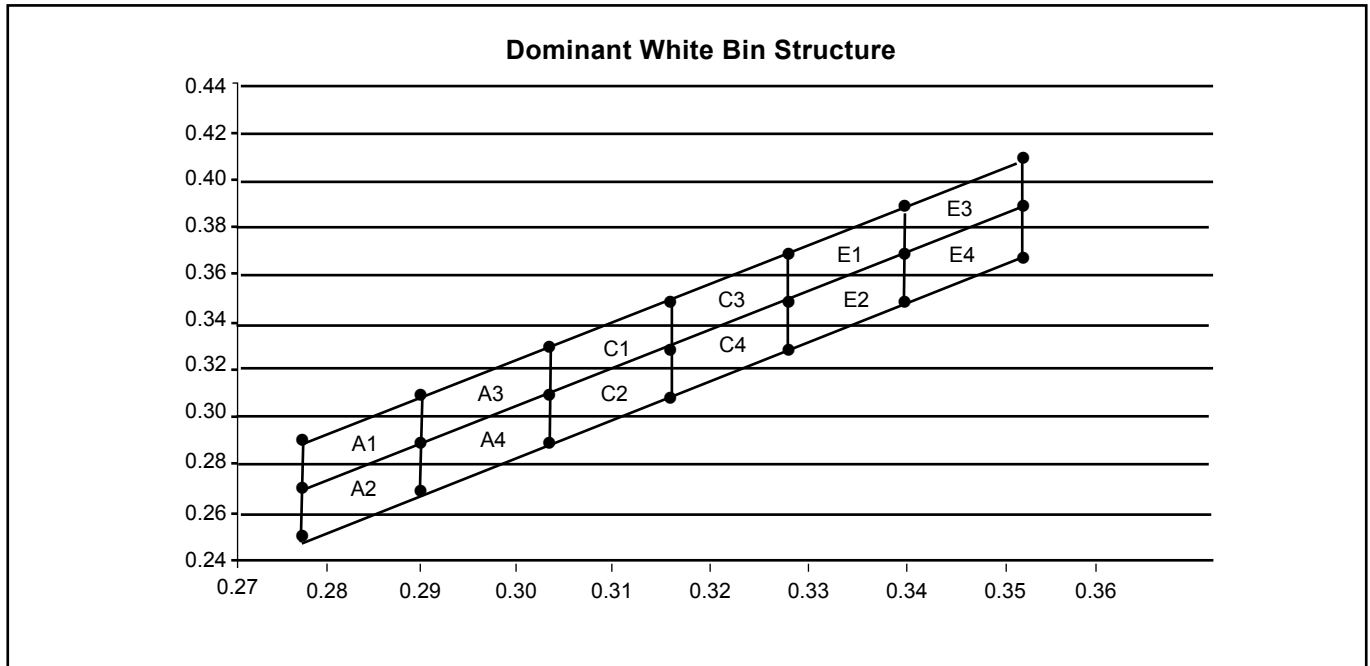
### Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.10)	100	mA
Reverse Voltage; Ir max = 10µA	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 ≥ 16 mm <sup>2</sup> 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) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	$TC_{I_V}$	DDW-HJG	-4.80	mcd / K
Temperature coefficient of $C_x$ (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	$TC_{C_x}$	DDW-HJG	-0.0002	
Temperature coefficient of $C_y$ (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	$TC_{C_y}$	DDW-HJG	-0.0001	

**DDW, White Color Grouping**



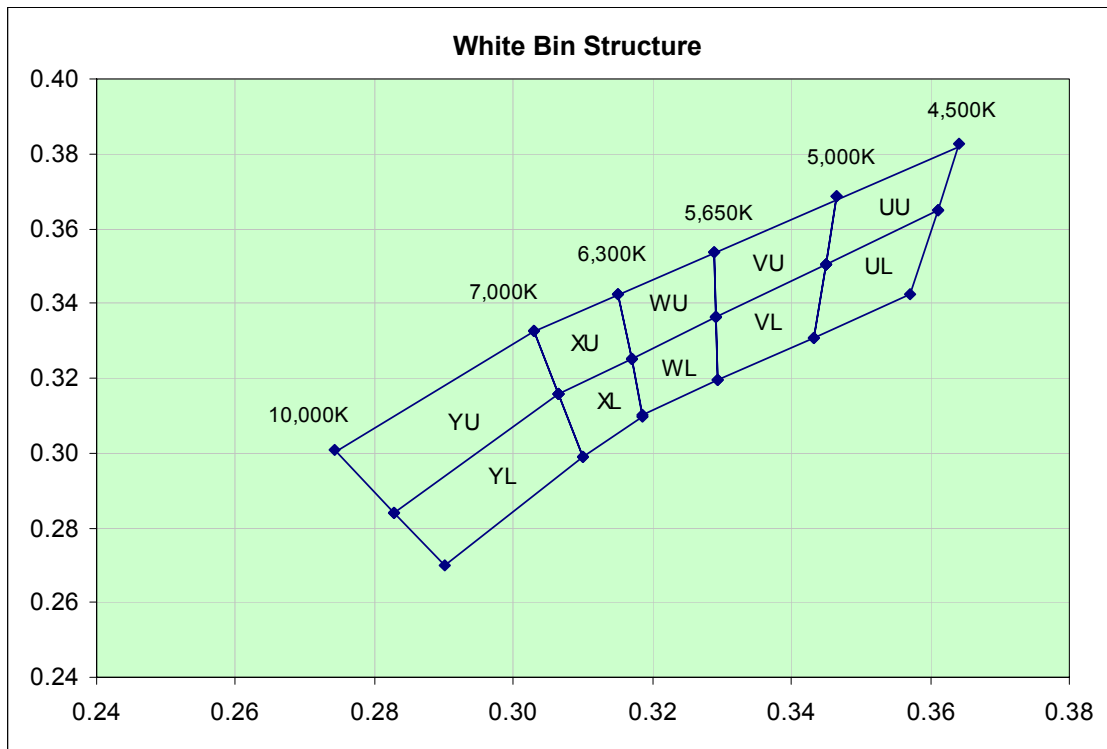
Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

