

### **DomiLED**™

Synonymous with function and performance, the DomiLED™ series is perfectly suited for a variety of cross-industrial applications due to its small package outline, durability and superior brightness.



### **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 both IR reflow soldering.
- > Environmental friendly; RoHS compliance.



### **Applications:**

- > Automotive: Interior applications, eg: switches, telematics, climate control system, dashboard, etc
- > Signage: full colour display video notice board, signage, special effect lighting.
- > Industrial: white goods (eg: Oven, microwave, etc.), light bar, illuminated advertising.



**Optical Characteristics at Tj=25°C**

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
DRS-NJS-TU1-1	Super Red, 632nm	120	285.0	355.0	560.0
DRS-NJS-T2U-1	Super Red, 632nm	120	355.0	450.0	715.0
DRS-NJS-UV1-1	Super Red, 632nm	120	450.0	560.0	900.0
DRR-NJS-T2U-1	Red, 625nm	120	355.0	450.0	715.0
DRA-NJS-UV1-1	Amber, 615nm	120	450.0	560.0	900.0
DRO-NJS-UV1-1	Orange, 605nm	120	450.0	560.0	900.0
DRY-NJS-UV1-1	Yellow, 587nm	120	450.0	560.0	900.0

**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 = 20mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DRx-NJS	1.8	2.1	2.6	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	50	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.10)	100	mA
Reverse voltage	12	V
ESD threshold (HBM)	2	kV
LED junction temperature	120	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	80	mW
Thermal resistance		
- Junction / ambient, R <sub>th JA</sub>	380	K/W
- Junction / solder point, R <sub>th JS</sub>	280	K/W
(Mounting on FR4 PCB, pad size ≥ 16 mm <sup>2</sup> per pad)		

**Characteristics**

	Symbol	Part Number	Value	Unit
Temperature coefficient of $\lambda_{dom}$ (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_{\lambda_{dom}}$ (typ)	DRS-NJS	0.06	nm / K
		DRR-NJS	0.07	
		DRA-NJS	0.07	
		DRO-NJS	0.08	
		DRY-NJS	0.09	
Temperature coefficient of $V_F$ (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_V$	DRS-NJS	-3.9	mV / K
		DRR-NJS	-2.3	
		DRA-NJS	-2.2	
		DRO-NJS	-2.0	
		DRY-NJS	-1.9	
Temperature coefficient of $I_V$ (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_{I_V}$	DRS-NJS	-3.0	mcd / K
		DRR-NJS	-3.7	
		DRA-NJS	-4.2	
		DRO-NJS	-5.6	
		DRY-NJS	-6.7	

**Wavelength Grouping at  $T_j=25^\circ\text{C}$**

Color	Group	Wavelength distribution (nm)
DRS; Super Red	Full	625 - 640
DRR; Red	Full	620 - 630
DRA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
DRO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
DRY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

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

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

Brightness Group	Luminous Intensity IV (mcd)
T1	285.0...355.0
T2	355.0...450.0
U1	450.0...560.0
U2	560.0...715.0
V1	715.0...900.0

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

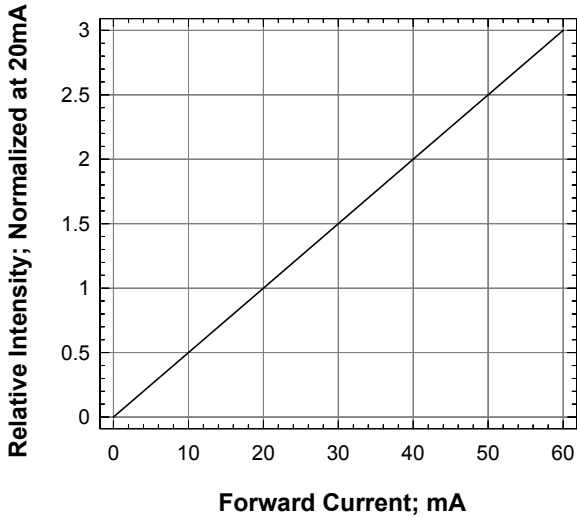
**Vf Bining (Optional)**

Vf @ If = 20mA	
V1	1.80 ... 1.95
V2	1.95 ... 2.10
V3	2.10 ... 2.25
V4	2.25 ... 2.40
V5	2.40 ... 2.55
V6	2.55 ... 2.70

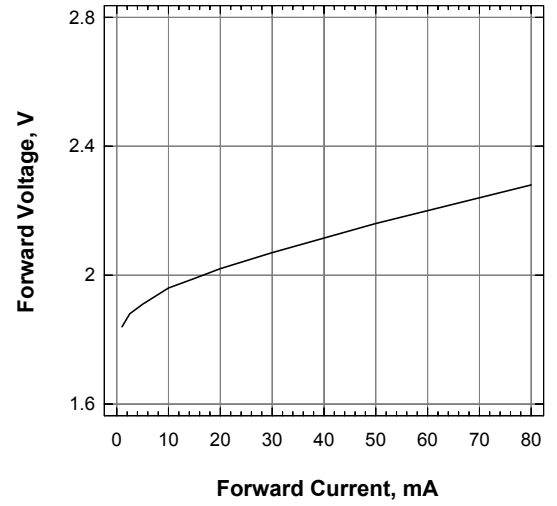
Forward voltage, Vf is measured with an accuracy of ± 0.1V.

