

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.
- > Lighting: architecture lighting, general lighting, garden light, channel light.



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 50mA			Flux @ IF=50mA,mlm
			Min.	Typ.	Max.	Typ.
DWS-PJG-W2X-1	Super Red, 632nm	120	1400.0	2125.0	2850.0	5750.0
DWR-PJG-X2Y1-1	Red, 620nm	120	2240.0	2850.0	3550.0	7700.0
DWA-PJG-X2Y-1	Amber, 617nm	120	2240.0	3550.0	4500.0	9600.0
DWY-PJG-X2Y-1	Yellow, 589nm	120	2240.0	3550.0	4500.0	9600.0

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 binning is also available upon request. Binning scheme is as per following table.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 50mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DWx-PJG	2.05	2.20	2.50	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)	2	kV
LED junction temperature	125	°C
Operating temperature	-40 ... +110	°C
Storage temperature	-40 ... +125	°C
Power dissipation (at room temperature)	200	mW
Thermal resistance		
- Junction / ambient, R _{th JA}	300	K/W
- Junction / solder point, R _{th JS}	130	K/W
(Mounting on FR4 PCB, pad size ≥ 16 mm ² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 50\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC λ_{dom} (typ)	DWS-PJG	0.04	nm / K
		DWR-PJG	0.05	
		DWA-PJG	0.06	
		DWY-PJG	0.08	
Temperature coefficient of V_F (typ) $I_F = 50\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC _V	DWS-PJG	-2.2	mV / K
		DWR-PJG	-2.2	
		DWA-PJG	-2.0	
		DWY-PJG	-1.9	
Temperature coefficient of I_V (typ) $I_F = 50\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC _{I_V}	DWS-PJG	-0.4	% / K
		DWR-PJG	-0.5	
		DWA-PJG	-0.7	
		DWY-PJG	-0.9	

Wavelength Grouping at Tj= 25°C

Color	Group	Wavelength distribution (nm)
DWS, Super Red	Full	625 - 640
DWR; Red	Full	620 - 630
DWA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
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
Y1	2850.0...3550.0
Y2	3550.0...4500.0

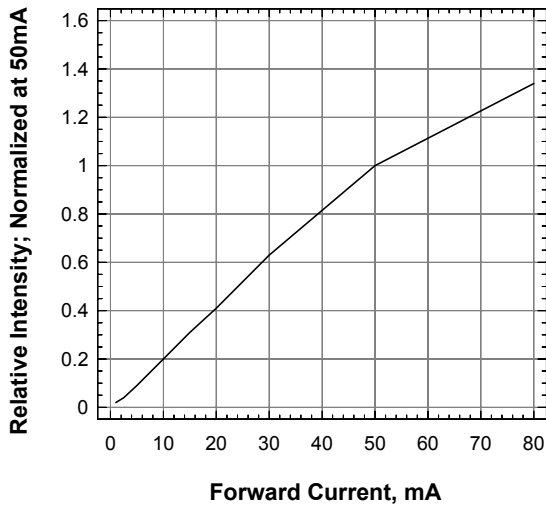
Luminous intensity is measured with an accuracy of ± 11%.

Vf Bining (Optional)

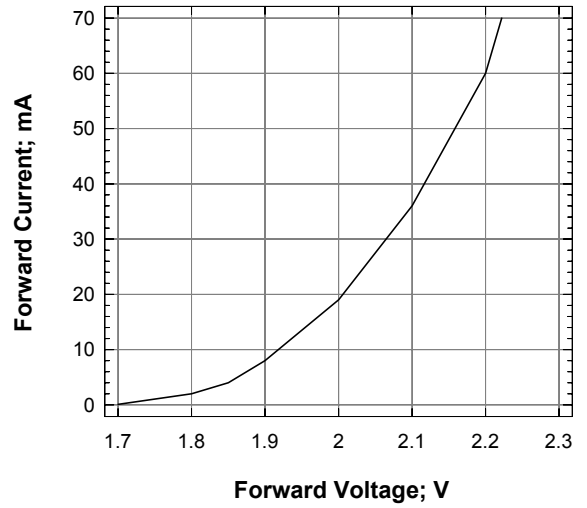
Vf @ If = 50mA	Forward Voltage (V)
51	2.05 ... 2.20
52	2.20 ... 2.35
53	2.35 ... 2.50