Bin					
A1	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2732	0.2939	0.3114	0.2907
A2	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2557	0.2764	0.2939	0.2732
A3	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2939	0.3146	0.3321	0.3114
A4	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2764	0.2971	0.3146	0.2939
C1	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.3146	0.3354	0.3529	0.3321
C2	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.2971	0.3179	0.3354	0.3146
C3	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3354	0.3561	0.3736	0.3529
C4	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3179	0.3386	0.3561	0.3354

Bin					
E1	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3561	0.3768	0.3943	0.3736
E2	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3386	0.3593	0.3768	0.3561
E3	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3768	0.3975	0.4150	0.3943
E4	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3593	0.3800	0.3975	0.3768

Dominant color coordinate is measured with an accuracy of  $\pm 0.01$ .

**DDW, White Color Grouping**



Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

Bin		1	2	3	4
YU	Cx	0.274	0.283	0.307	0.303
	Cy	0.301	0.284	0.316	0.333
YL	Cx	0.283	0.290	0.310	0.307
	Cy	0.284	0.270	0.299	0.316
XU	Cx	0.303	0.307	0.317	0.315
	Cy	0.333	0.316	0.325	0.343
XL	Cx	0.307	0.310	0.319	0.317
	Cy	0.316	0.299	0.310	0.325
WU	Cx	0.315	0.317	0.329	0.329
	Cy	0.343	0.325	0.336	0.354
WL	Cx	0.317	0.319	0.329	0.329
	Cy	0.325	0.310	0.319	0.336
VU	Cx	0.329	0.329	0.345	0.347
	Cy	0.354	0.336	0.350	0.368
VL	Cx	0.329	0.329	0.343	0.345
	Cy	0.336	0.319	0.331	0.350
UU	Cx	0.347	0.345	0.361	0.364
	Cy	0.368	0.350	0.365	0.383
UL	Cx	0.345	0.343	0.357	0.361
	Cy	0.350	0.331	0.343	0.365

Dominant color coordinate is measured with an accuracy of  $\pm 0.01$ .

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

Brightness Group	Luminous Intensity @ IV (mcd)
V1	715.0...900.0
V2	900.0...1125.0
W1	1125.0... 1400.0
W2	1400.0... 1800.0
X1	1800.0...2240.0
X2	2240.0....2850.0

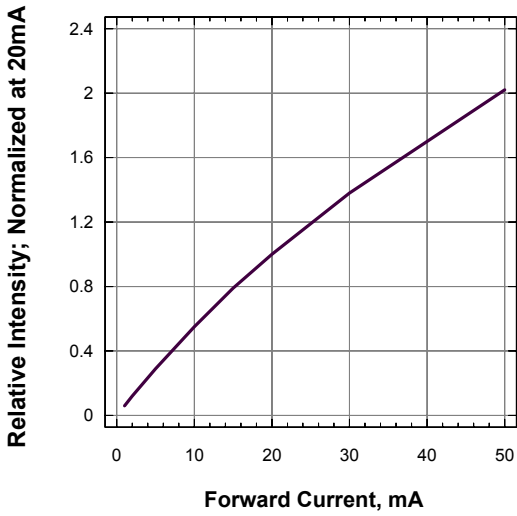
Luminous intensity is measured with an accuracy of ± 11%.

**Vf Binning (Optional)**

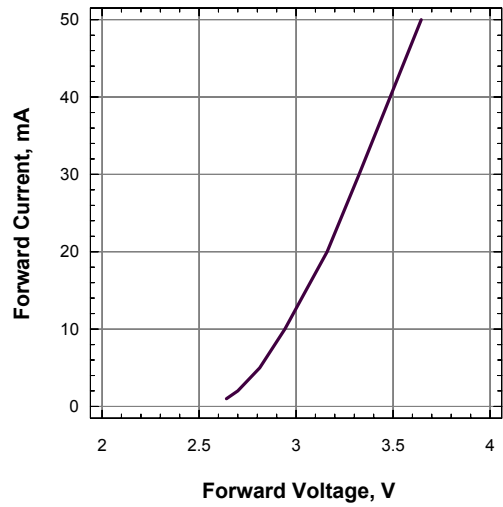
Vf Bin @ 20mA	Forward Voltage (V)
0A	2.75 ... 3.05
00	3.05 ... 3.35
01	3.35 ... 3.65
02	3.65 ... 3.95

Forward voltage, Vf is measured with an accuracy of ± 0.1 V.  
Please consult sales and marketing for special part number to incorporate Vf binning.

