DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

Power DomiLED™

AlInGaP : DWx-MJB

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 using thin film 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 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.



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Optical Characteristics at Tj=25˚C

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ IF = 50mA IV (mcd) Min.	Typ.	Max.
DWR-MJB-W2X-1	Red, 625nm	120	1400.0	2240.0	2850.0
DWY-MJB-W2X-1	Yellow, 587nm	120	1400.0	2240.0	2850.0

NOTE
1. All part number above comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of ± 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. An optional Vf bining is also available upon request. Bining scheme is as per following table.

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 50mA Min. (V)	Typ. (V)	Max. (V)	V_r @ I_r = 10uA Min. (V)
DWx-MJB	2.0	2.2	2.8	12

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	70	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.1)	100	mA
Reverse voltage	12	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)	200	mW
Thermal resistance - Junction / ambient, $R_{th\ JA}$ - Junction / solder point, $R_{th\ JS}$ (Mounting on FR4 PCB, pad size >= 16 mm^2 per pad)	 300 130	 K/W K/W

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) I_F = 50mA; 0 ˚C <= T <= 100 ˚C	$TC_{\lambda dom}$ (typ)	DWR-MJB DWY-MJB	0.09 0.10	nm / K
Temperature coefficient of V_F (typ) I_F = 50mA; 0 ˚C <= T <= 100 ˚C	TC_V	DWR-MJB DWY-MJB	-3.3 -1.7	mV / K
Temperature coefficient of I_V (typ) I_F = 50mA; 0 ˚C <= T <= 100 ˚C	TC_{IV}	DWR-MJB DWY-MJB	-13.15 -15.96	mcd / K

Wavelength Grouping at Tj= 25˚C

Color	Group	Wavelength distribution (nm)
DWR; Red	Full	620 - 630
DWY; Yellow	Full	585 - 594
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

Dominant wavelength is measured with an accuracy of ± 1 nm at a drive current of 50mA

Luminous Intensity Group at Tj=25˚C

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

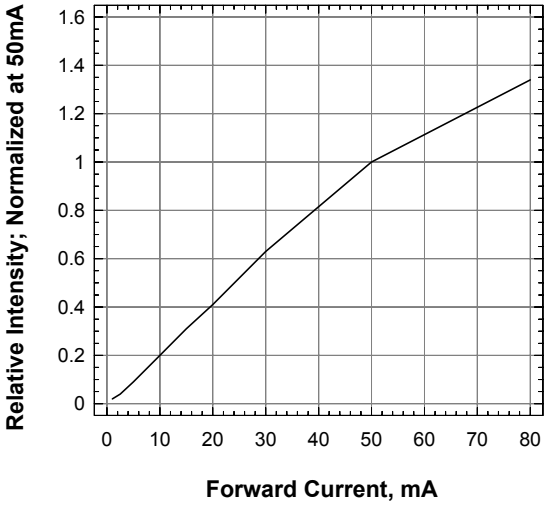
Luminous intensity is measured with an accuracy of ± 11%.

Vf Bining (Optional) at Tj= 25˚C

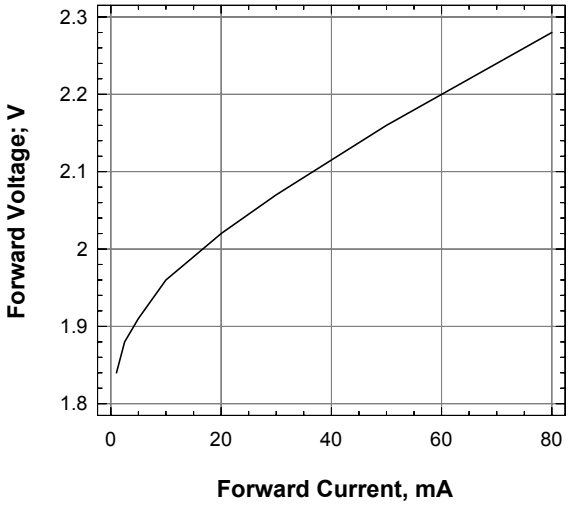
Vf @ If = 50mA	Forward Voltage (V)
5A	2.05 ... 2.20
5B	2.20 ... 2.35
5C	2.35 ... 2.50
5D	2.50 ... 2.65