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

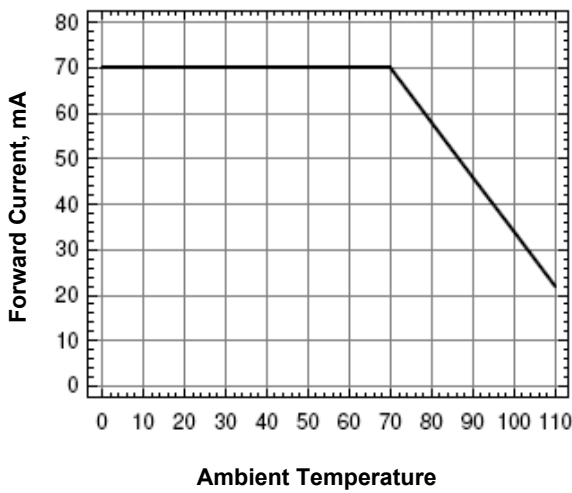
Relative Luminous Intensity Vs Forward Current



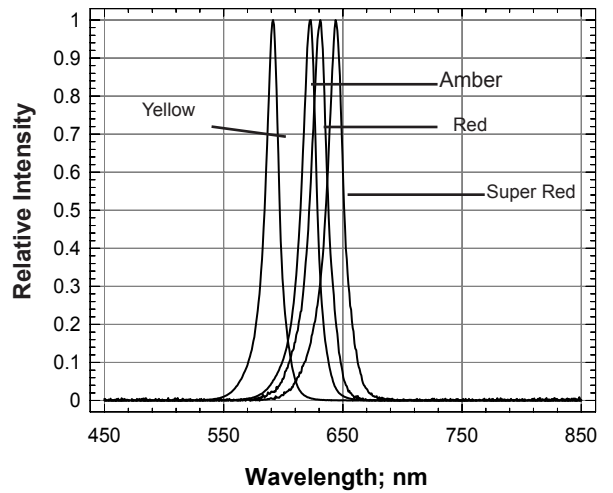
Forward Current vs Forward Voltage