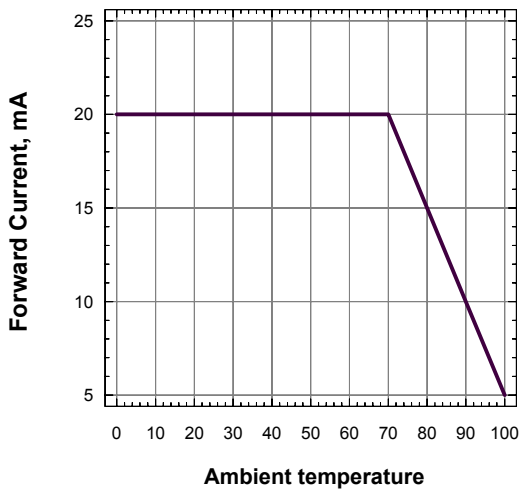
**Relative Luminous Intensity Vs Forward Current**



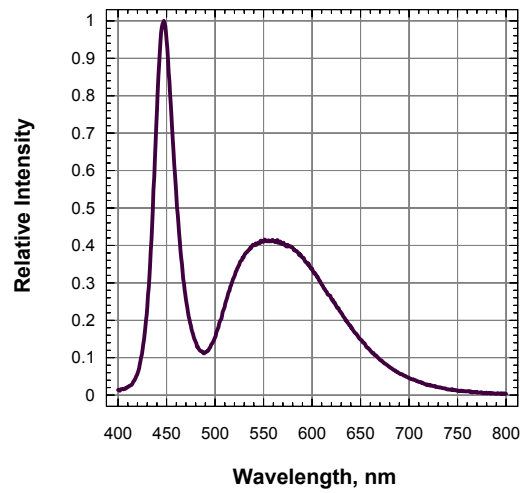
**Forward Current Vs Forward Voltage**



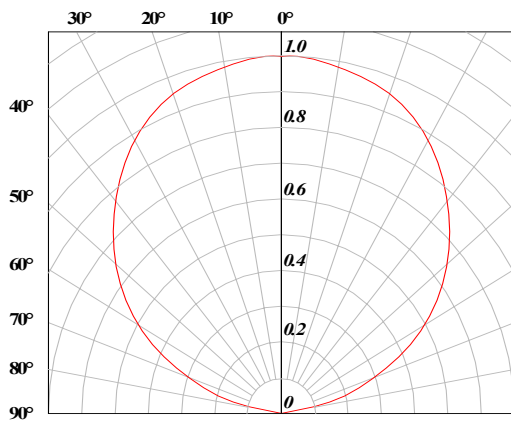
**Maximum Current Vs Ambient Temperature**