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

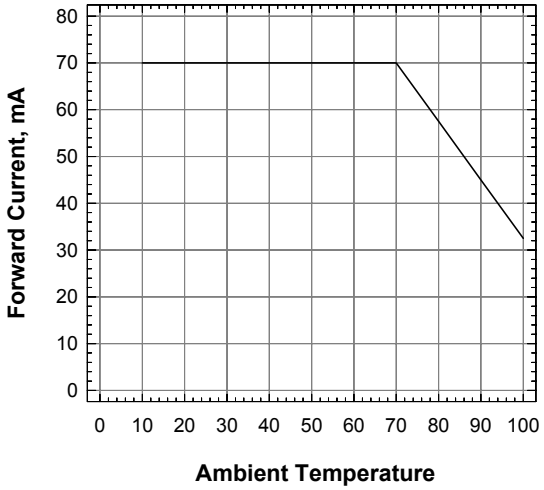
Relative Luminous Intensity Vs Forward Current



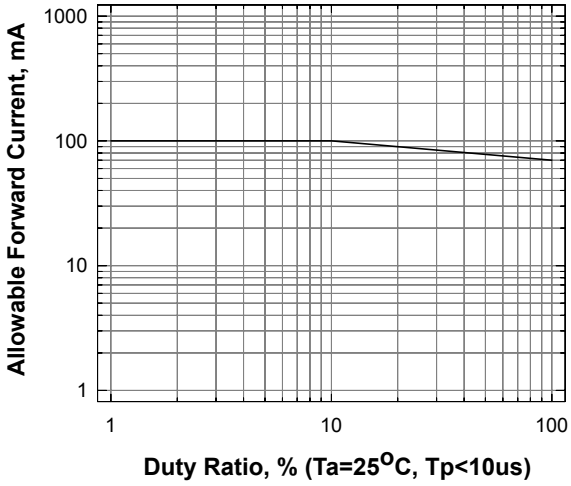
Forward Voltage Vs Forward Current



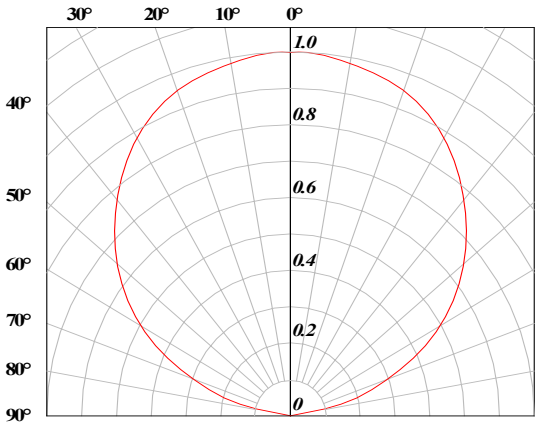