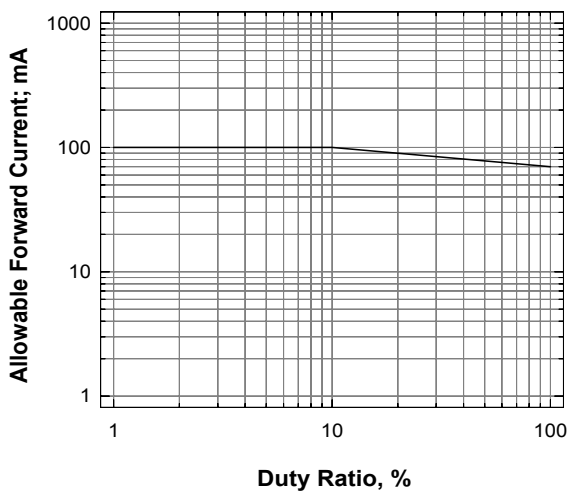
Maximum Current Vs Ambient Temperature



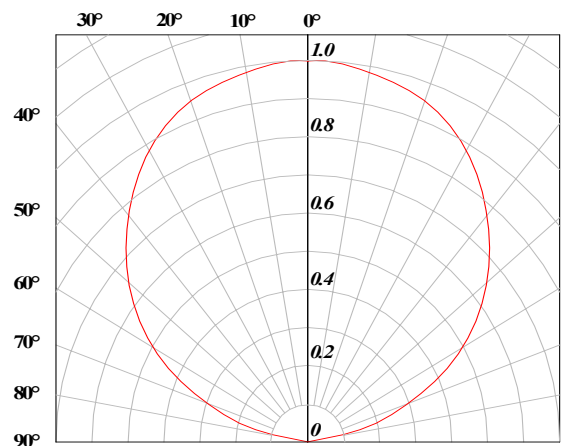
Relative Intensity Vs Wavelength



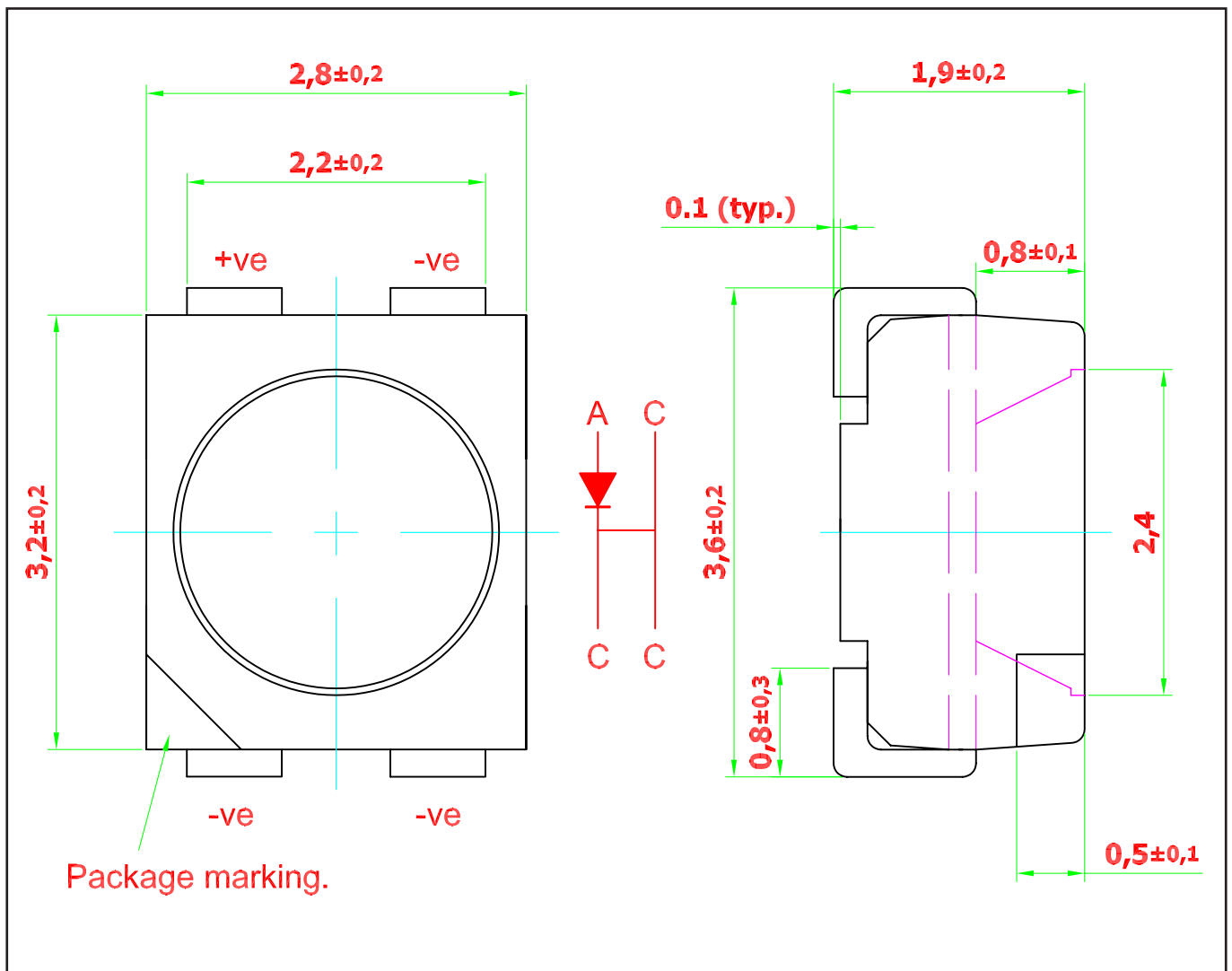
Allowable Forward Current Vs Duty ratio



Radiation Pattern



