

### Power DomiLED<sup>™</sup>

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLED<sup>™</sup> 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),
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).
- > Lighting: architecture lighting, general lighting, garden light, etc



Part Ordering Number	Chip Technology / Color	Viewing Angle°	Luminous Flux @ IF = 50mA (mlm)	Luminous Intensity @ IF = 50mA IV (mcd)
<b>DWS-EJS-VW1-1</b>	<b>AllGaP</b>	<b>120</b>	<b>2145.0 - 4200.0</b>	<b>715.0 - 1400.0</b>
• DWS-EJS-V1	Super Red, 632nm			715.0 - 900.0
• DWS-EJS-V2				900.0 - 1125.0
• DWS-EJS-W1				1125.0 - 1400.0
<b>DWR-EJS-VW1-1</b>	<b>AllGaP</b>	<b>120</b>	<b>2074.0 - 4060.0</b>	<b>715.0 - 1400.0</b>
• DWR-EJS-V1	Red, 625nm			715.0 - 900.0
• DWR-EJS-V2				900.0 - 1125.0
• DWR-EJS-W1				1125.0 - 1400.0
<b>DWA-EJS-V2W-1</b>	<b>AllGaP</b>	<b>120</b>	<b>2340.0 - 4680.0</b>	<b>900.0 - 1800.0</b>
• DWA-EJS-V2	Amber, 615nm			900.0 - 1125.0
• DWA-EJS-W1				1125.0 - 1400.0
• DWA-EJS-W2				1400.0 - 1800.0
<b>DWA-EJS-W2X-1</b>			<b>3640.0 - 7410.0</b>	<b>1400.0 - 2850.0</b>
• DWA-EJS-W2				1400.0 - 1800.0
• DWA-EJS-X1				1800.0 - 2240.0
• DWA-EJS-X2				2240.0 - 2850.0
<b>DWO-EJS-V2W-1</b>	<b>AllGaP</b>	<b>120</b>	<b>2340.0 - 4680.0</b>	<b>900.0 - 1800.0</b>
• DWO-EJS-V2	Orange, 605nm			900.0 - 1125.0
• DWO-EJS-W1				1125.0 - 1400.0
• DWO-EJS-W2				1400.0 - 1800.0
<b>DWO-EJS-W2X-1</b>			<b>3640.0 - 7410.0</b>	<b>1400.0 - 2850.0</b>
• DWO-EJS-W2				1400.0 - 1800.0
• DWO-EJS-X1				1800.0 - 2240.0
• DWO-EJS-X2				2240.0 - 2850.0
<b>DWY-EJS-V2W-1</b>	<b>AllGaP</b>	<b>120</b>	<b>2250.0 - 4500.0</b>	<b>900.0 - 1800.0</b>
• DWY-EJS-V2	Yellow, 587nm			900.0 - 1125.0
• DWY-EJS-W1				1125.0 - 1400.0
• DWY-EJS-W2				1400.0 - 1800.0
<b>DWY-EJS-W2X-1</b>			<b>3500.0 - 7125.0</b>	<b>1400.0 - 2850.0</b>
• DWY-EJS-W2				1400.0 - 1800.0
• DWY-EJS-X1				1800.0 - 2240.0
• DWY-EJS-X2				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  $\pm 11\%$ .
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.
5. Data provided for luminous flux is based on approximation.

## Wavelength Grouping

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
DWO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
DWY; Yellow	Full	585 - 594
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

Dominant wavelength is measured with an accuracy of  $\pm 1$  nm.

## Electrical Characteristics at Ta=25°C

Part Number	V <sub>f</sub> @ I <sub>f</sub> = 50mA			V <sub>r</sub> @ I <sub>r</sub> = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DWx-EJ	2.0	2.2	2.8	12

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

## V<sub>f</sub> Bining (Optional)

V <sub>f</sub> @ I <sub>f</sub> = 50mA	Forward Voltage (V)
51	2.0 ... 2.3
52	2.3 ... 2.6
53	2.6 ... 2.9

Forward voltage, V<sub>f</sub> is measured with an accuracy of  $\pm 0.1$ V.

Please consult sales and marketing for special part number to incorporate V<sub>f</sub> binning.

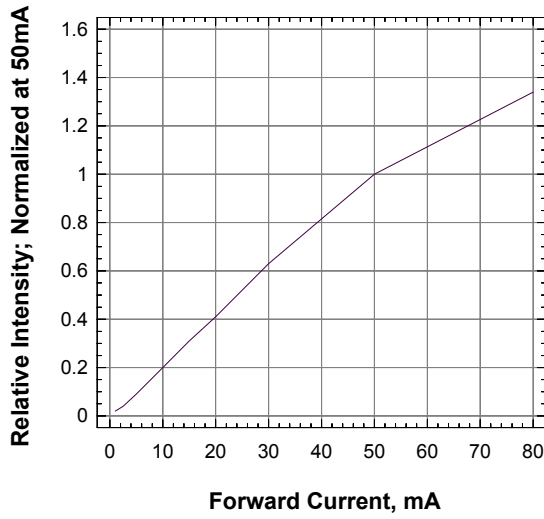
## Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	70	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005)	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 <sub>th JA</sub>	300	K/W
- Junction / solder point, R <sub>th JS</sub>	130	K/W
(Mounting on FR4 PCB, pad size ≥ 16 mm <sup>2</sup> per pad)		