Please consult sales and marketing to incorporate special part number to incorporate Vf binning.

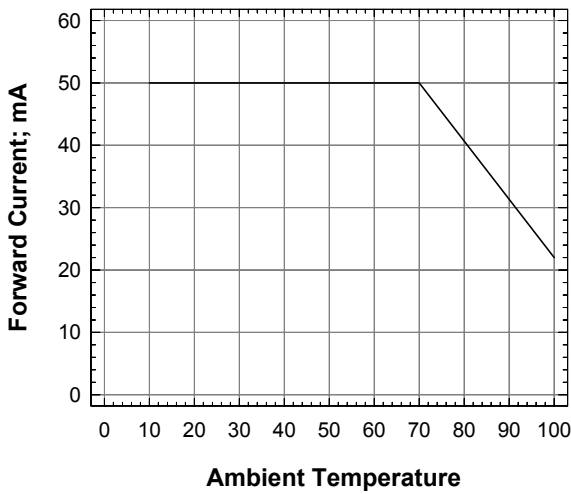
**Relative Intensity Vs Forward Current**



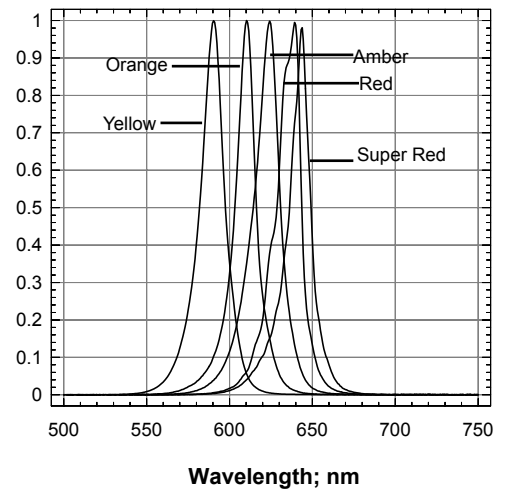
**Forward Voltage Vs Forward Current**



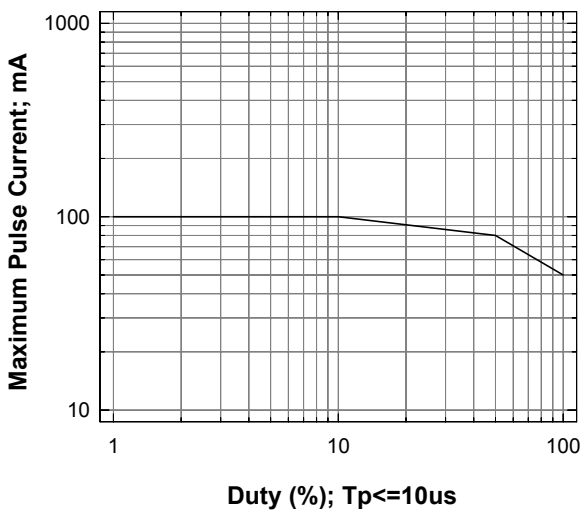
**Forward Current Vs Ambient Temperature**