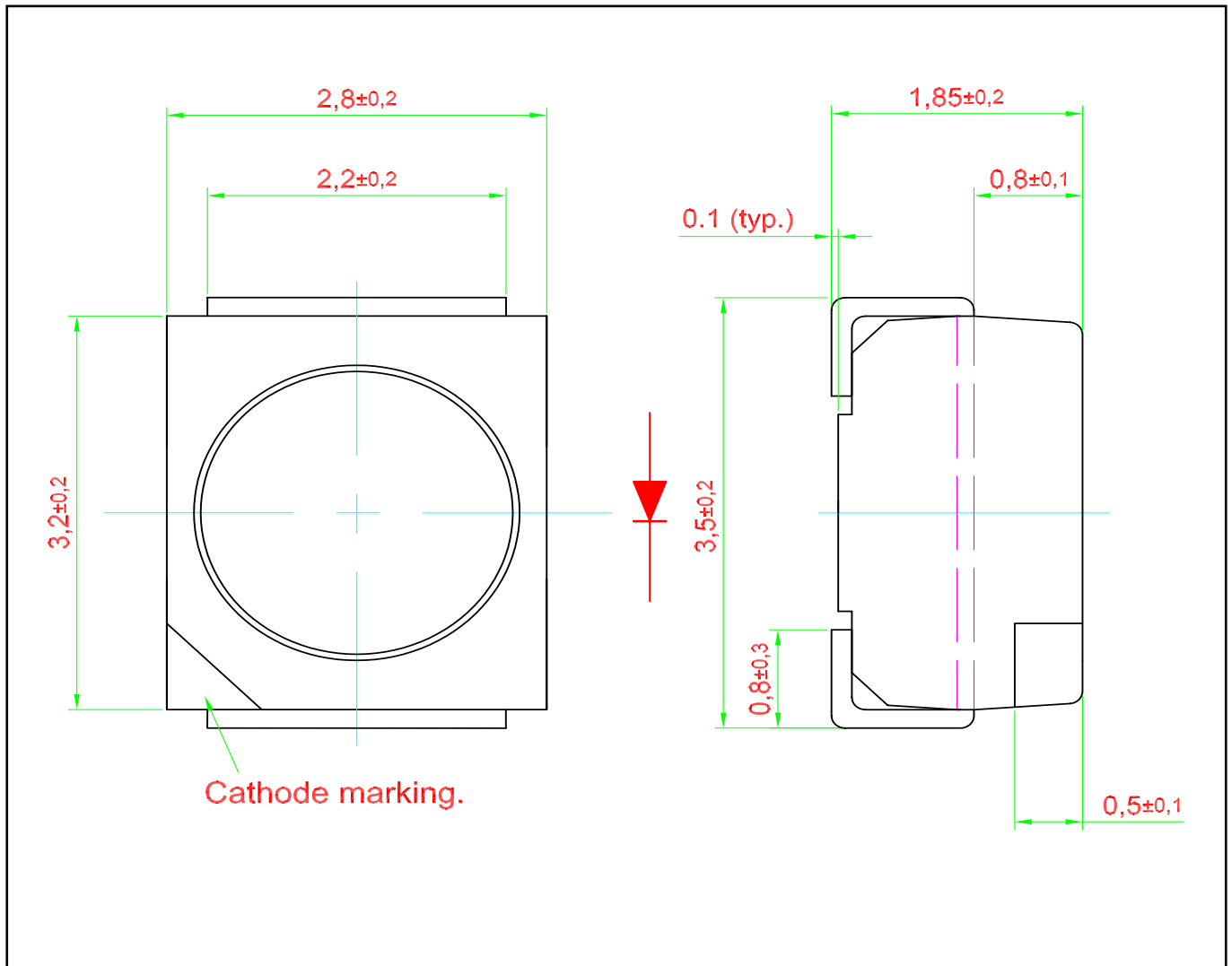
**Relative Intensity Vs. Wavelength**



**Radiation Pattern**



**DomiLED™ • InGaN White : DDW-HJG Package Outlines**

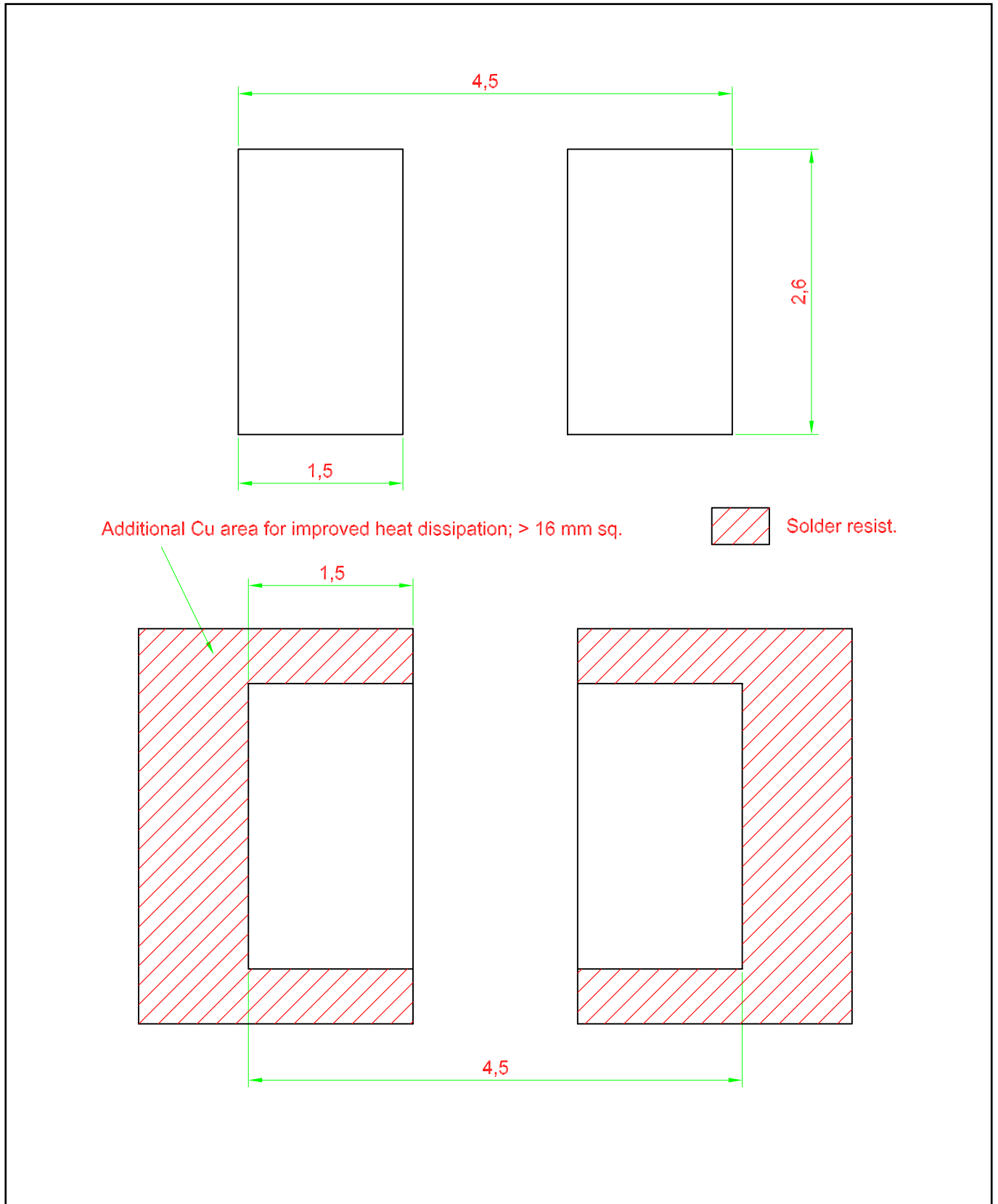