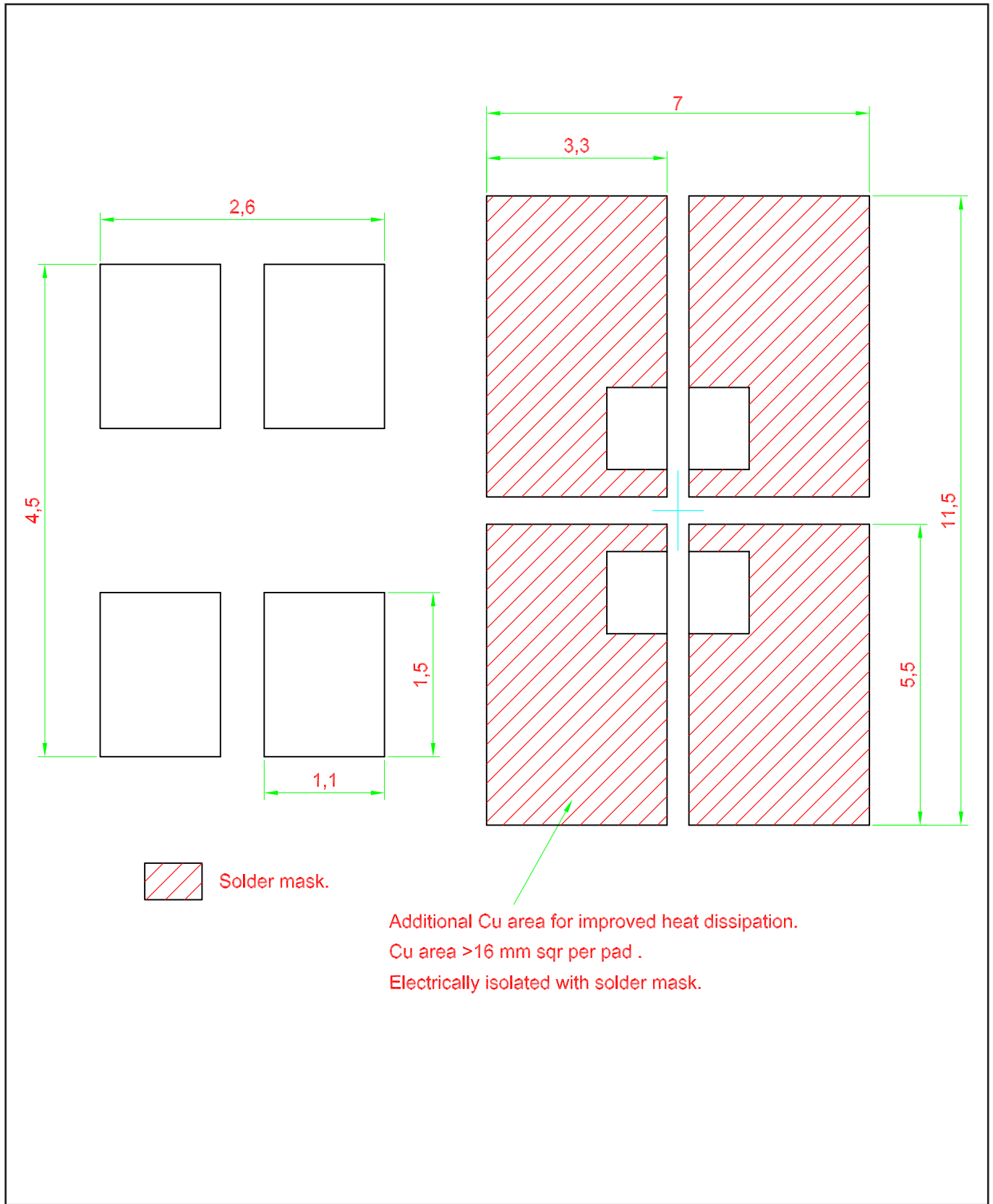
DomiLED™ • AllnGaP : DWx-PJG Package Outlines



Material

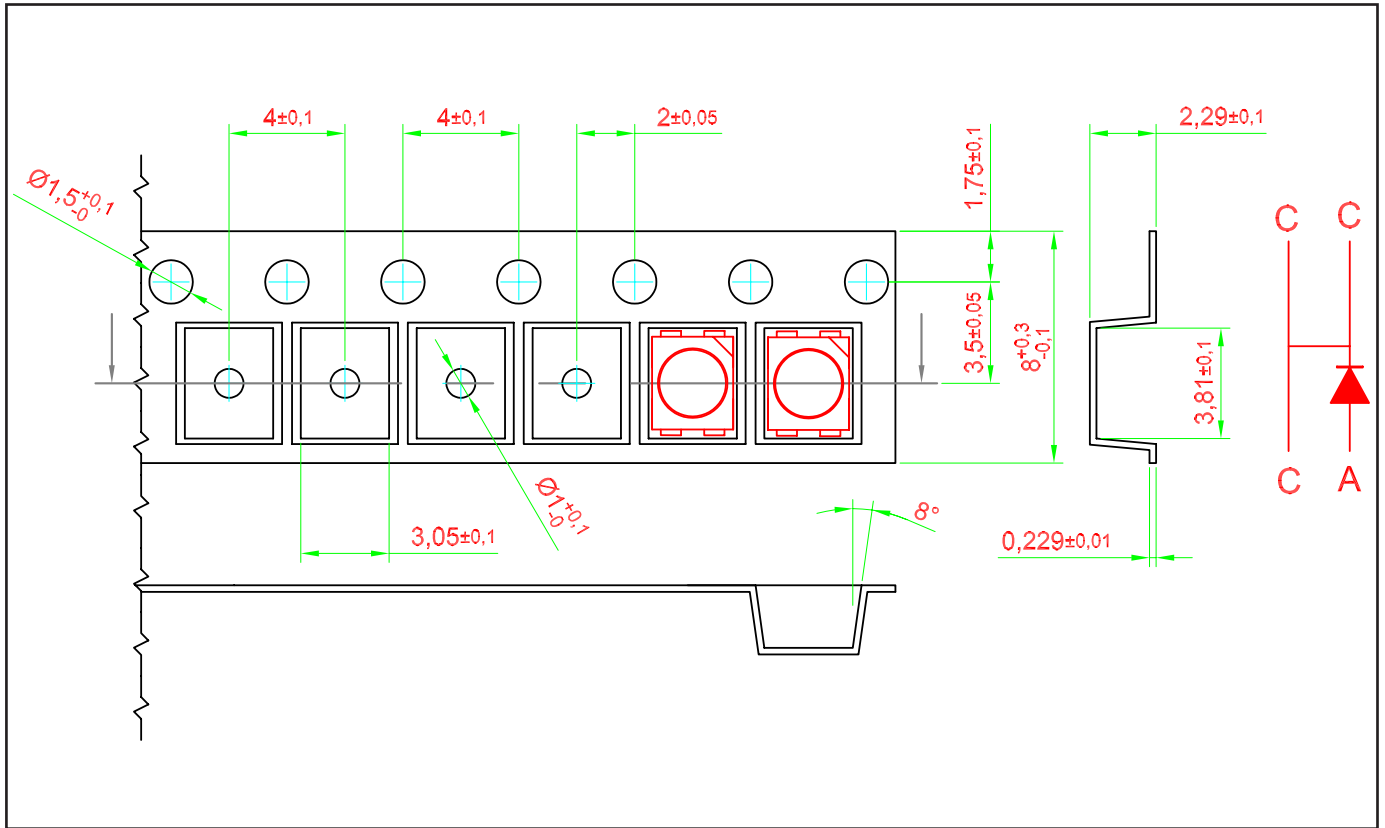
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone resin
Soldering Leads	Sn Plating