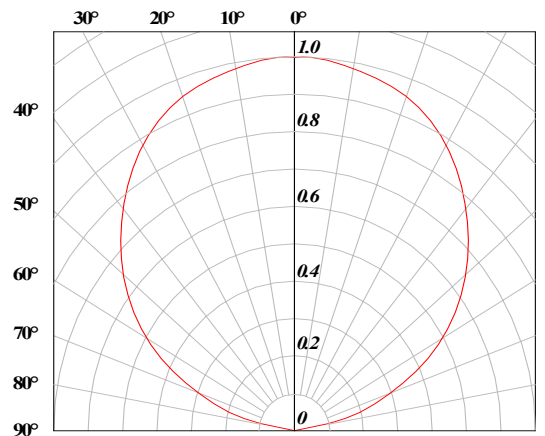
**Relative Intensity Vs Wavelength**



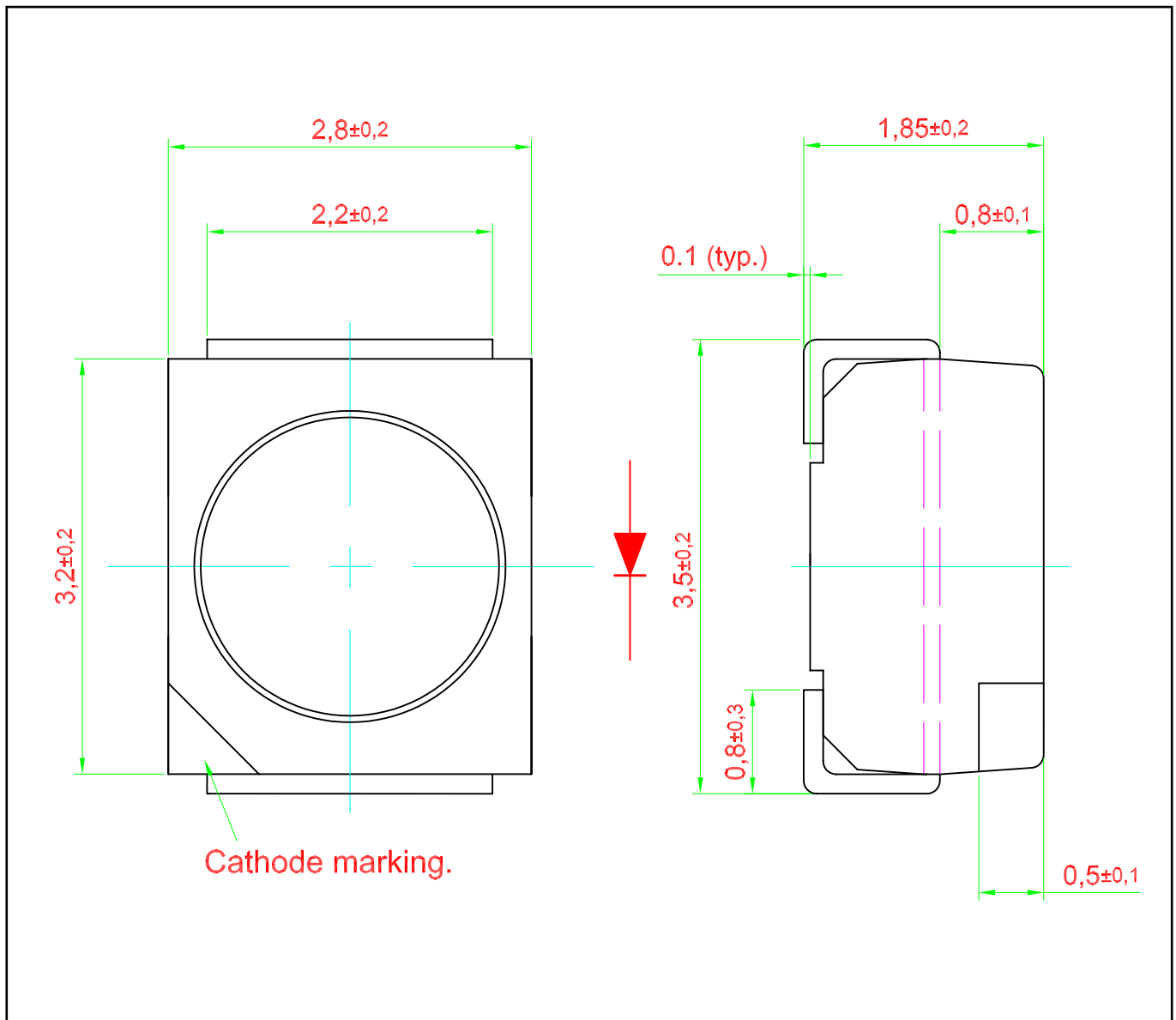