**Material**

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

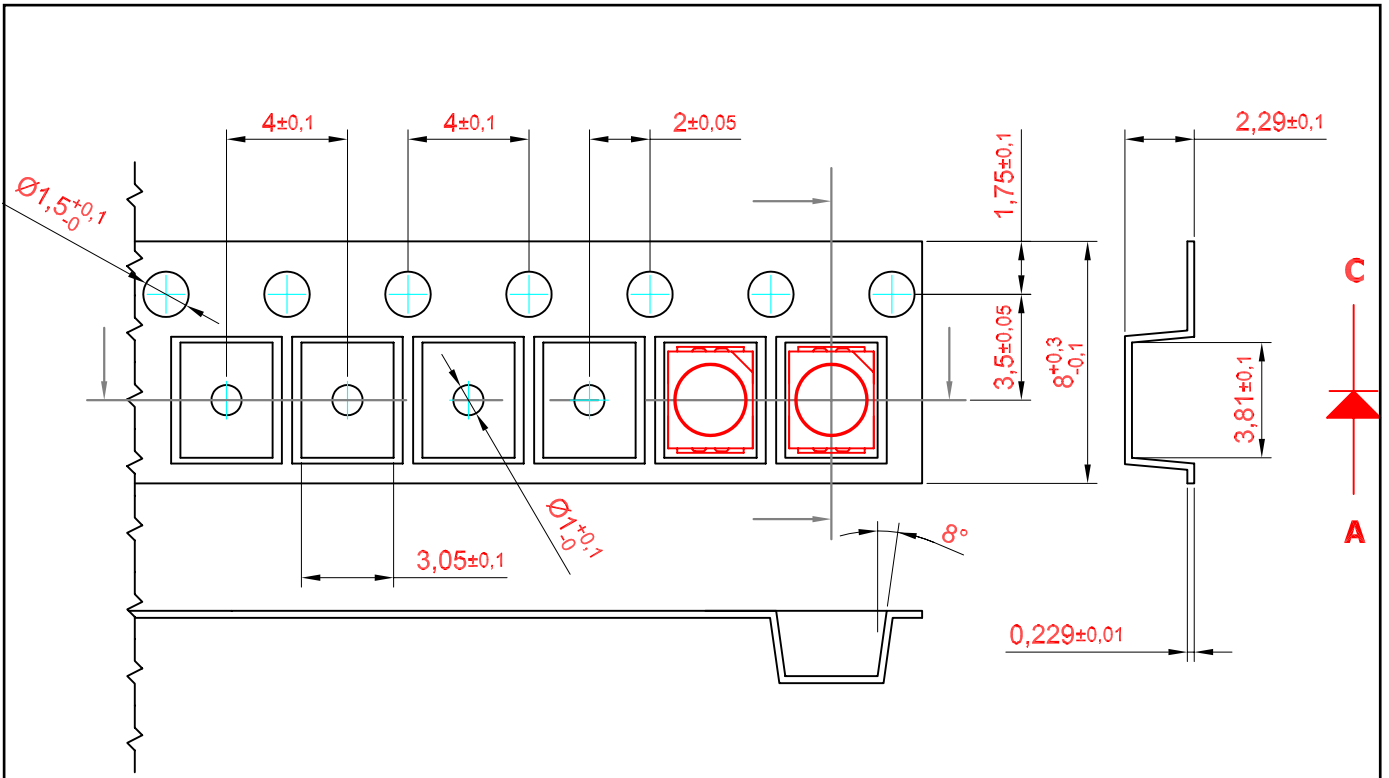


**Recommended Solder Pad**



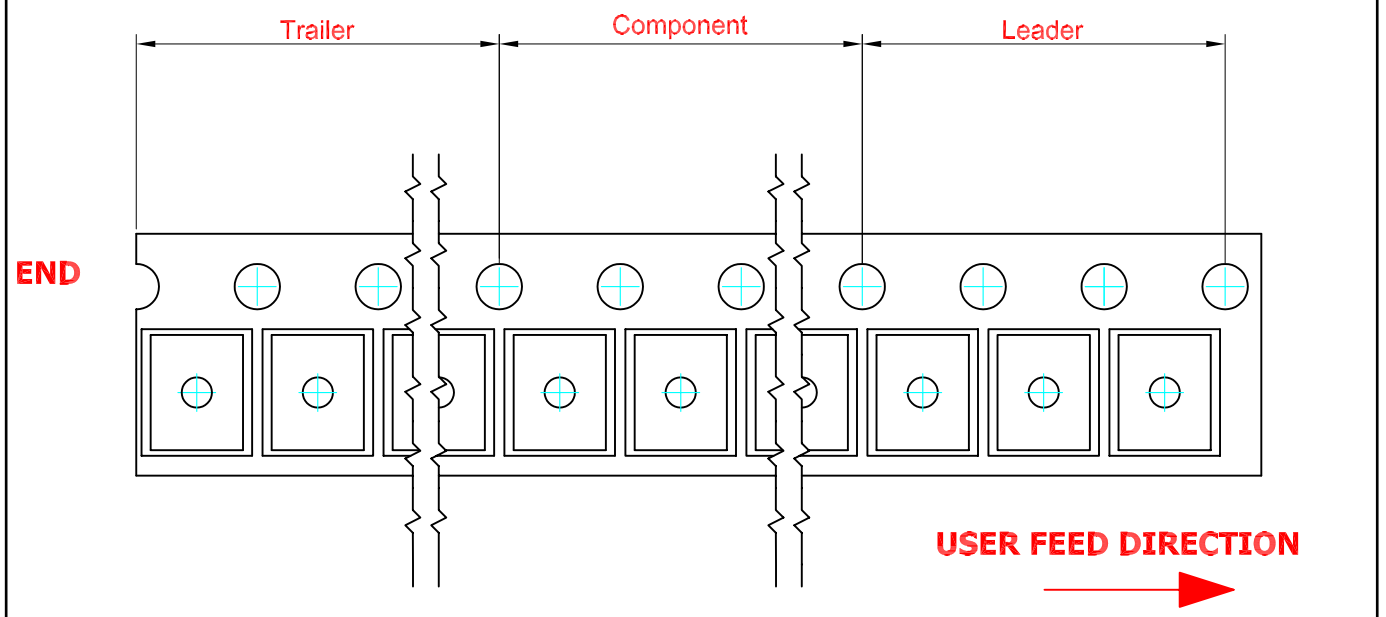