Maximum Current Vs Ambient Temperature



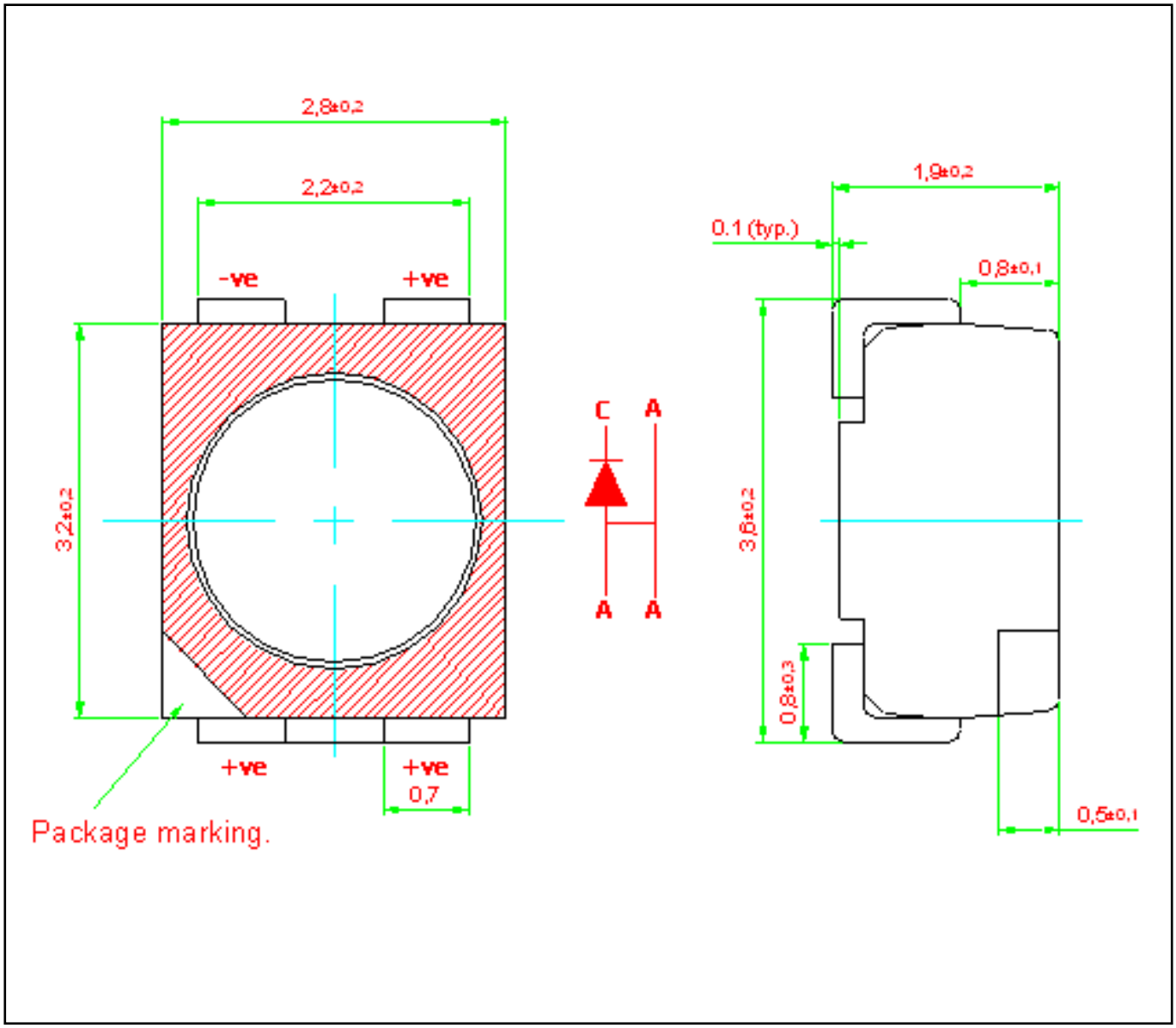
Allowable Forward Current Vs Duty Ratio



Radiation Pattern



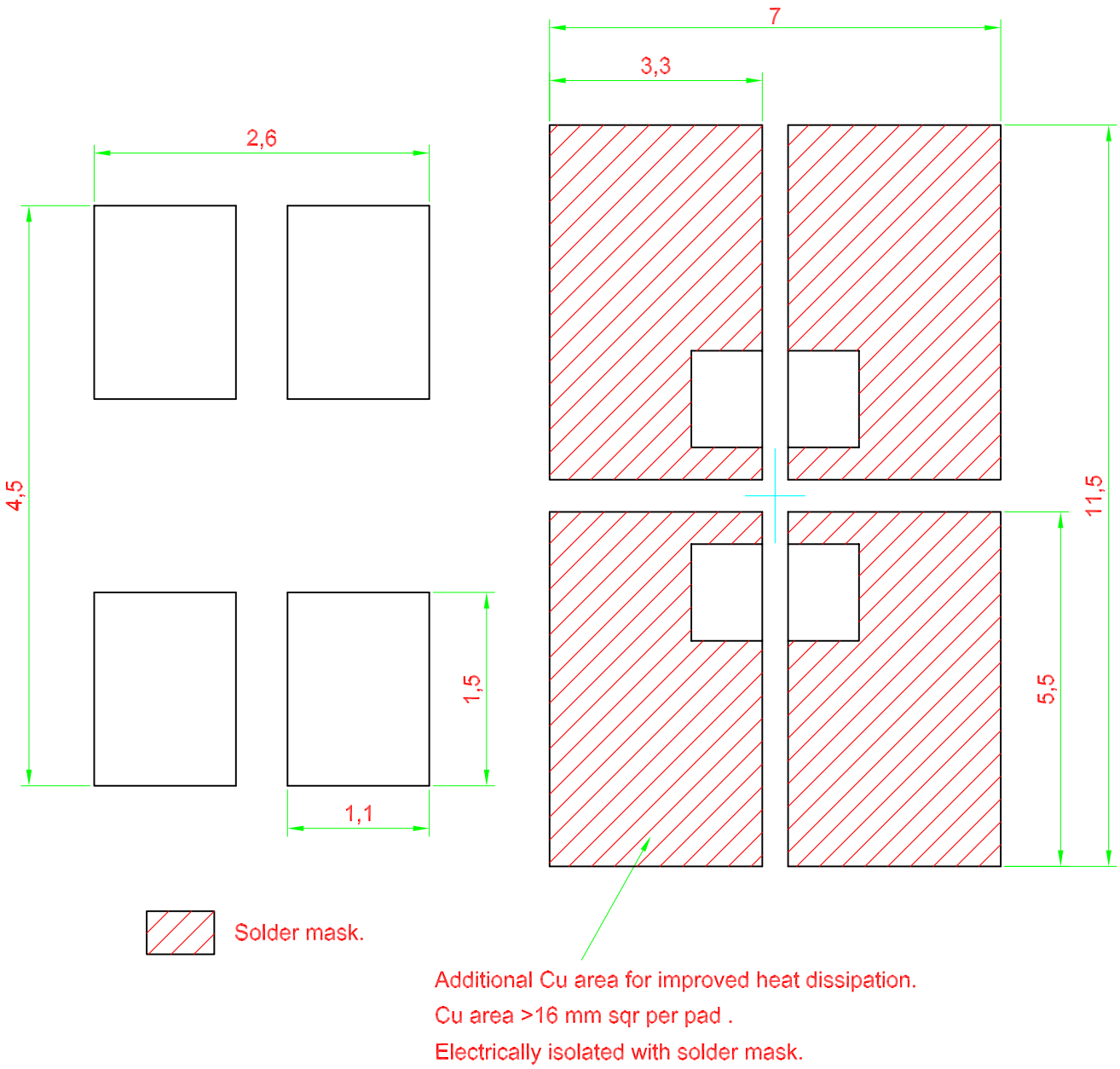
DomiLED™ • AlInGap : DWx-MJB Package Outlines