**Maximum Pulse Current Vs Duty Cycle**



**Radiation Pattern**



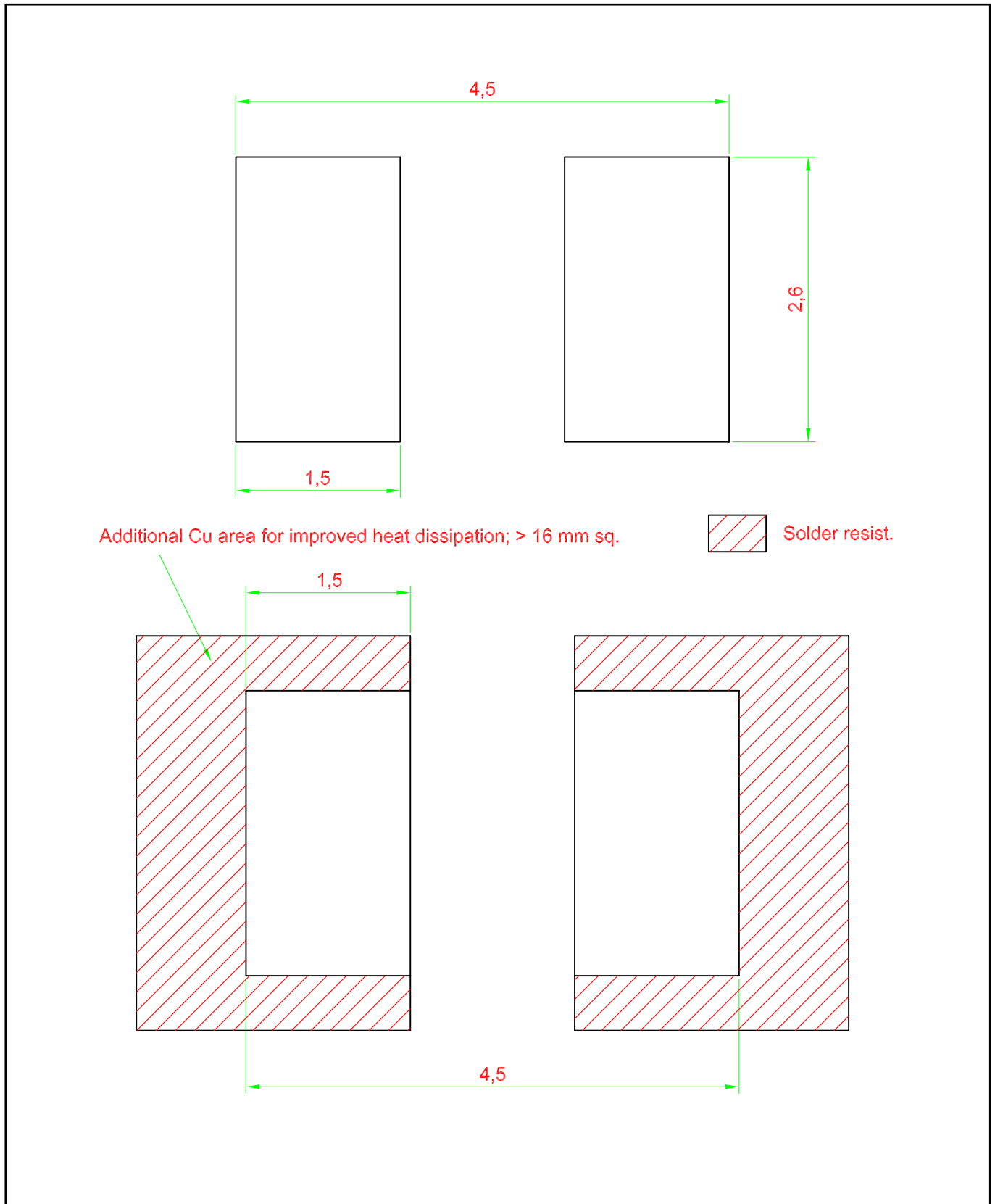
**DomiLED™ • AllnGaP : DRx-NJS Package Outlines**