Recommended Solder Pad



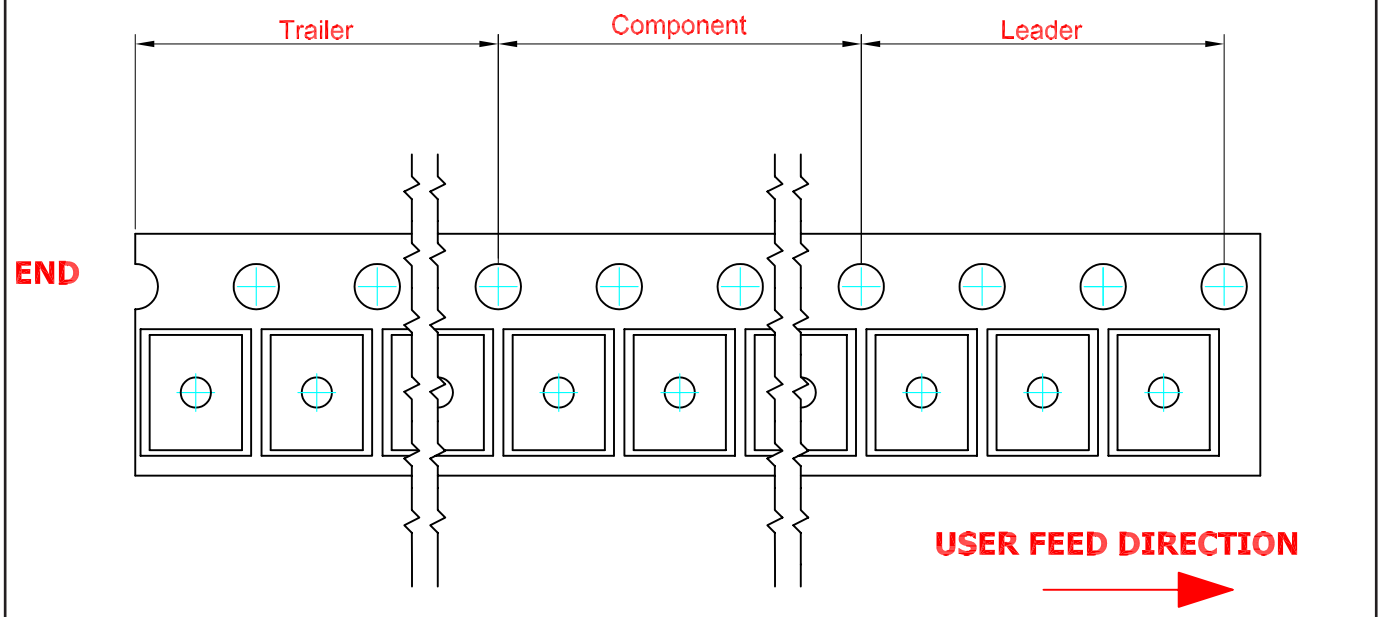
Taping and orientation

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

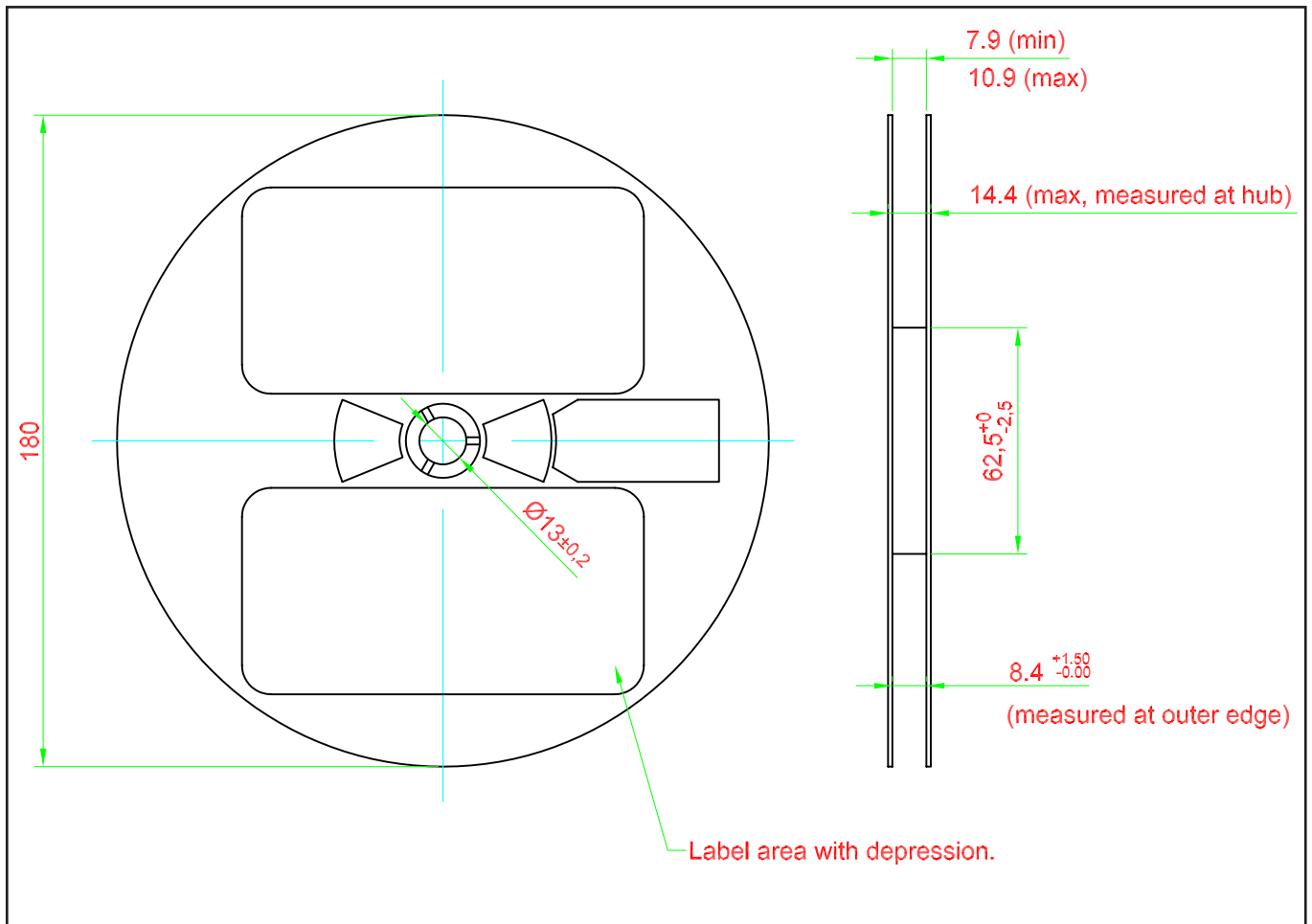


200 mm min. for $\varnothing 180$ reel.
 200 mm min. for $\varnothing 330$ reel.