Material

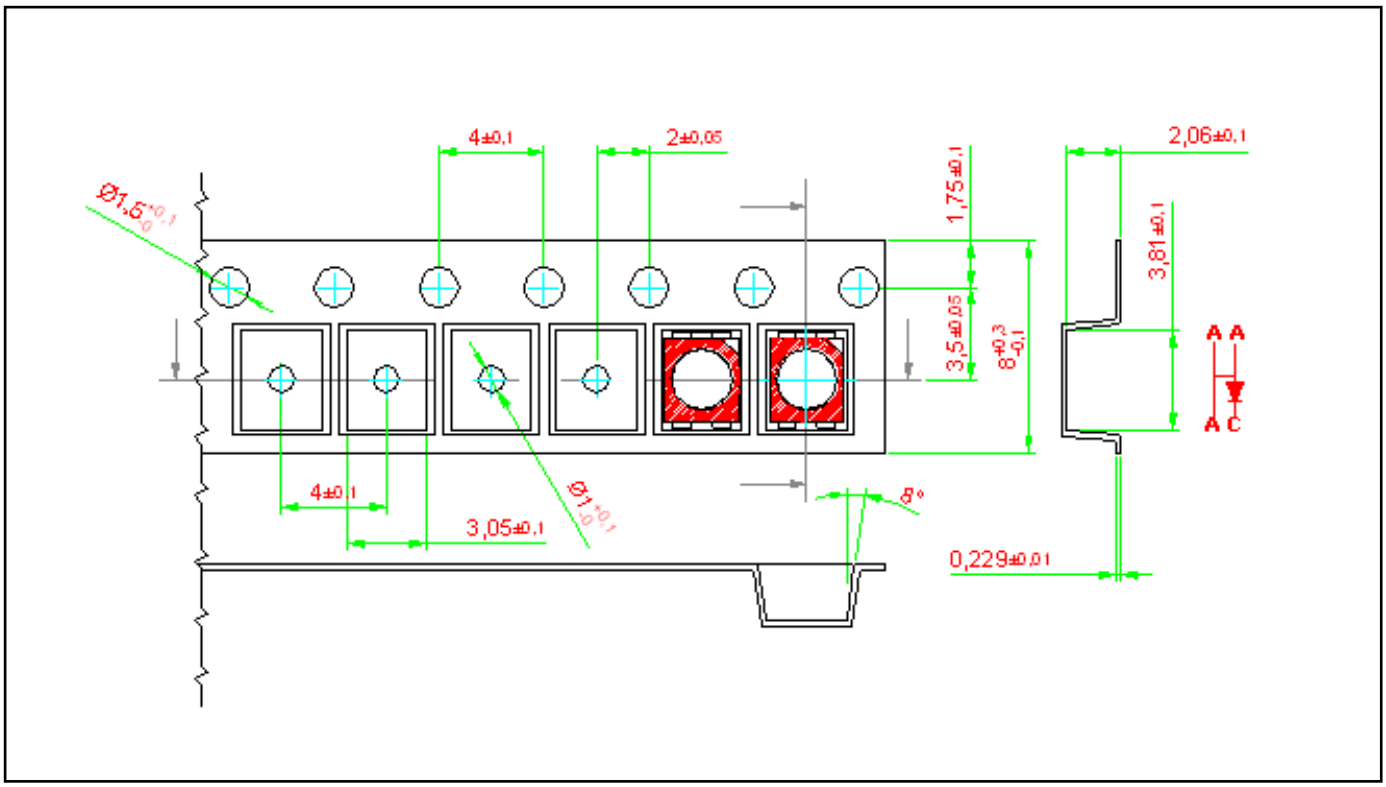
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad



Taping and orientation

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

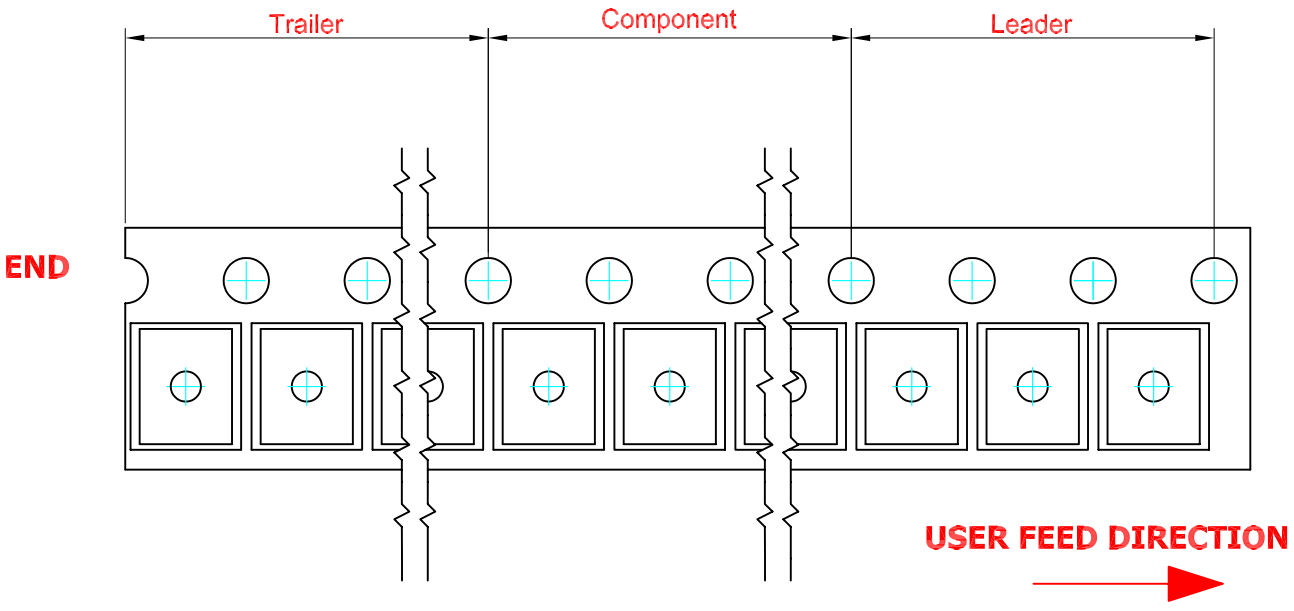


200 mm min. for Ø180 reel.

