DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

Power DomiLED™

InGaN : DWZB-DZJG-1

Power DomiLED™

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLED™ 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.
> Long lifetime up to 50,000 hours due to silicone encapsulation.
> 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)
> Signage: full colour display video notice board, signage, special effect lighting.
> Industrial: white goods (eg: Oven, microwave, etc.), light bar, illuminated advertising.
> Lighting: architecture lighting, general lighting, garden light, channel light.

Optical Characteristics (Tj=25˚C)

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ 30mA IV (mcd) Min.	Typ.	Max.
DWZB-DZJG-WX2-1	Ice Blue	120	1125.0	1800.0	2850.0

NOTE
1. All part number above comes in a quantity of 2000 units per reel.
2. Other luminous intensity groups may also be available upon request.
3. Luminous intensity is measured with an accuracy of ± 11%.
4. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
5. 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	Vf @ If = 30mA Min. (V)	Typ. (V)	Max. (V)
DWZB-DZJG	2.80	3.40	3.80

Forward voltages are measure using a current pulse of 1 ms and with an accuracy of ± 0.1V.

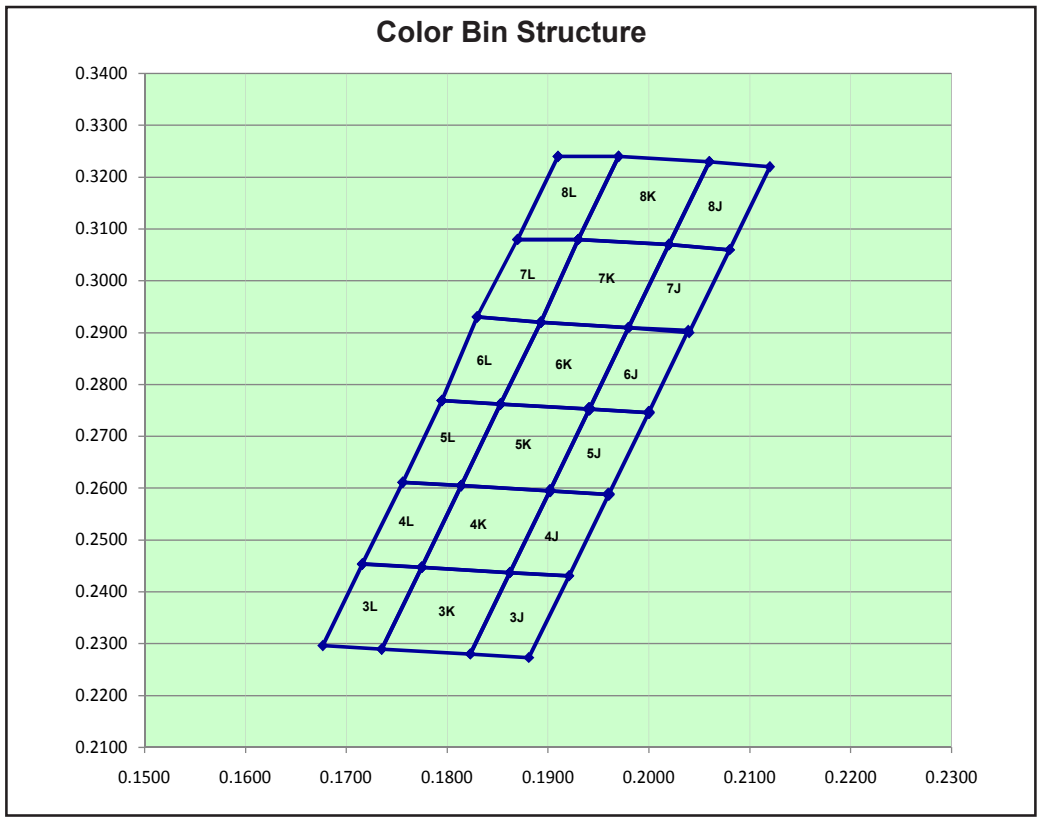
Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.1)	300	mA
Reverse voltage; Ir (max) = 10µA	Not designed for reverse bias	V
ESD threshold (HBM)	4000	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, $R_{th\ JA}$ - Junction / solder point, $R_{th\ JS}$ (Mounting on FR4 with pad size >= 16 mm^2 per pad)	 300 180	 K/W K/W

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of V_F (typ) I_F = 30mA; 0 ˚C <= T <= 100 ˚C	TC_V	DWZB-DZJG	-6.00	mV / K
Temperature coefficient of I_V (typ) I_F = 30mA; 0 ˚C <= T <= 100 ˚C	TC_{IV}	DWZB-DZJG	-0.22	% / K
Temperature coefficient of Cx (typ) I_F = 30mA; 0 ˚C <= T <= 100 ˚C	TC_{Cx}	DWZB-DZJG	-0.0001	
Temperature coefficient of Cy (typ) I_F = 30mA; 0 ˚C <= T <= 100 ˚C	TC_{Cy}	DWZB-DZJG	-0.0002	