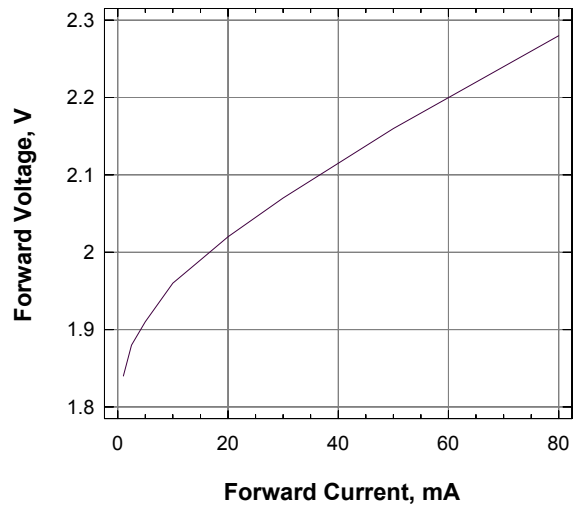
## Characteristics (Ta = 25°C)

	Symbol	Part Number	Value	Unit
Temperature coefficient of $\lambda_{dom}$ (typ) I <sub>F</sub> = 50mA; 0 °C ≤ T ≤ 100 °C	TC <sub>λ<sub>dom</sub></sub> (typ)	DWS-EJS	0.05	nm / K
		DWR-EJS	0.05	
		DWA-EJS	0.07	
		DWO-EJS	0.07	
		DWY-EJS	0.09	
Temperature coefficient of V <sub>F</sub> (typ) I <sub>F</sub> = 50mA; 0 °C ≤ T ≤ 100 °C	TC <sub>V</sub>	DWS-EJS	-2.2	mV / K
		DWR-EJS	-4.8	
		DWA-EJS	-2.4	
		DWO-EJS	-1.2	
		DWY-EJS	-1.3	
Temperature coefficient of I <sub>V</sub> (typ) I <sub>F</sub> = 50mA; 0 °C ≤ T ≤ 100 °C	TC <sub>I<sub>V</sub></sub>	DWS-EJS	-6.0	mcd / K
		DWR-EJS	-7.4	
		DWA-EJS	-11.5	
		DWO-EJS	-15.7	
		DWY-EJS	-19.0	

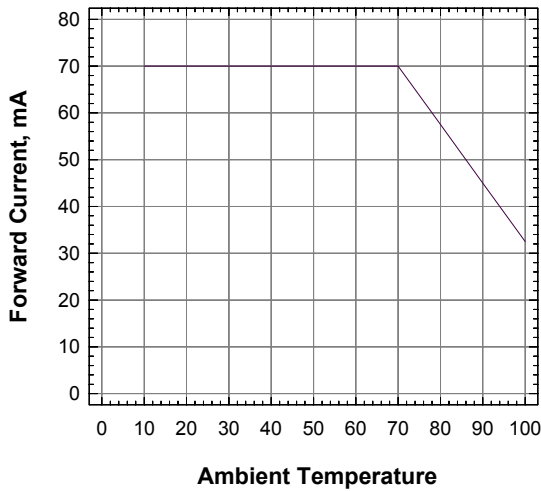
**Relative Luminous Intensity Vs Forward Current**