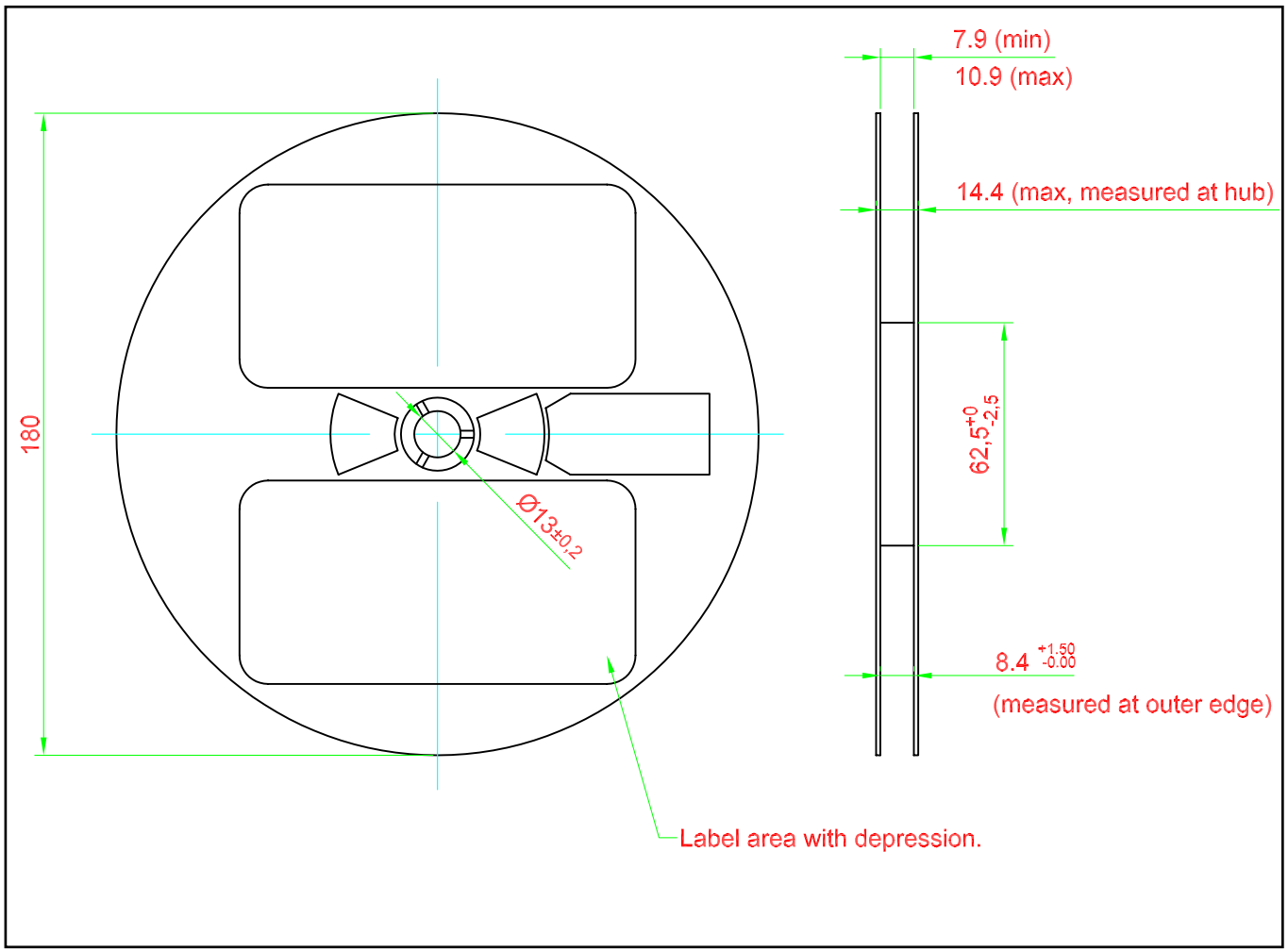
200 mm min. for Ø330 reel.

480 mm min. for Ø180 reel.

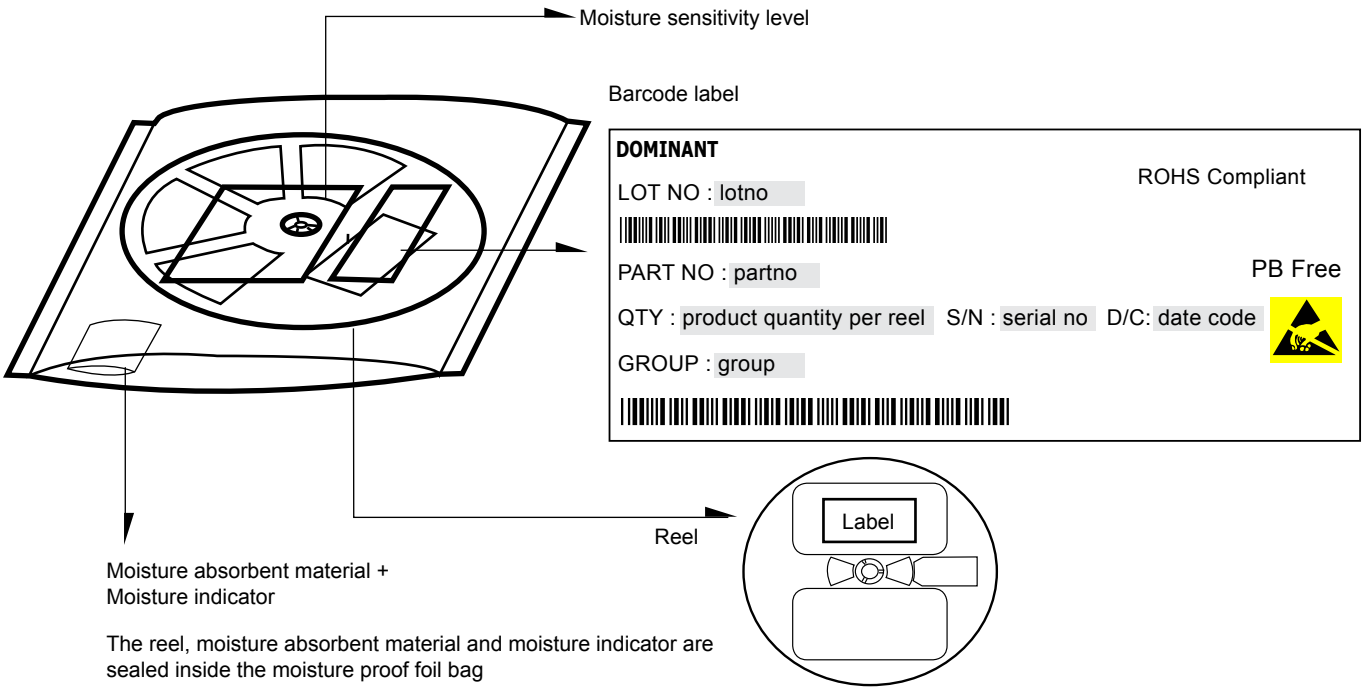
960 mm min. for Ø330 reel.