**Taping and orientation**

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

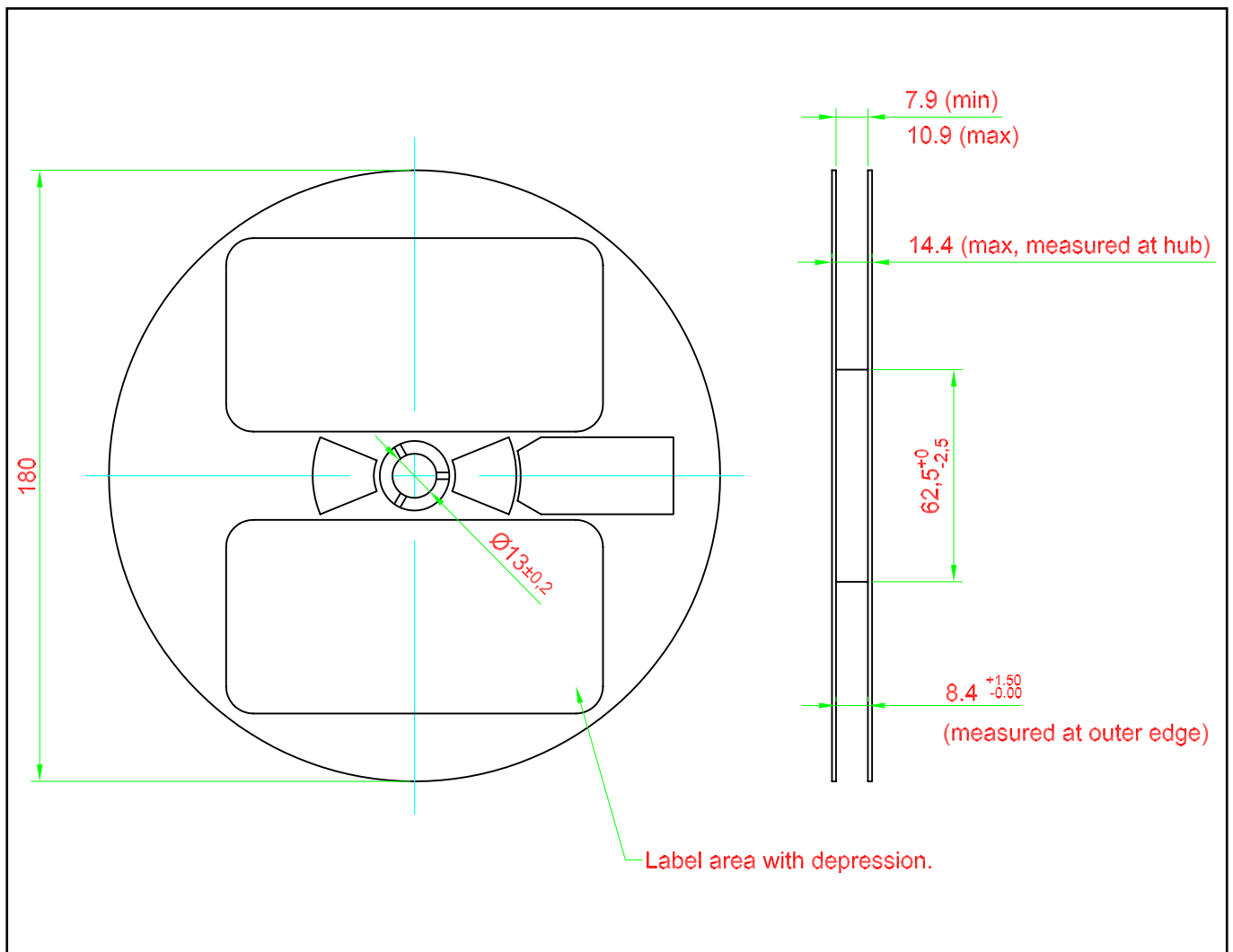


200 mm min. for  $\varnothing 180$  reel.  
 200 mm min. for  $\varnothing 330$  reel.