DWZB, White Color Grouping



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

Bin		1	2	3	4
3J	Cx	0.1862	0.1921	0.1881	0.1823
	Cy	0.2437	0.2431	0.2273	0.2280
3K	Cx	0.1775	0.1862	0.1823	0.1735
	Cy	0.2447	0.2437	0.2280	0.2289
3L	Cx	0.1716	0.1775	0.1735	0.1677
	Cy	0.2453	0.2447	0.2289	0.2296
4J	Cx	0.1902	0.1960	0.1921	0.1862
	Cy	0.2595	0.2588	0.2431	0.2437
4K	Cx	0.1814	0.1902	0.1862	0.1775
	Cy	0.2605	0.2595	0.2437	0.2447
4L	Cx	0.1756	0.1814	0.1775	0.1716
	Cy	0.2611	0.2605	0.2447	0.2454
5J	Cx	0.1941	0.2000	0.1960	0.1902
	Cy	0.2753	0.2746	0.2588	0.2595
5K	Cx	0.1853	0.1941	0.1902	0.1814
	Cy	0.2762	0.2753	0.2595	0.2605
5L	Cx	0.1795	0.1853	0.1814	0.1756
	Cy	0.2769	0.2762	0.2605	0.2611
6J	Cx	0.1980	0.2039	0.2000	0.1941
	Cy	0.2910	0.2904	0.2746	0.2753
6K	Cx	0.1893	0.1980	0.1941	0.1853
	Cy	0.2920	0.2910	0.2753	0.2762
6L	Cx	0.1830	0.1893	0.1853	0.1795
	Cy	0.2930	0.2920	0.2762	0.2769

Bin		1	2	3	4
7J	Cx	0.2020	0.2080	0.2040	0.1980
	Cy	0.3070	0.3060	0.2900	0.2910
7K	Cx	0.1930	0.2020	0.1980	0.1893
	Cy	0.3080	0.3070	0.2910	0.2920
7L	Cx	0.1870	0.1930	0.1893	0.1830
	Cy	0.3080	0.3080	0.2920	0.2930
8J	Cx	0.2060	0.2120	0.2080	0.2020
	Cy	0.3230	0.3220	0.3060	0.3070
8K	Cx	0.1970	0.2060	0.2020	0.1930
	Cy	0.3240	0.3230	0.3070	0.3080
8L	Cx	0.1910	0.1970	0.1930	0.1870
	Cy	0.3240	0.3240	0.3080	0.3080

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.

Luminous Intensity Group at Tj=25˚C

Brightness Group	Luminous Intensity IV (mcd)
W1	1125.0...1400.0
W2	1400.0...1800.0
X1	1800.0...2240.0
X2	2240.0...2850.0

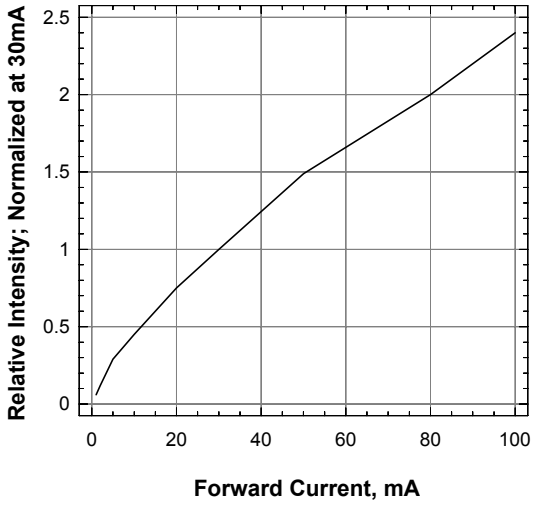
Luminous intensity is measured with an accuracy of ± 11%.

Vf Bining (Optional)

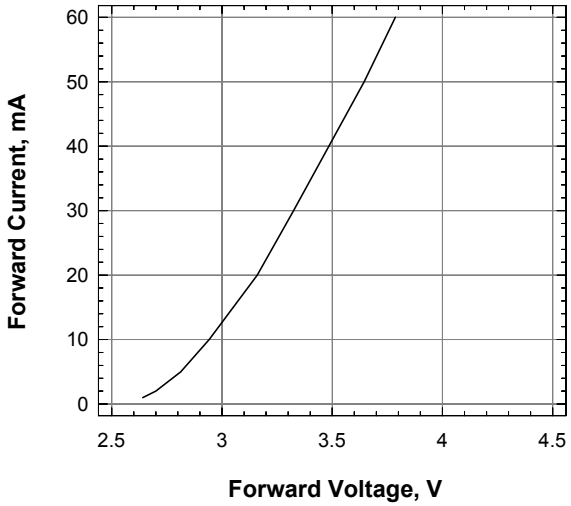
Vf Bin @ 30 mA	Forward Voltage (V)
V0	2.70 ... 3.00
V1	3.00 ... 3.30
V2	3.30 ... 3.60