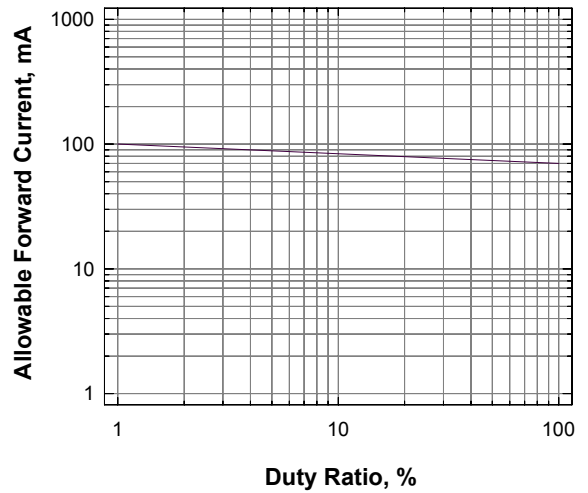
**Forward Current Vs Forward Voltage**



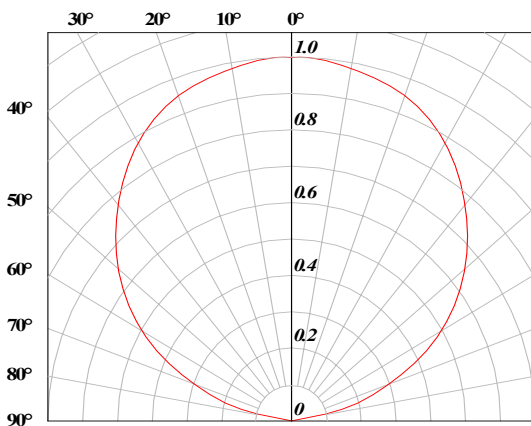
**Maximum Current Vs Temperature**



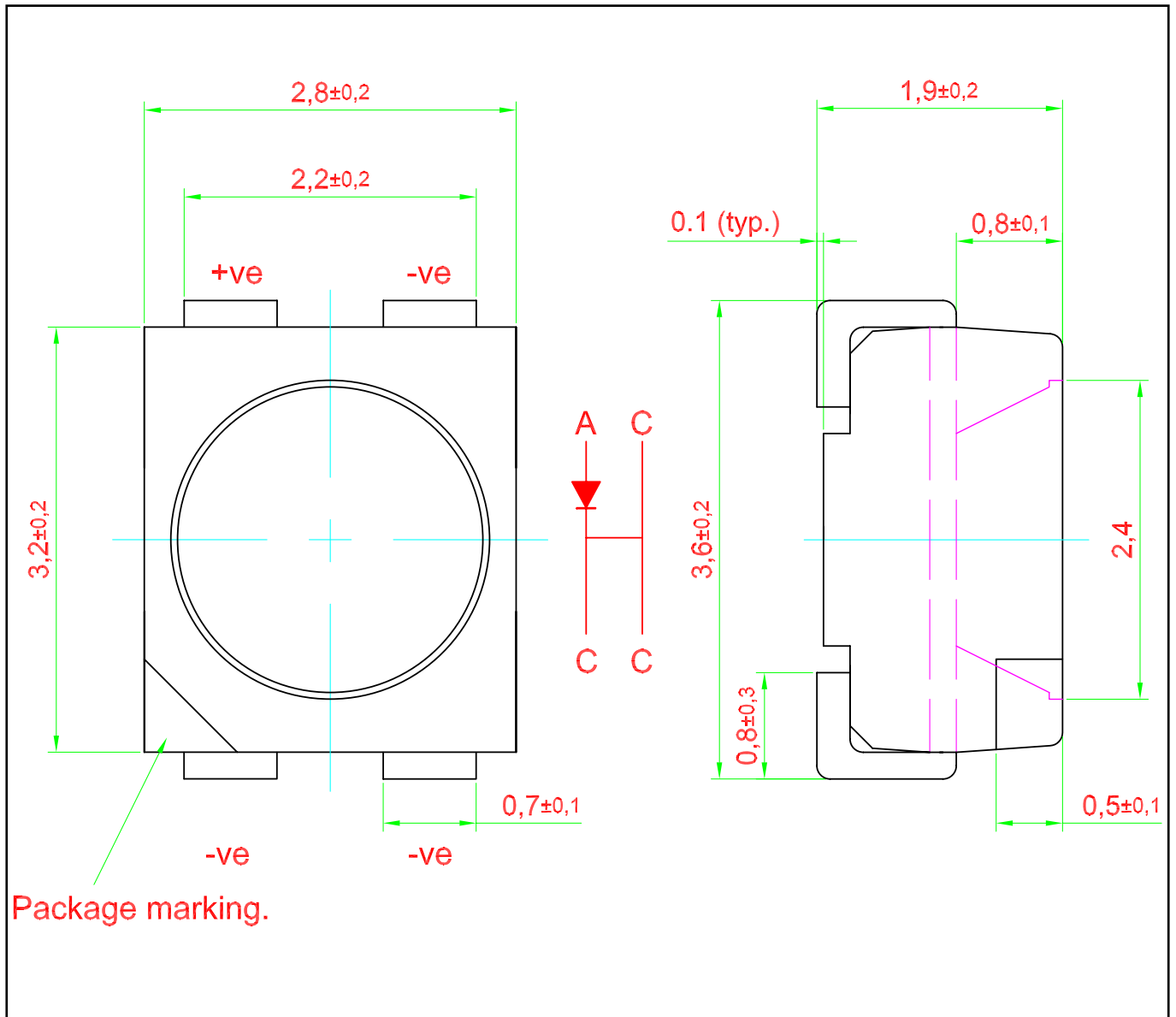
**Allowable Forward Current Vs Duty Ratio (Ta=25 Deg C, Tp<10us)**