**Material**

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

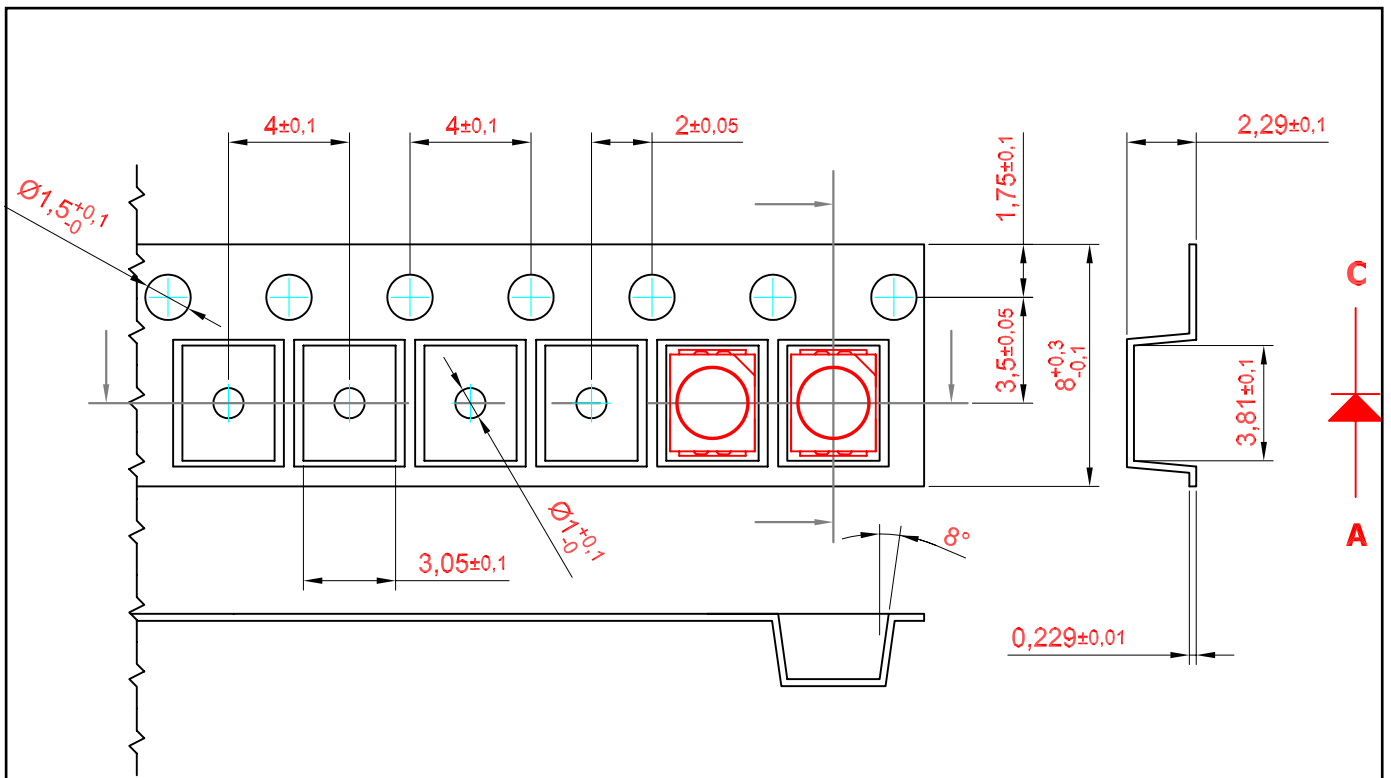
### Recommended Solder Pad





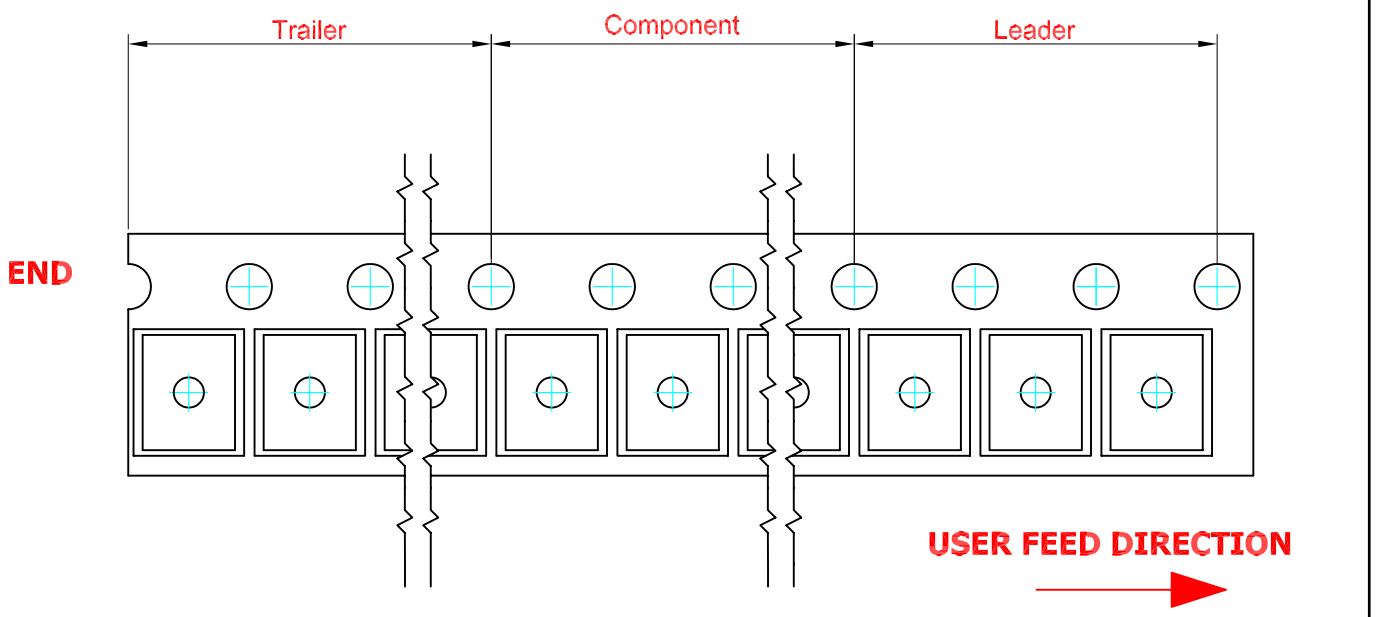
**Taping and orientation**

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