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

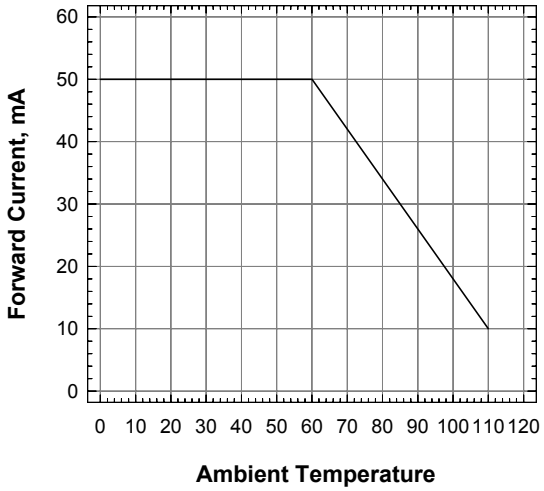
Relative Intensity Vs Forward Current



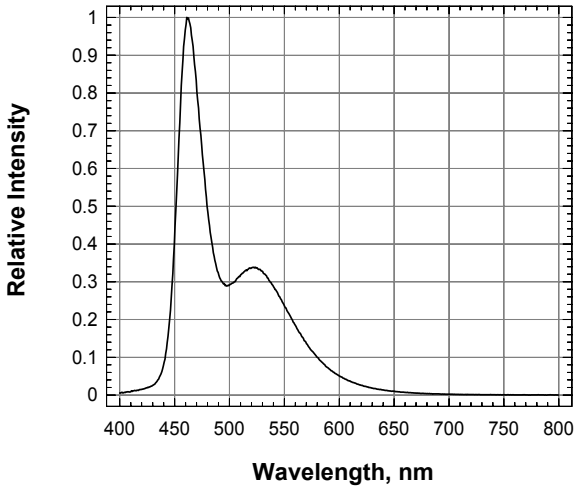
Forward Current Vs Forward Voltage



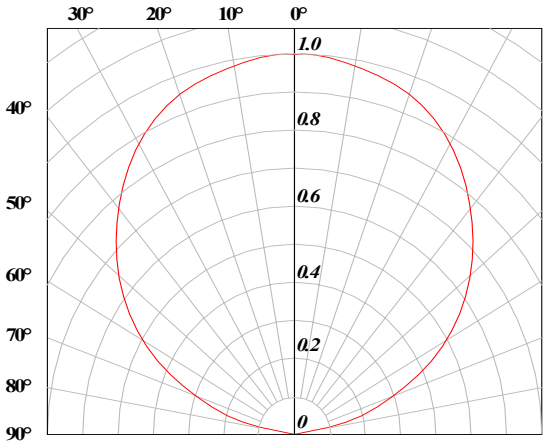