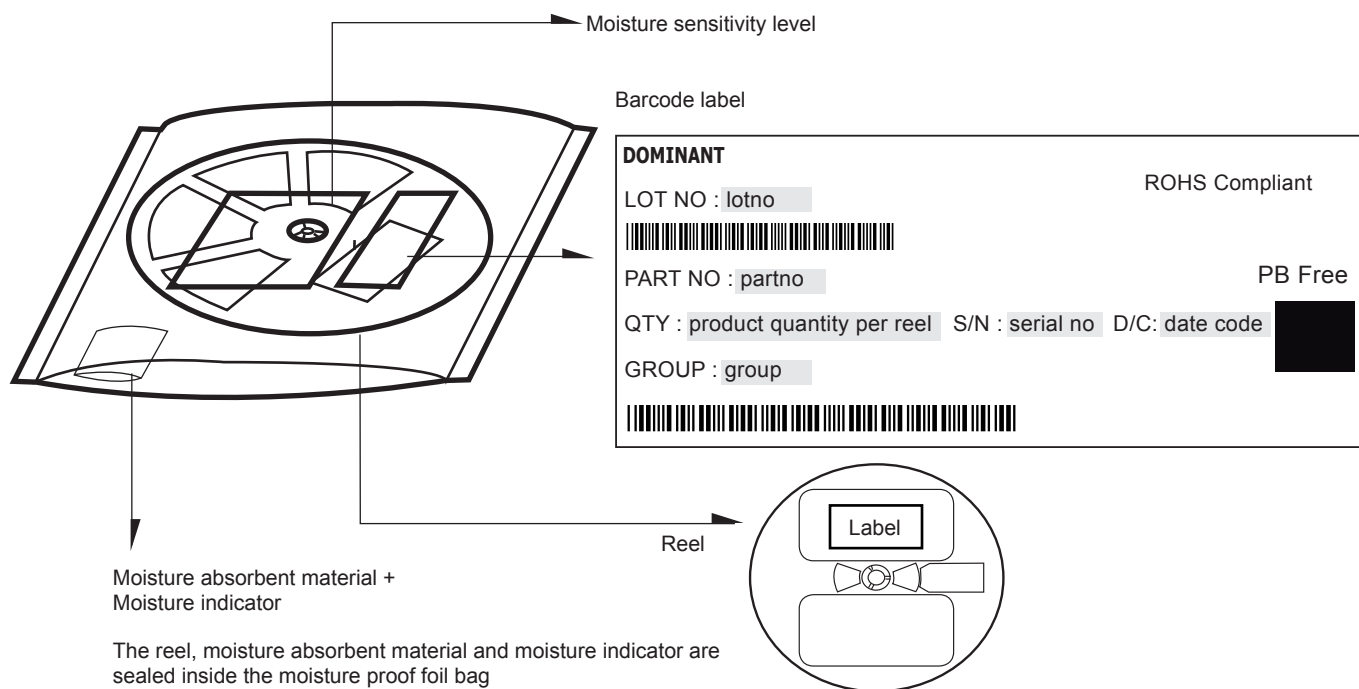
480 mm min. for $\varnothing 180$ reel.
 960 mm min. for $\varnothing 330$ reel.