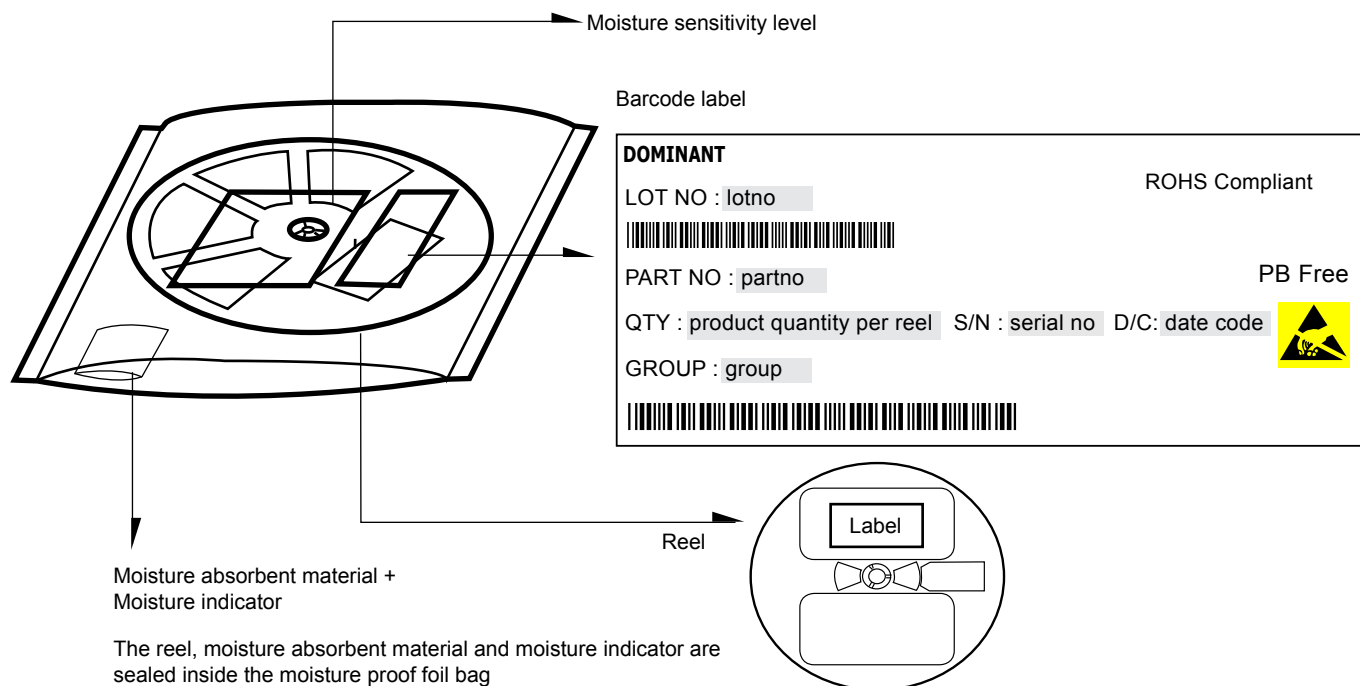
480 mm min. for  $\varnothing 180$  reel.  
 960 mm min. for  $\varnothing 330$  reel.



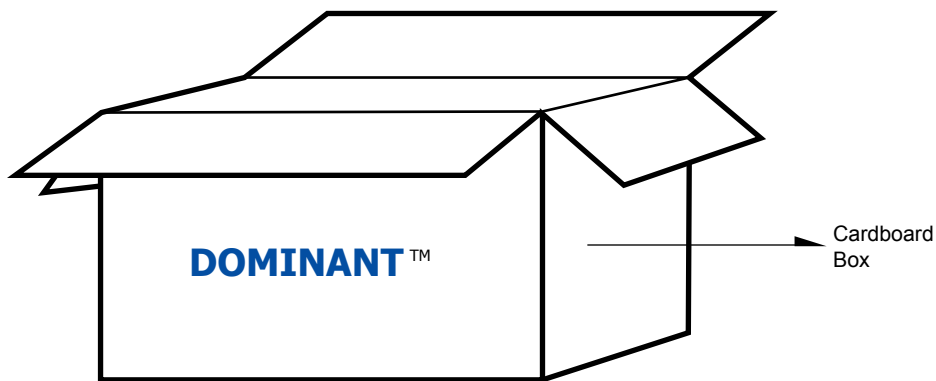
### Packaging Specification



**Packaging Specification**



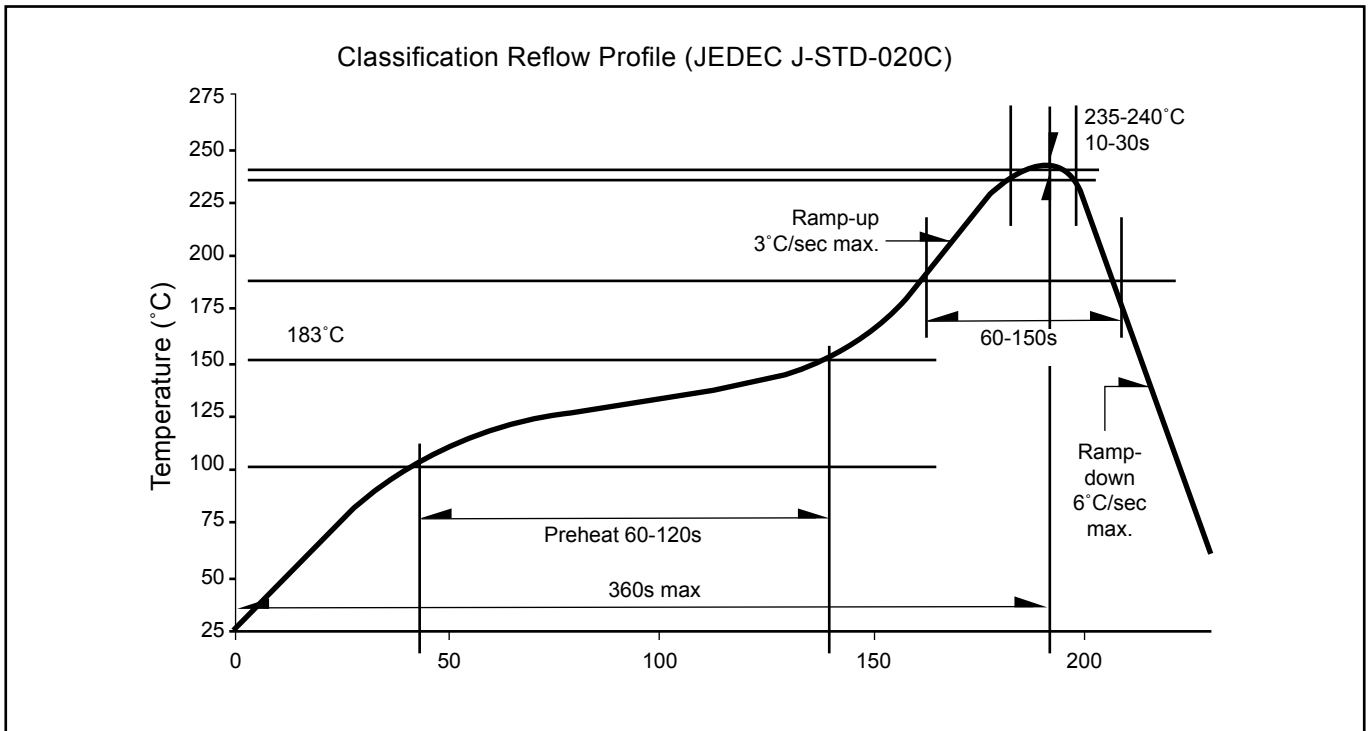
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