Maximum Current Vs Ambient Temperature



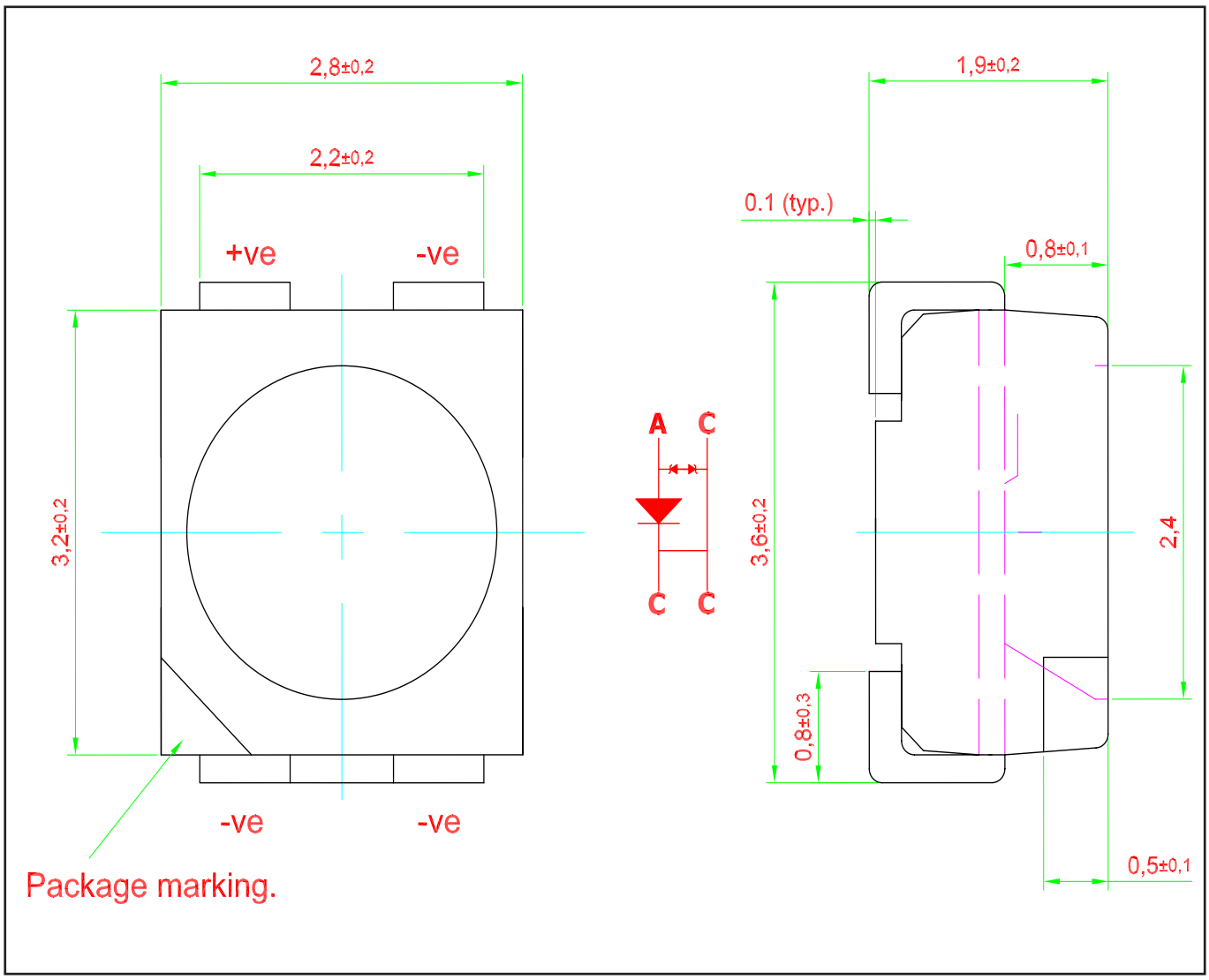
Relative Intensity Vs Wavelength



Radiation Pattern



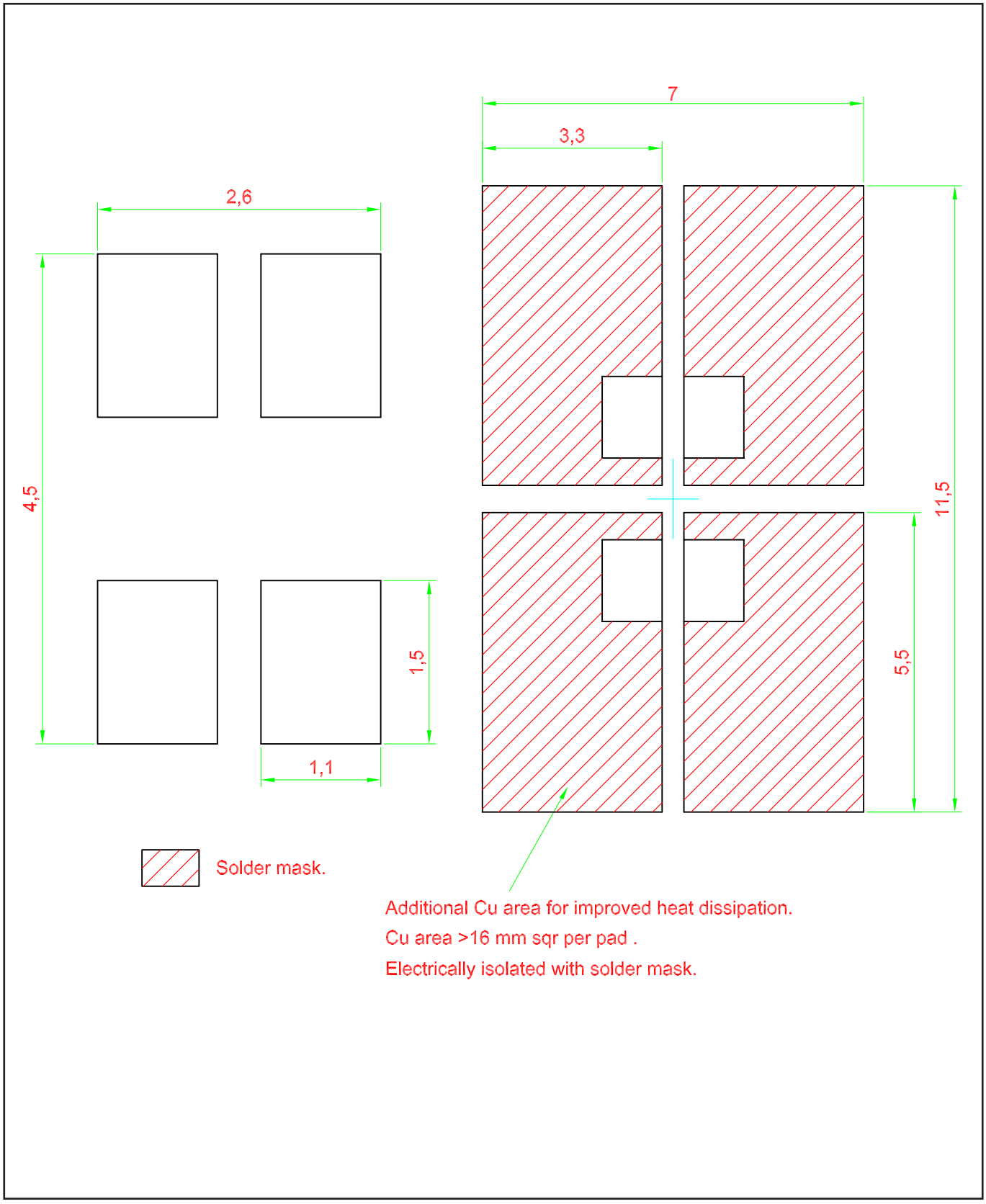
Power DomiLED™ • InGaN : DWZB-DZJG-1 Package Outlines