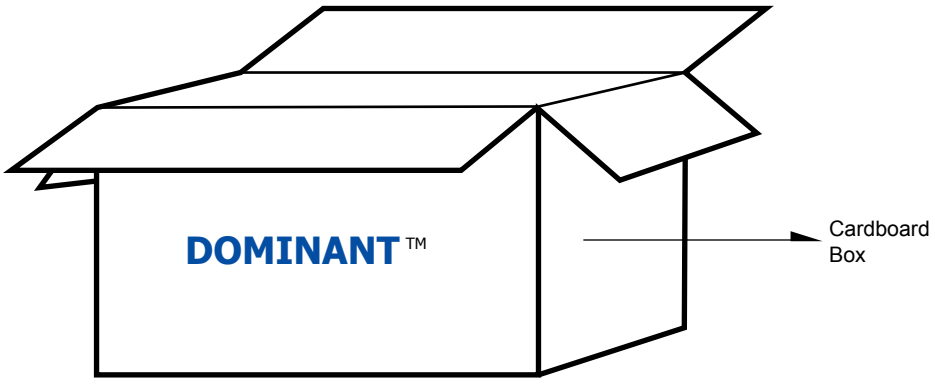
Packaging Specification



Packaging Specification



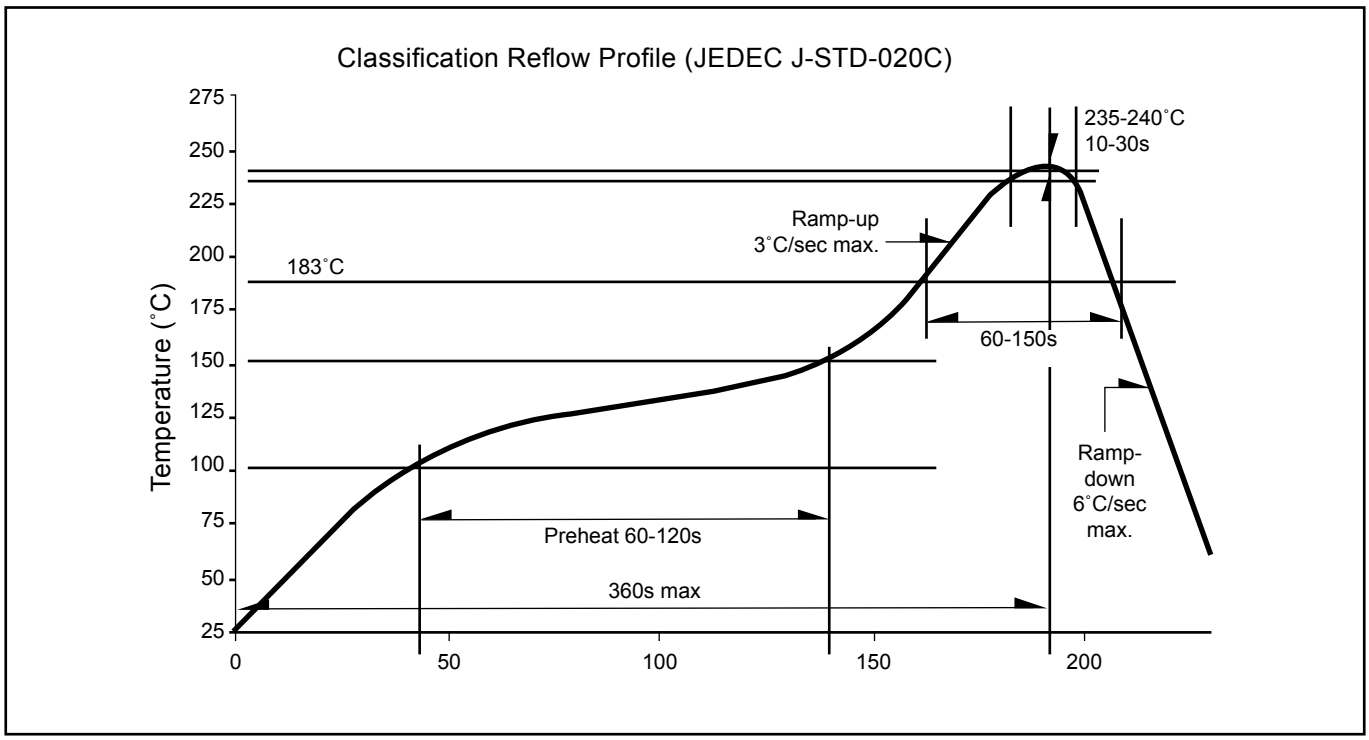
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	**0.034**	**190 ± 10**