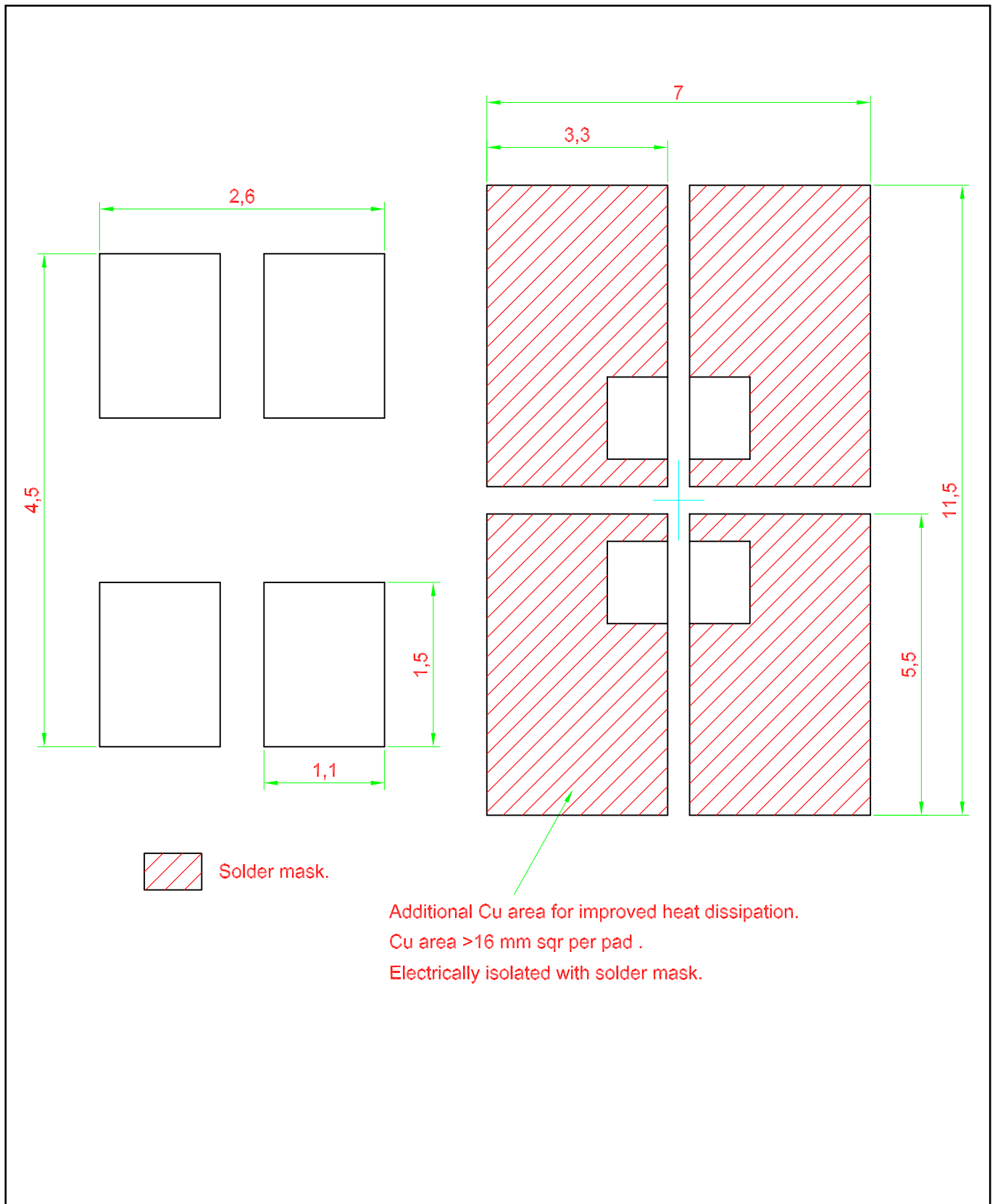
**Radiation Pattern**



**DomiLED™ • AllnGaP : DWx-EJS Package Outlines**

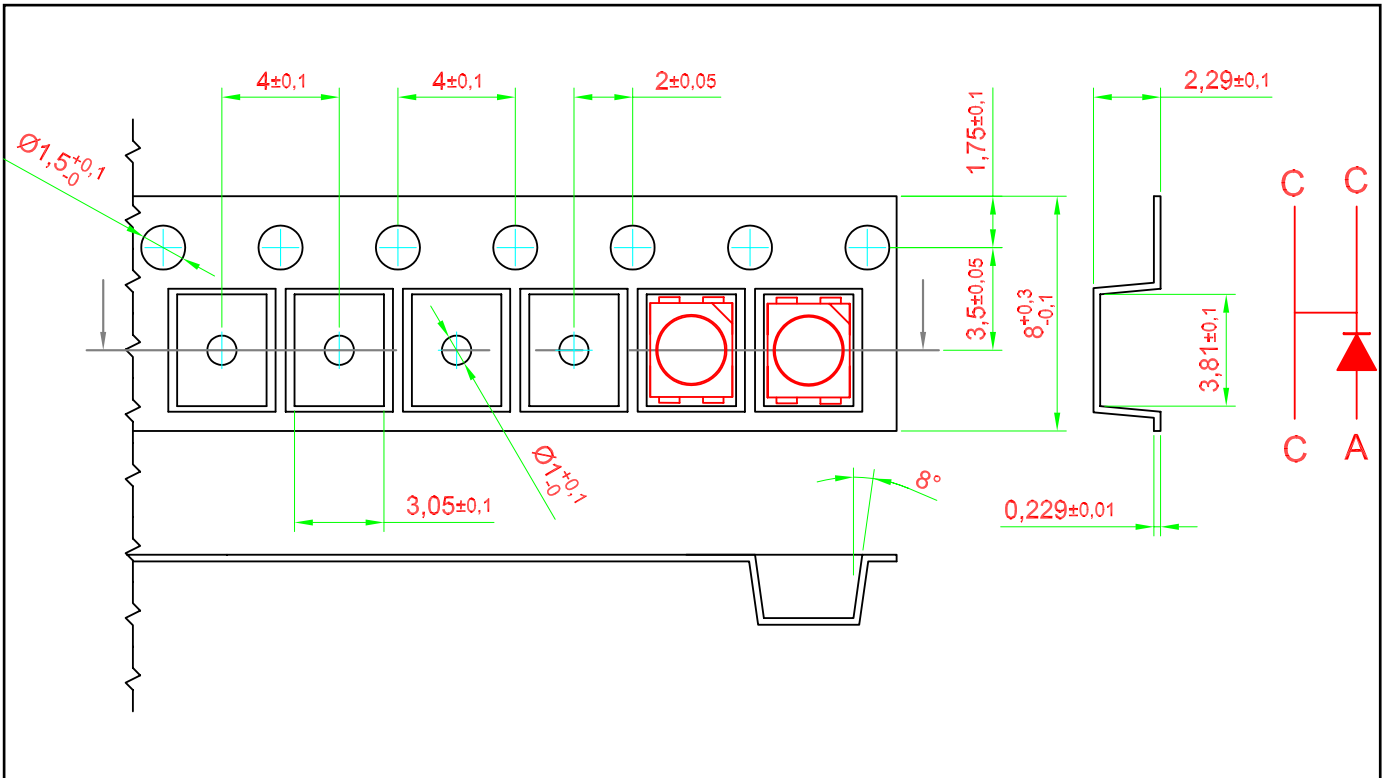