Material

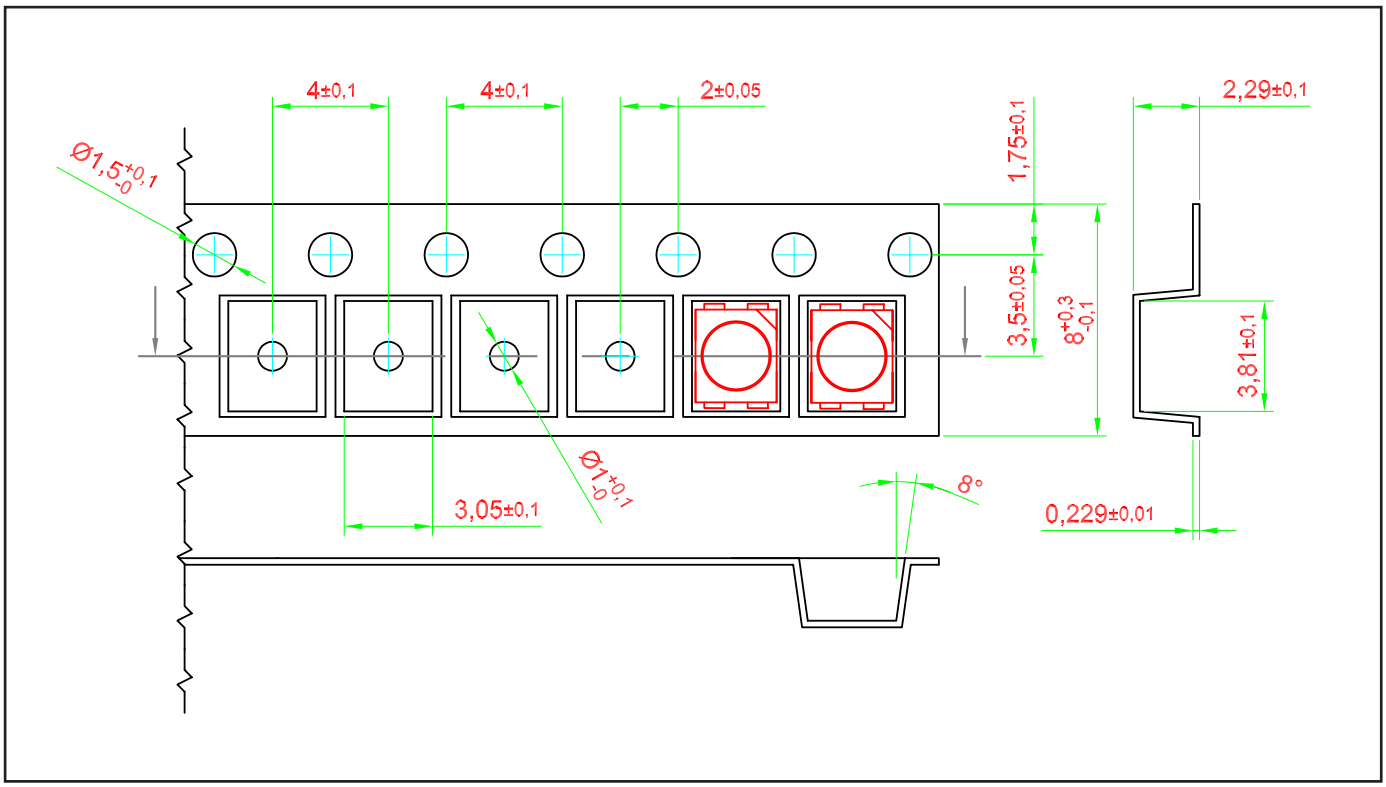
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Sn Plating