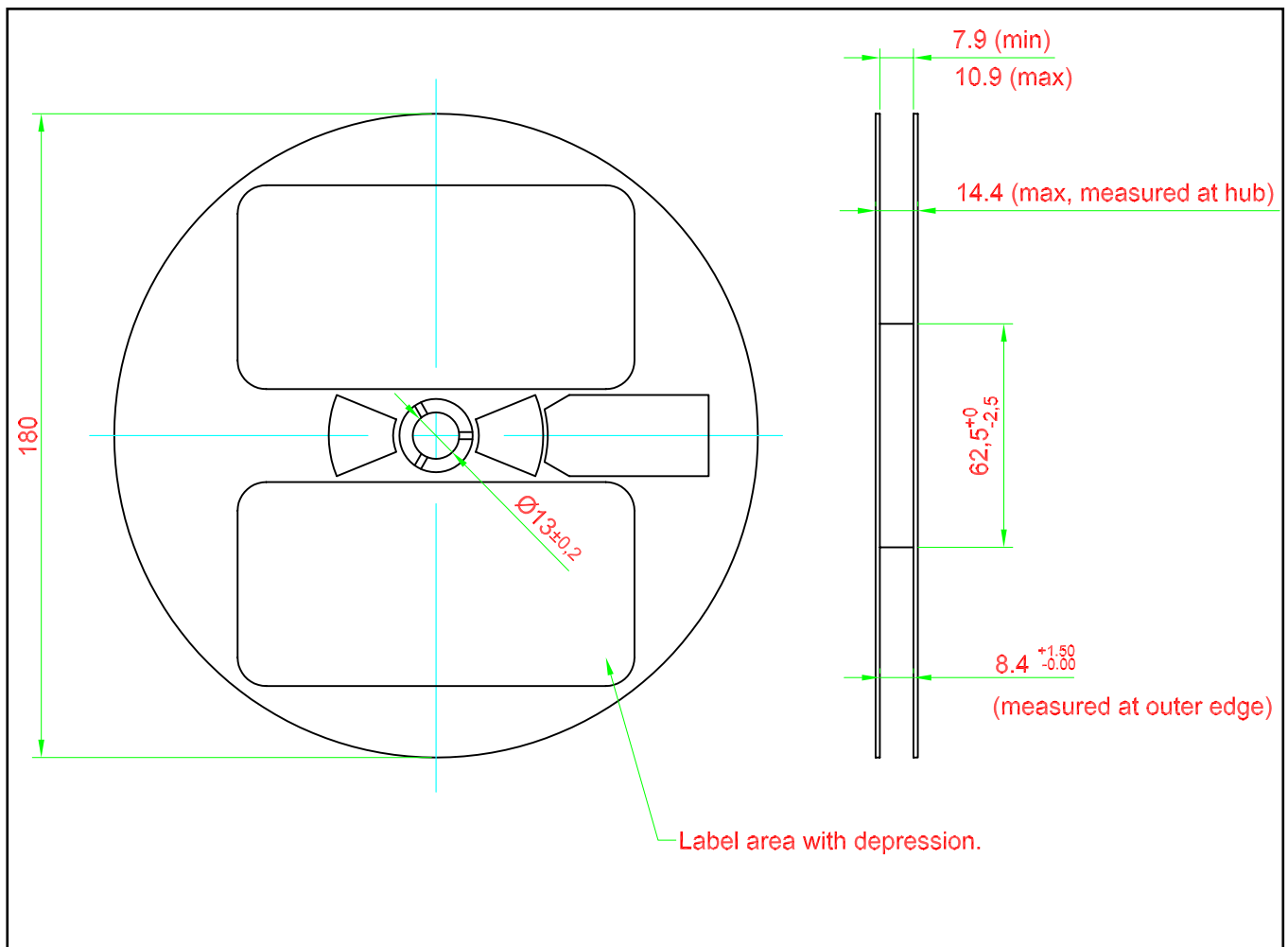


200 mm min. for  $\varnothing 180$  reel.  
 200 mm min. for  $\varnothing 330$  reel.

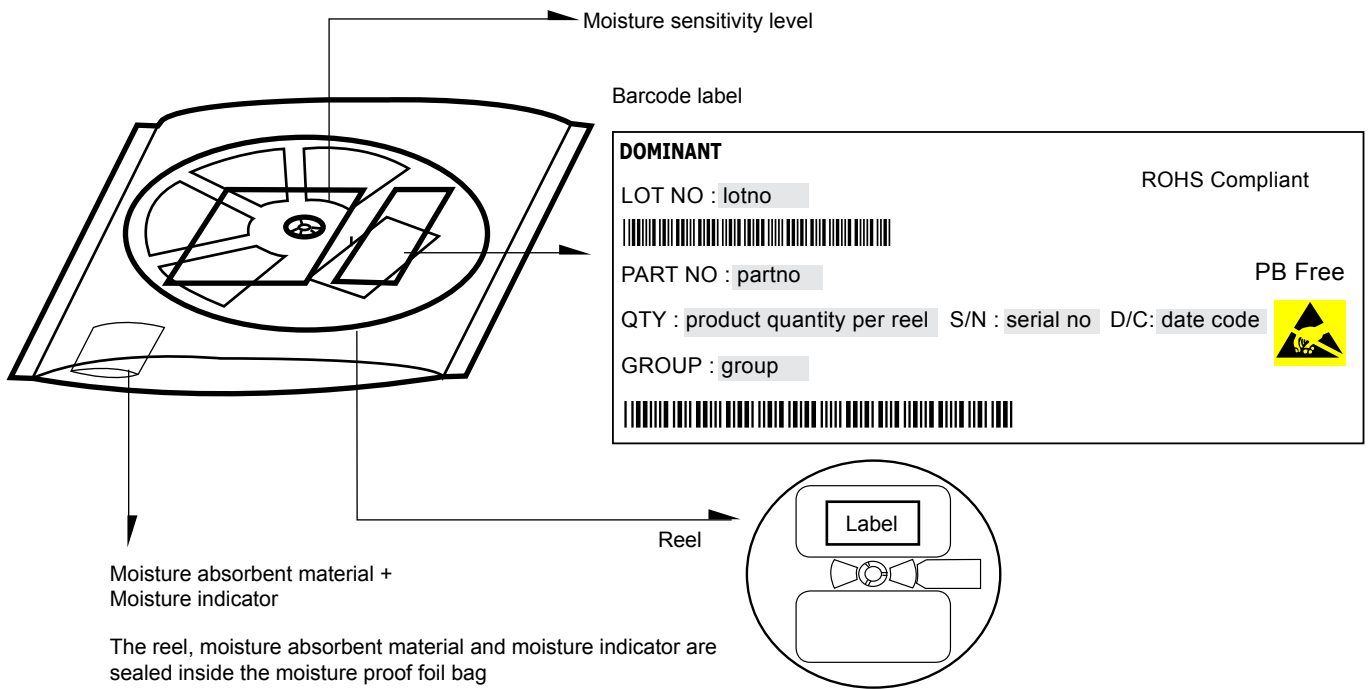
480 mm min. for  $\varnothing 180$  reel.  
 960 mm min. for  $\varnothing 330$  reel.