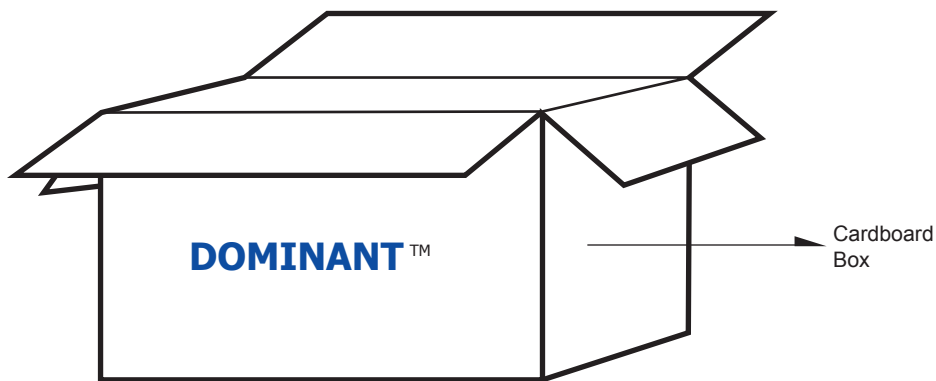
Packaging Specification



Packaging Specification



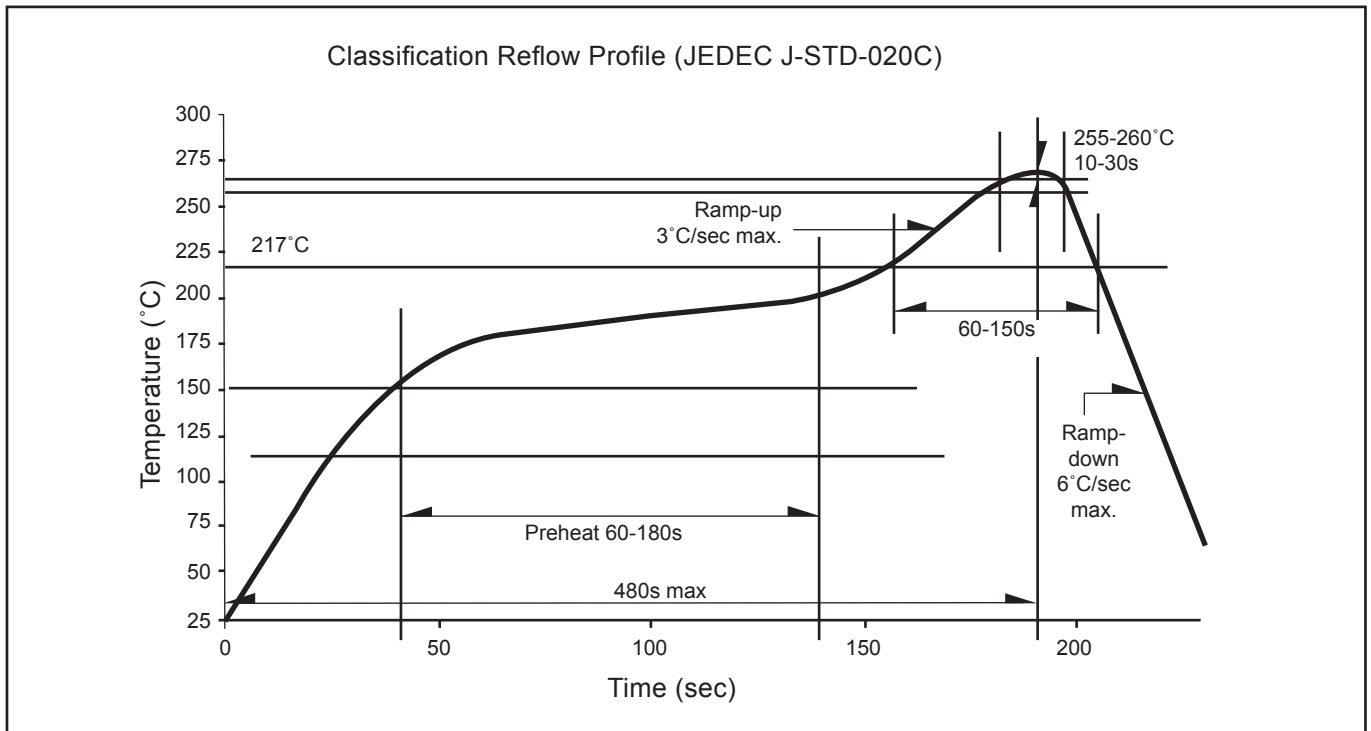
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



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	06 Oct 2010
3	Add thermal resistance and characteristics	11 Feb 2011
2, 5	Add Typical Total Flux Value Add graph "Allowable Forward Current vs Duty Ratio" Update Operating Temperature	09 Mar 2011
2	Add part no: DWS-PJG-W2X-1	04 Apr 2011
2, 4, 5	Update Vf Binning Update Graph: Relative Luminous Intensity Vs Forward Current	22 Dec 2011

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:

Head Quarter

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

DOMINANT Opto Technologies Sdn. Bhd. Shanghai Representative Office

Rm 305, Hongwell International Plaza No. 1600 Zhong Shan(W) Rd, Xuhui District, Shanghai, China 200235
Tel: +86 21 5403 5655, +86 21 5403 5818 Fax: +86 21 5403 6055
E-mail: sales_china@dominant-semi.com

DOMINANT Opto Technologies Sdn. Bhd. Shenzhen Representative Office