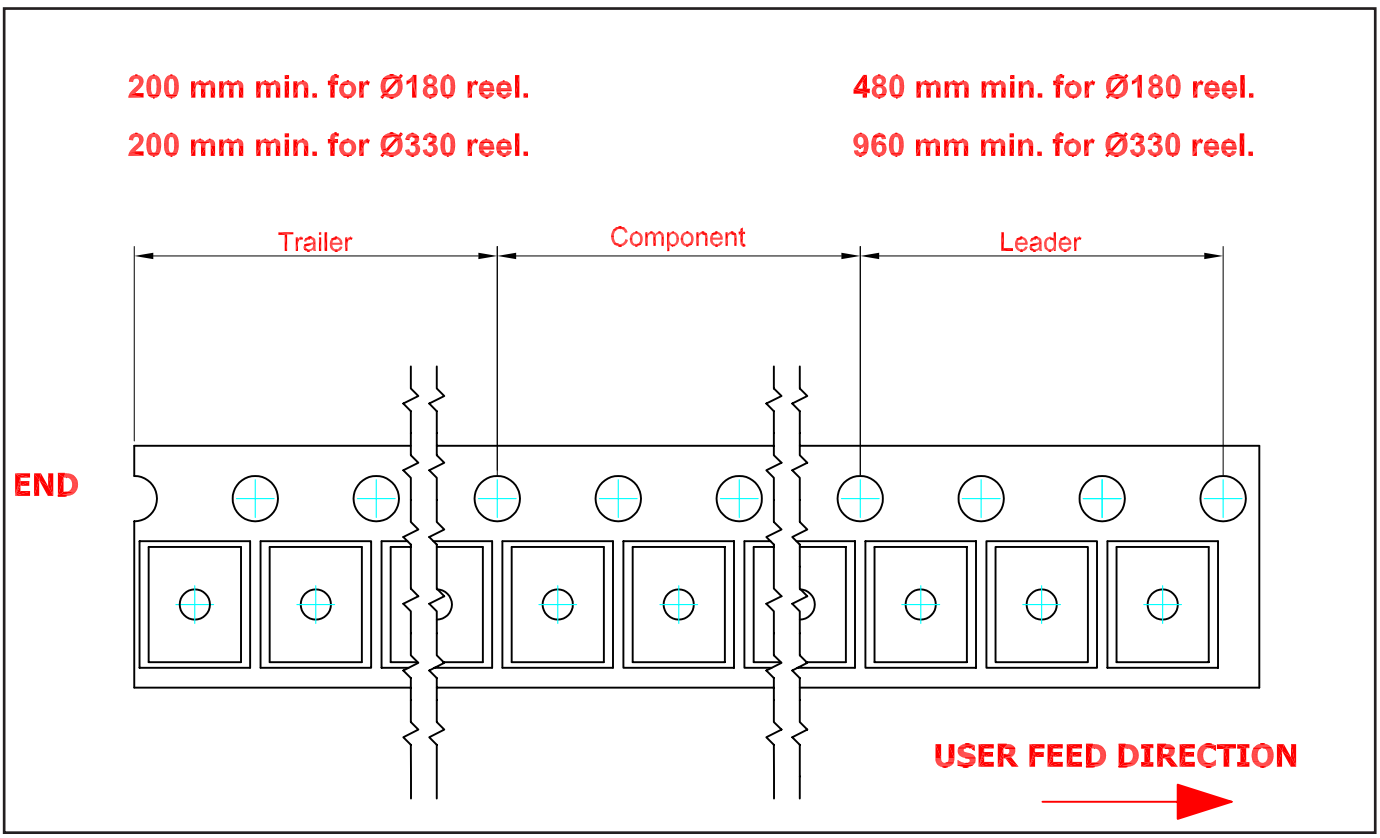
Recommended Solder Pad



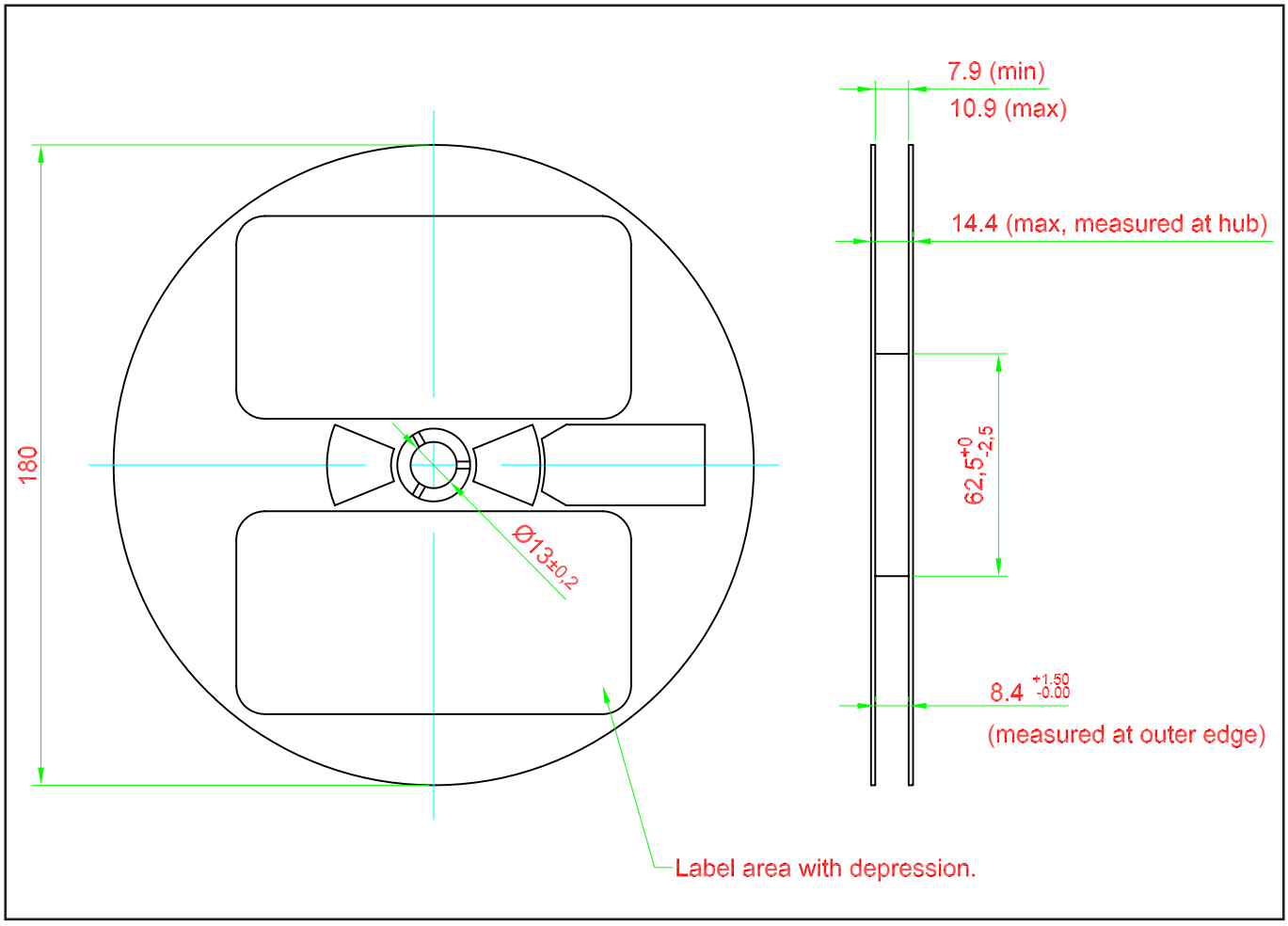
Taping and orientation

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