### Recommended Solder Pad



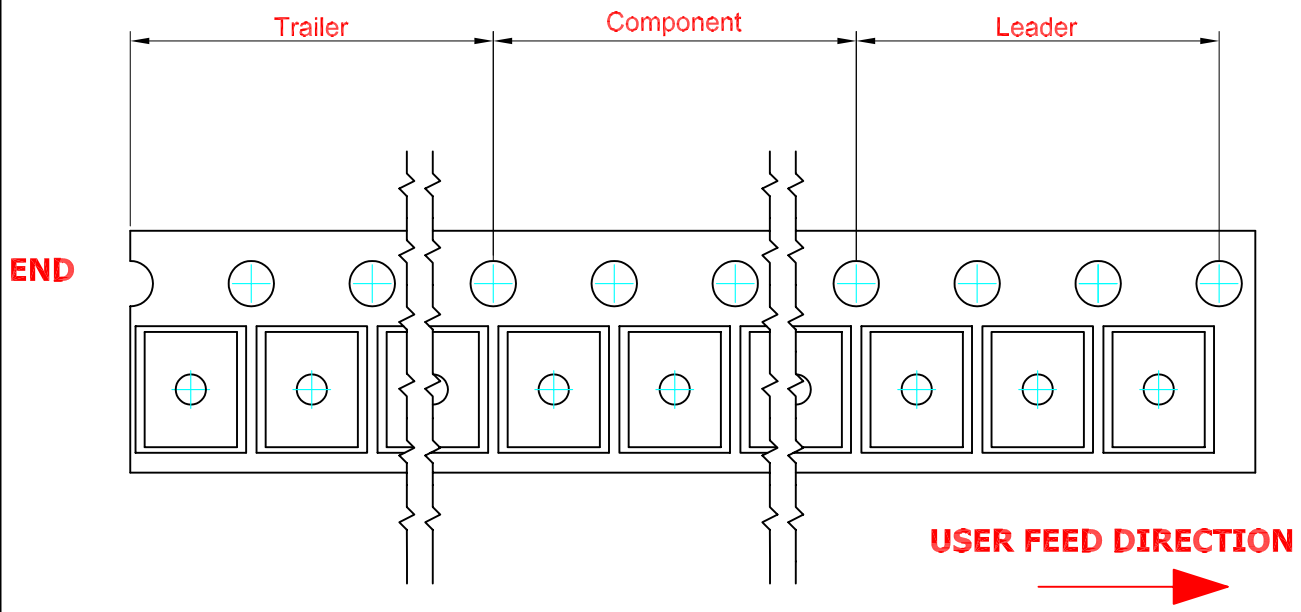
**Taping and orientation**

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