Rm 1808, Block B, South International Plaza No 3013, Yitian Road, Futian District, Shenzhen, 518048 P.R. China
Tel: +86 755 8282 1781
E-mail: sales_china@dominant-semi.com

DOMINANT Korea Sales Office

DOMINANT Semiconductors Korea Inc.
RM 211 SUNTEAK CITY APT. 513-15 Sangdaewon-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do, 462-725, Korea
Tel: +82-31-701-5203 Fax: +82-31-701-5204
E-mail: sales_korea@dominant-semi.com

DOMINANT U.S.A Sales Office

25 Rockaway Road, 08833 Lebanon, New Jersey, USA
Tel: (908) 439-9930 Cell: (908) 343-5810 Fax: (908) 439-9929
E-mail: don.wendel@dominant-semi.com

DOMINANT Europe Sales Office

DOMINANT Semiconductors Europe GmbH
Raiffeisenstr. 38, 74906 Bad Rappenau Germany
Tel: +49 (0) 7264-89010-10 / +49 (0) 7264-89010-11 Cell: +49 173-6907370 / +49 173-6907751
Fax: +49 (0) 7264-89010-29
E-mail: gerd.wachno@dominant-semi.eu; hartmut.wettengl@dominant-semi.eu

DOMINANT India Sales Office

C-11, Vasanth Business Centre #86, TTK Road, Alwarpet Chennai - 600 018, INDIA
Tel: 91-44-42030616 / 516 Cell: 91-9444920537 Fax: 91-9444920616
E-mail: pravat.behera@dominant-semi.com