Packaging Specification



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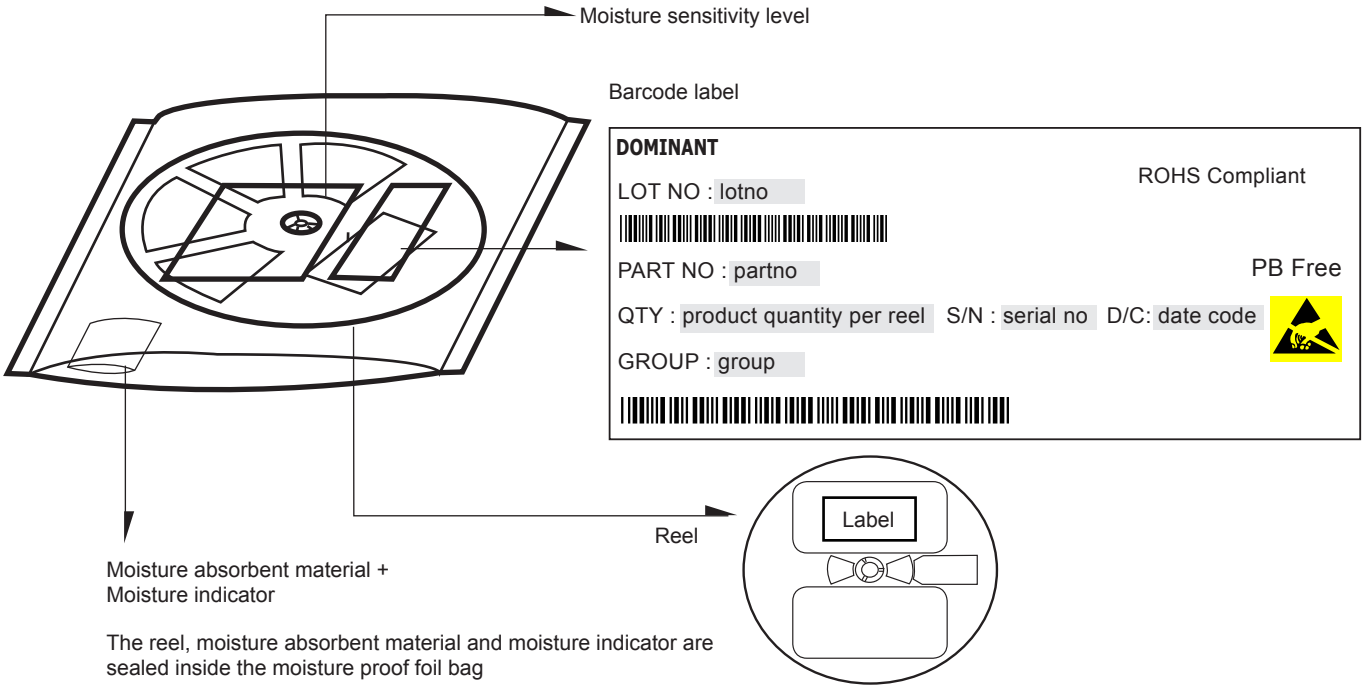
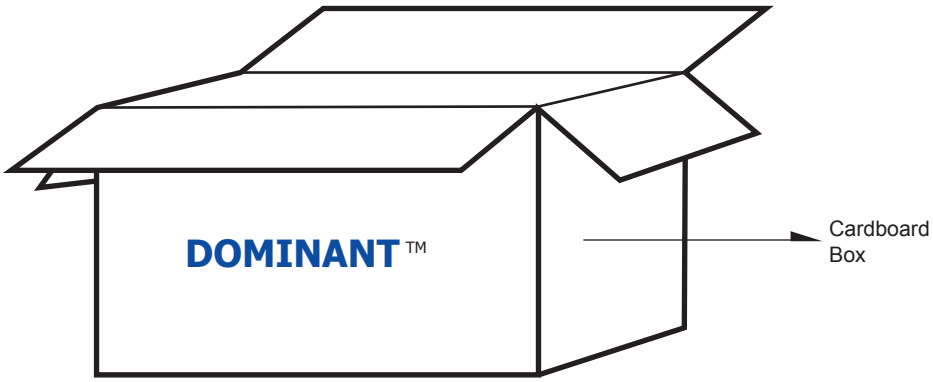