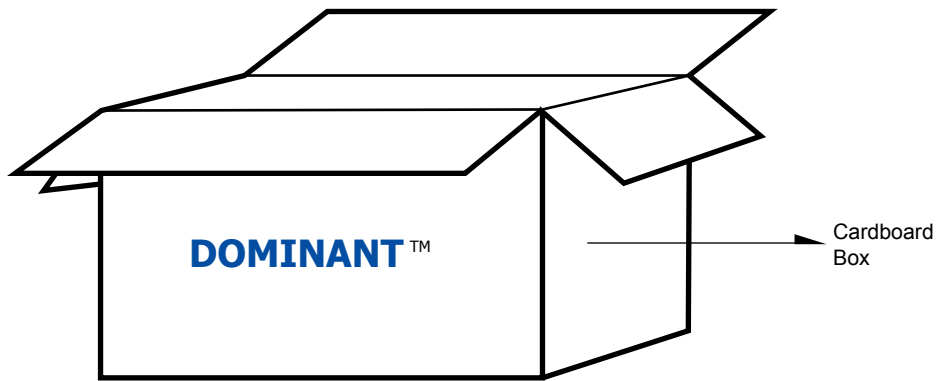
### Packaging Specification



**Packaging Specification**



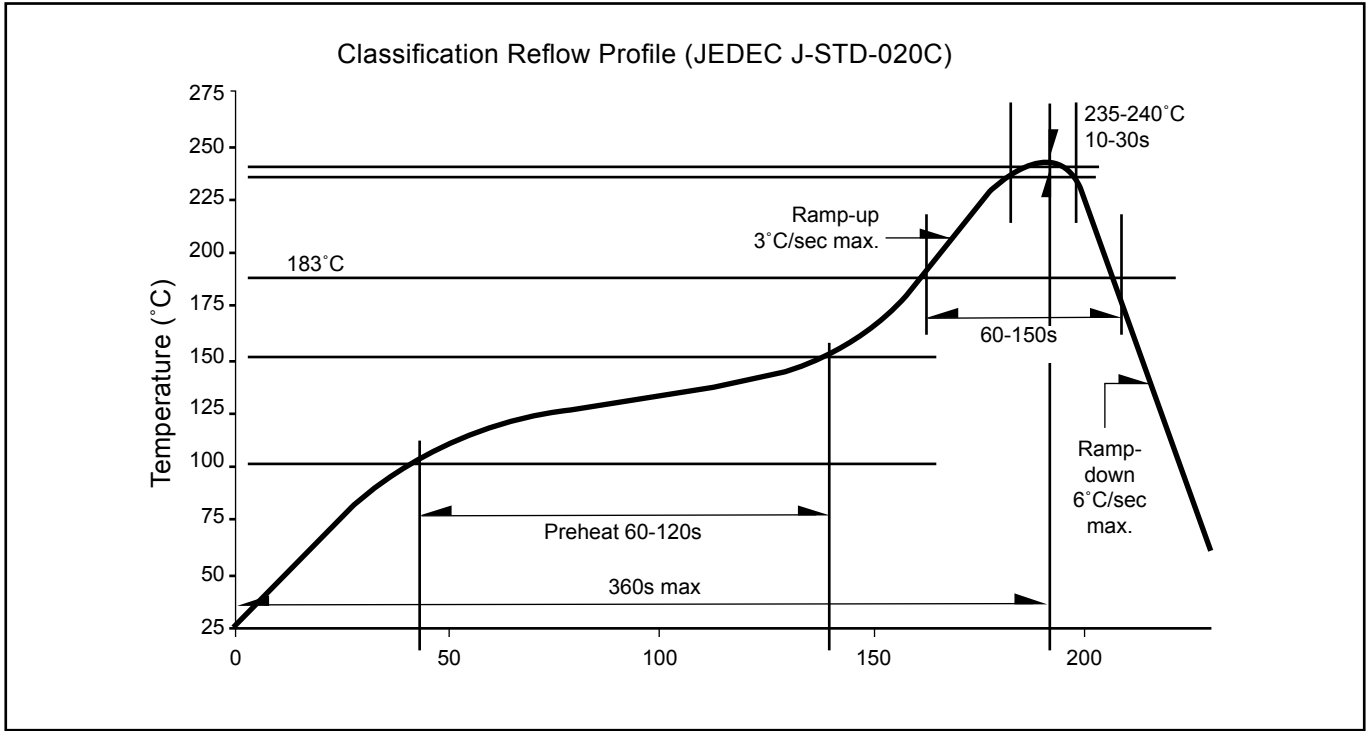
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