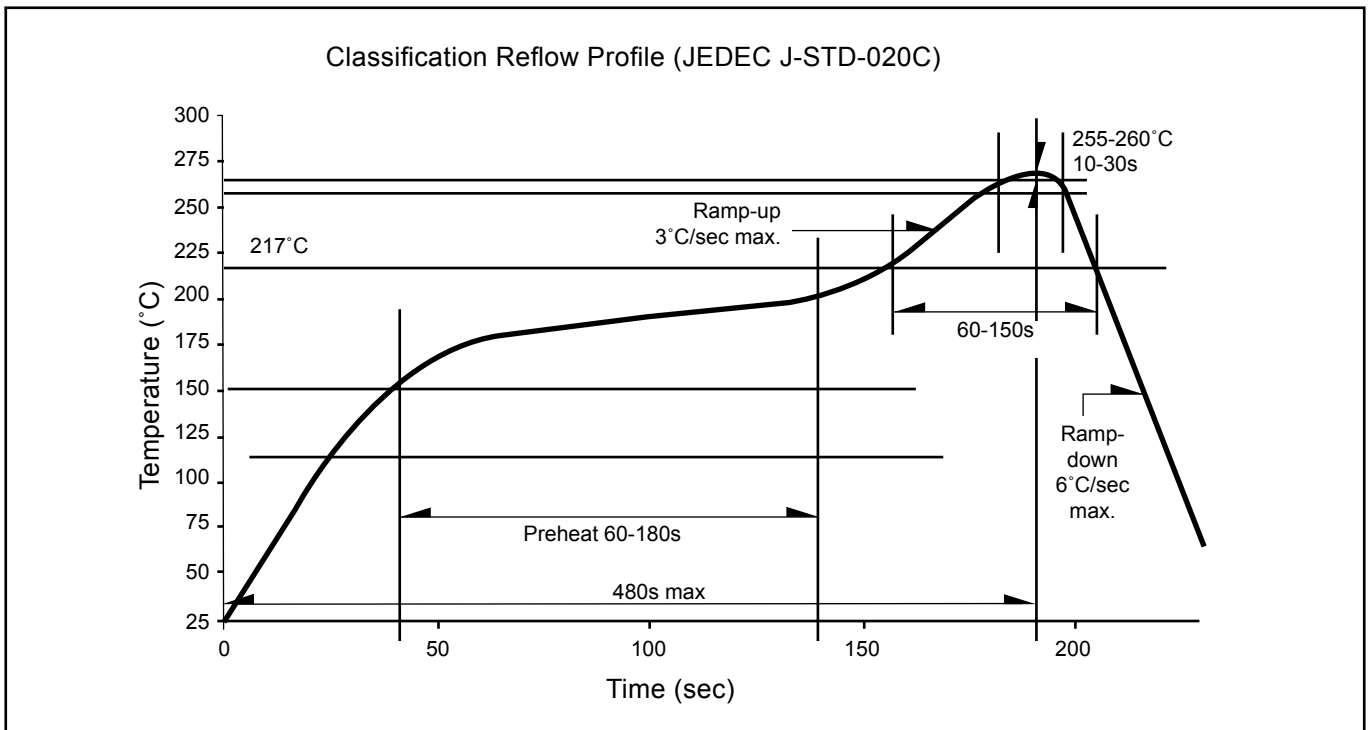
**For DomiLED™**

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	22 Jan 2008
2	Add Vf Bining table	17 Jun 2008
2	Add new partno: DDW-HJG-W2X1-1	16 Jul 2008
2, 4	Add Thermal Resistance and Add New CCT White Color Bin	20 Feb 2009
2	Not for new design --> DDW-HJG-VW1-1	12 Mar 2009
1	Add automotive application	16 May 2009
2	Add new partno --> DDW-HJG-X1X2-1	30 Nov 2009
3	Add Characteristics	09 Feb 2010
2	Not for new design --> DDW-HJG-W2X1-1	02 Mar 2010

**NOTE**

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DOMINANT Semiconductors 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 Semiconductors.

## About Us

DOMINANT Semiconductors 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 Semiconductors can be found on the Internet at <http://www.dominant-semi.com>.

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