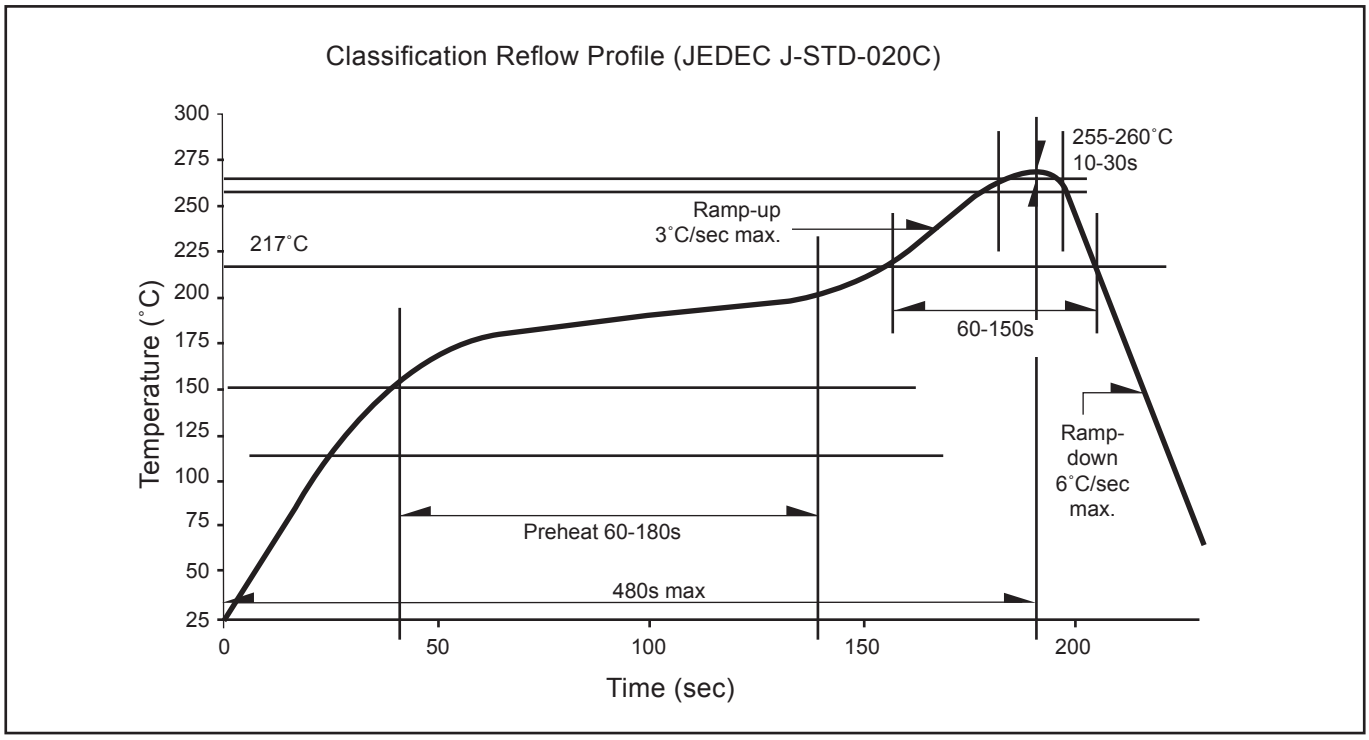
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	**0.034**	**190 ± 10**



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	14 Mar 2013
6	Add Vf Binning Option	14 Mar 2014

NOTE

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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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