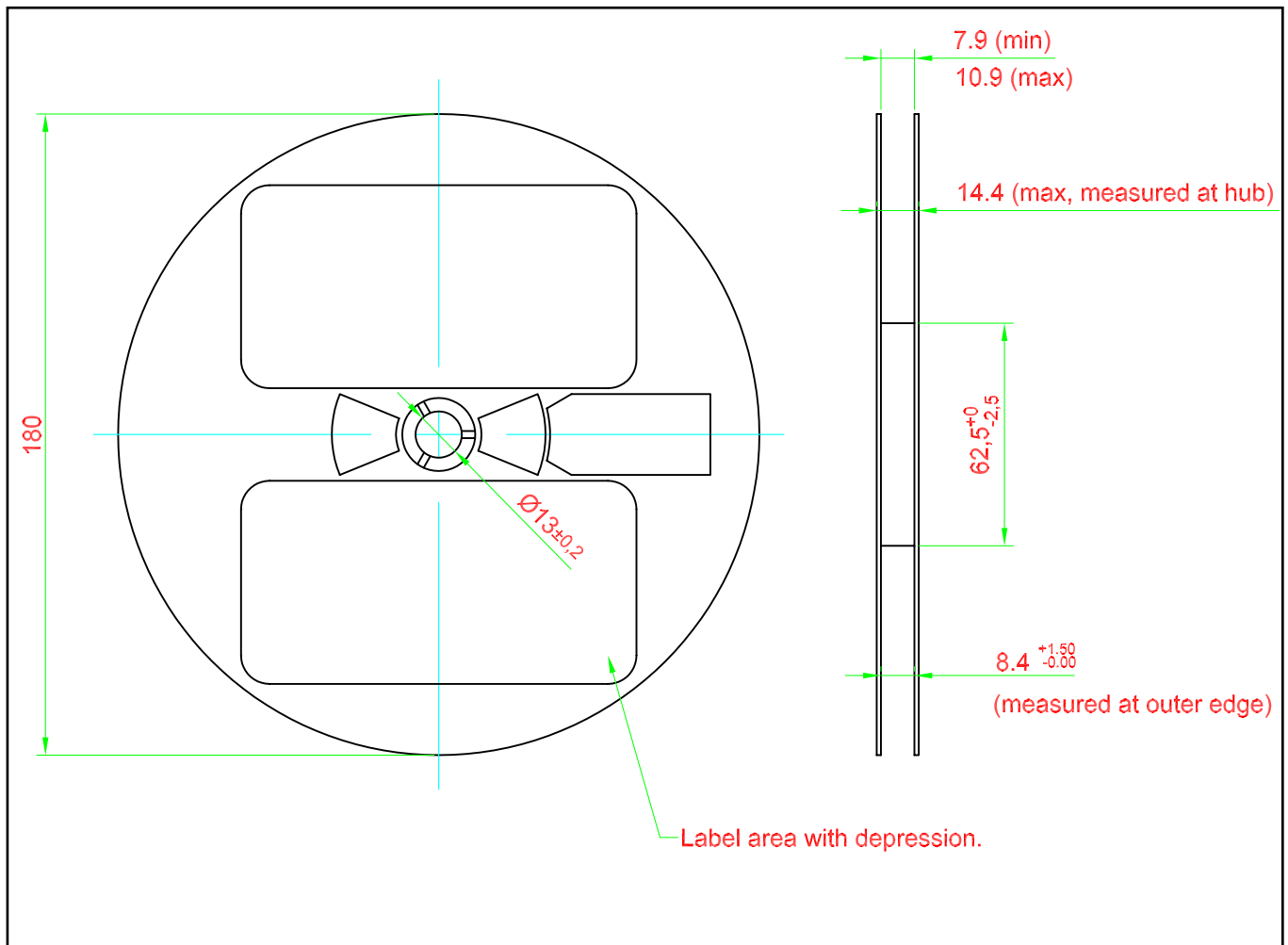
200 mm min. for Ø180 reel.  
200 mm min. for Ø330 reel.

480 mm min. for Ø180 reel.  
960 mm min. for Ø330 reel.