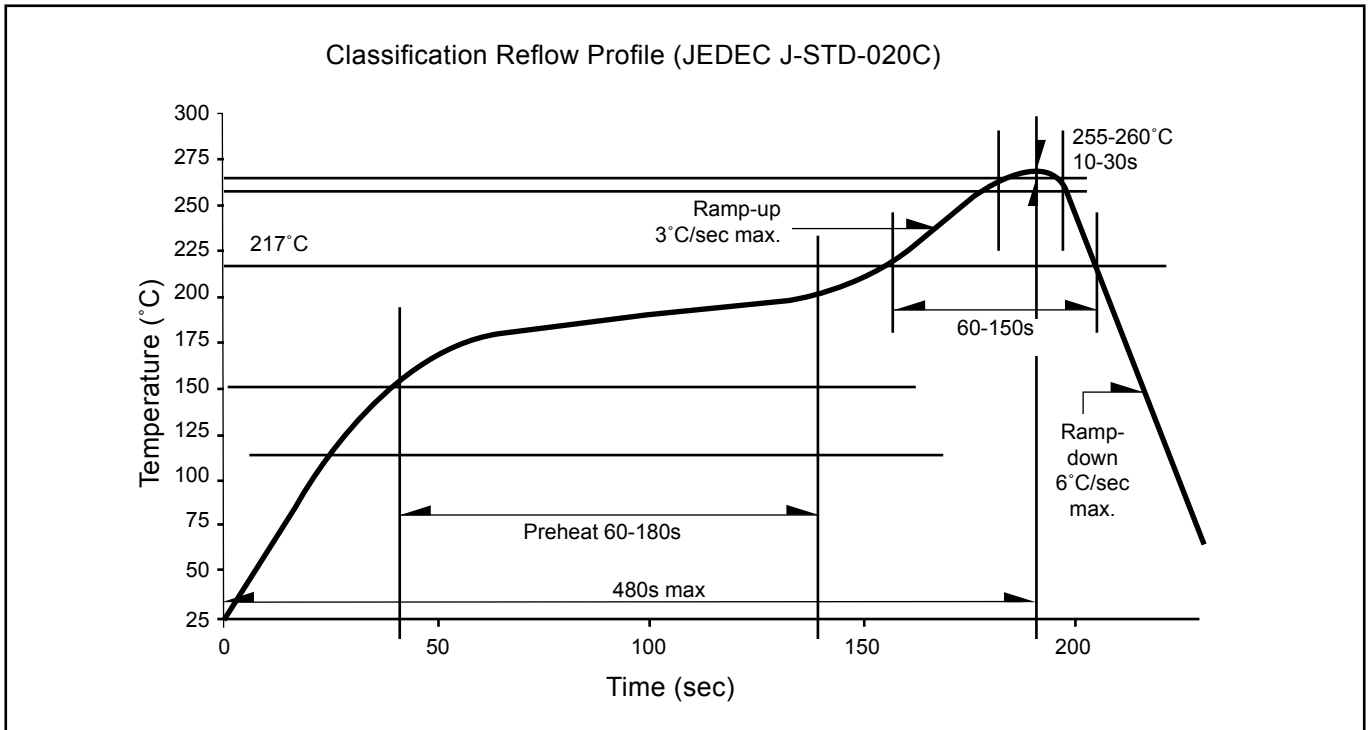
**For DomiLED™**

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**

<b>Page</b>	<b>Subjects</b>	<b>Date of Modification</b>
-	Initial Release	12 May 2008
2	Add new partno: DRO-NJS-UV1-1; DRY-NJS-UV1-1	09 Jun 2008
3	Update wavelength group	20 Oct 2008
2	Print Error on DC Forward Current	19 Jan 2009
2	- Update Max Current to 50mA - Update Max Current Vs Ambient Temperature	09 Jul 2009
4	Add Maximum Pulse Current Vs Duty Ratio	22 Jul 2009
4	Add Vf binning	30 Oct 2009
2, 3	Update Thermal Resistance and Characteristics	18 Mar 2010
2	Add new partno: DRS-NJS-T2U-1	26 Aug 2010
2	Add new partno: DRS-NJS-UV1-1	29 Dec 2010
5	Typo error on Vf Binning	08 Apr 2011

**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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