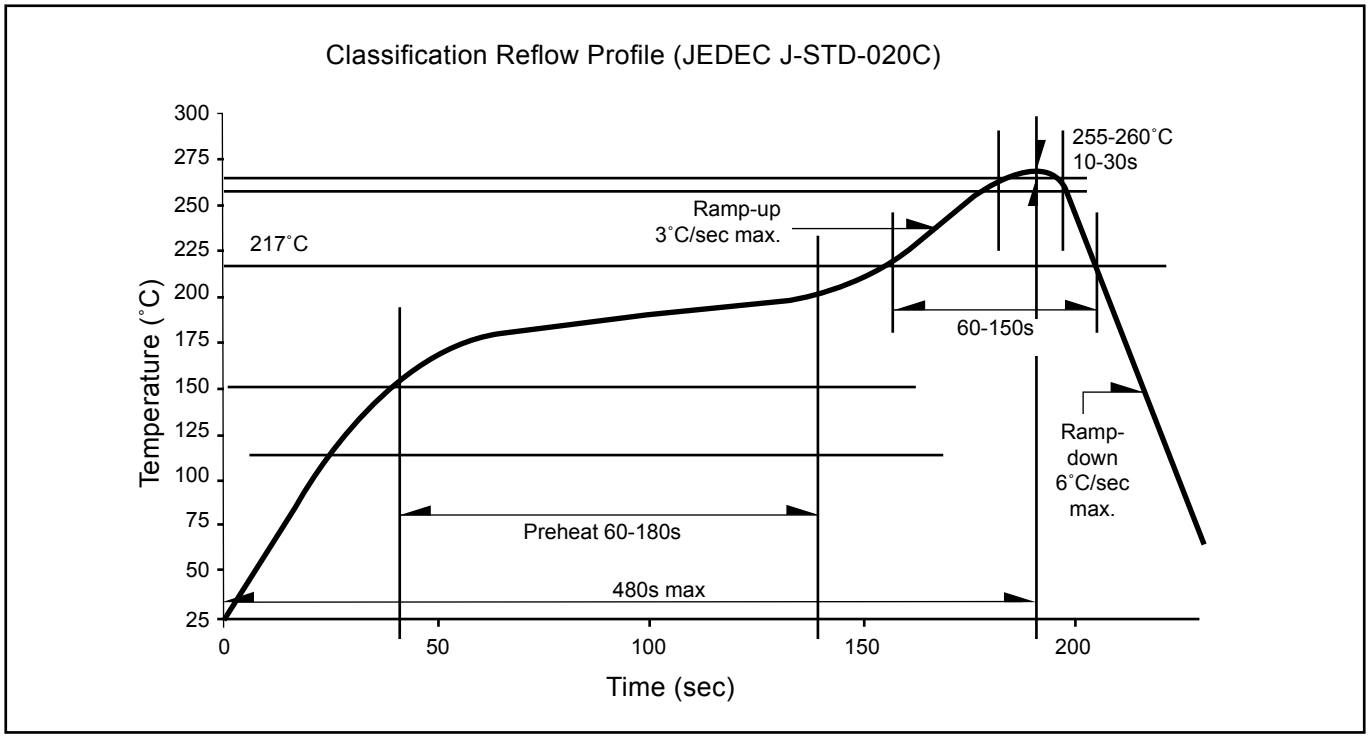
For Power DomiLED™

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	55 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	31 Oct 2008
-	Update Company Name	15 Mar 2010

NOTE

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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.

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