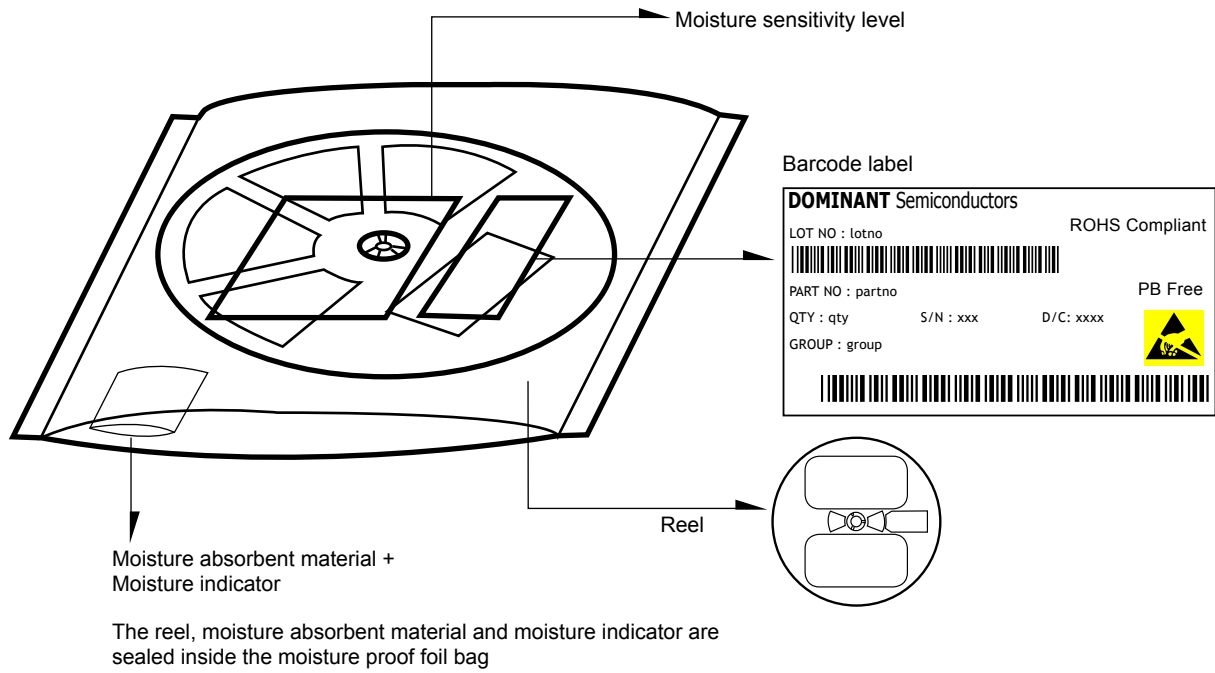




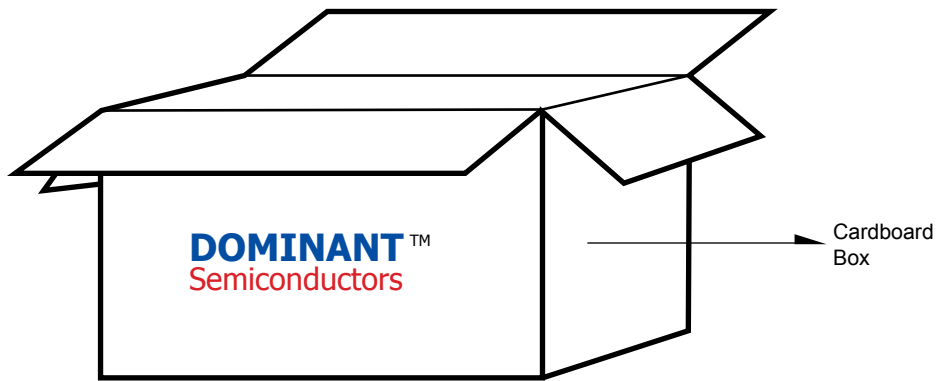
### Packaging Specification



**Packaging Specification**



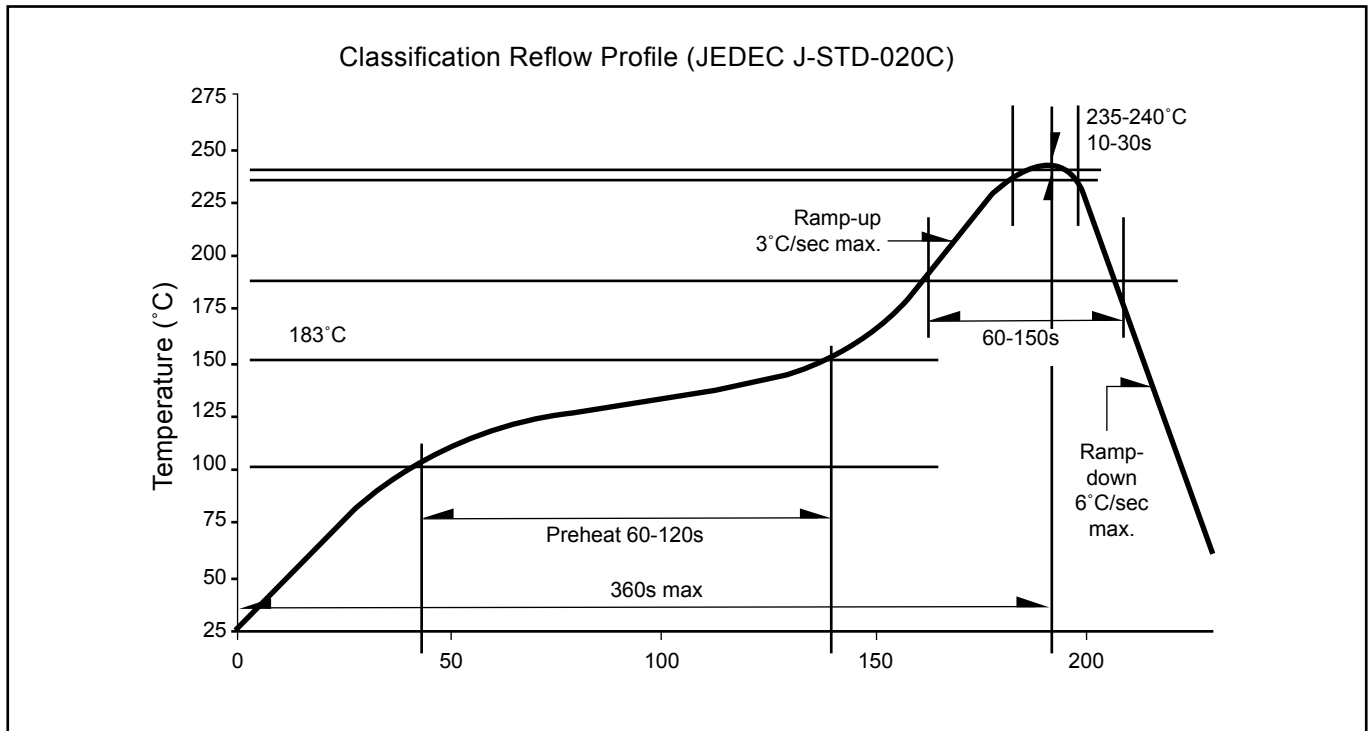
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



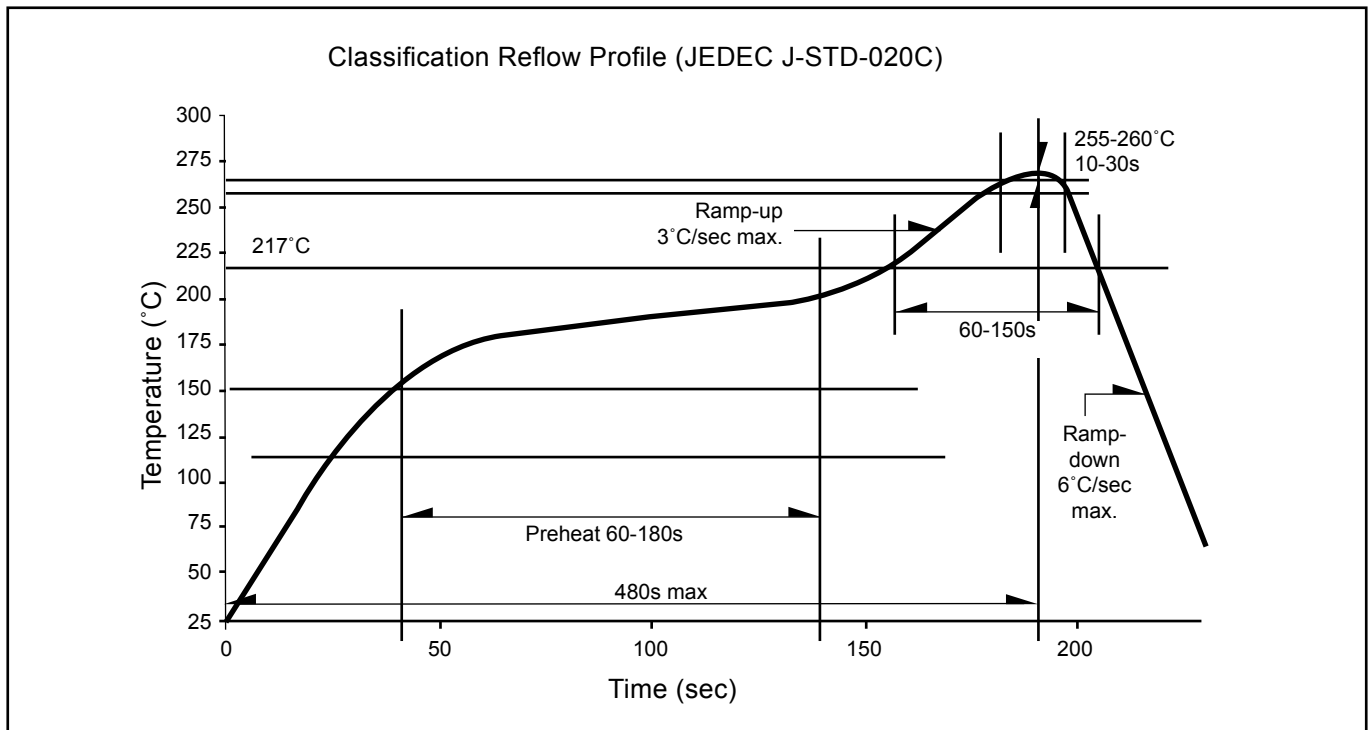
**For Power DomiLED™**

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	110,000 MAX

**Recommended Sn-Pb IR-Reflow Soldering Profile**



**Recommended Pb-free Soldering Profile**



**Revision History**

Page	Subjects	Date of Modification
-	New Format	29 Sept 2005
2	Add New Part Number : DWO-EJS-V2W-1 DWO-EJS-W2X-1 DWA-EJS-W2X-1 DWY-EJS-W2X-1	03 Jan 2007
4	- Add Thermal Resistance - Add Characteristics table	25 June 2007
5	Add Allowable Forward Current Vs Duty Ratio Graph	25 June 2007

**NOTE**

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## 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>.

### **Please contact us for more information:**

#### Head Quarter

DOMINANT Semiconductors 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](mailto:sales@dominant-semi.com)

#### DOMINANT China Sales Office

DOMINANT Semiconductors (Shenzhen) Co. Ltd.  
24BC Newbaohui Building, No. 1007 West Nanhai Blvd., Nanshan, Shenzhen, China P.C. 518054  
Tel: +86 (755) 86031785 / +86 (755) 86031786 Fax: +86 (755) 86031789  
E-mail: [sales\\_china@dominant-semi.com](mailto:sales_china@dominant-semi.com)

#### DOMINANT Korea Sales Office

DOMINANT Semiconductors Korea Inc.  
902 Sunil Technopia, 440 Sangdaewon-dong, Jungwon-gu, Sungnam-si, Kyunggi-do, Korea 462726  
Tel: 82-31-777-3978 Fax: 82-31-777-3976  
E-mail: [sales\\_korea@dominant-semi.com](mailto:sales_korea@dominant-semi.com)

