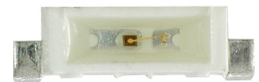


DomiLED[™]

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.
- > Designed for sideway illumination.
- > 120° viewing angle.
- > Small package outline.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Compliance to automotive standard; AEC-Q101.
- > Superior corrosion resistant.



Applications:

- > Automotive:
Interior applications, eg: switches, telematics, climate control system, dash board, etc.
- > Consumer Appliances: Backlighting illumination as in PDAs, LCD TV.
- > Lighting: channel light.



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
DSS-NSS-T2U-1	Super red, 632nm	120	355.0	420.0	715.0
DSR-NSS-T2U-1	Red, 625nm	120	355.0	420.0	715.0
DSA-NSS-UV1-1	Amber, 615nm	120	450.0	600.0	900.0
DSO-NSS-UV1-1	Orange, 605nm	120	450.0	600.0	900.0
DSY-NSS-UV1-1	Yellow, 587nm	120	450.0	600.0	900.0

NOTE

1. All part number above comes in a quantity of 2500 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.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 20mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DSx-NSS	1.8	2.1	2.6	12

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	30	mA
Peak pulse current	200	mA
Reverse voltage	12	V
ESD threshold (HBM)	2	kV
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	80	mW
Thermal resistance		
- Junction / ambient, R _{th JA}	630	K/W
- Junction / solder point, R _{th JS}	350	K/W
(Mounting on FR4 PCB, pad size >= 5 mm ² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	$TC_{\lambda_{dom}}$ (typ)	DSS-NSS	0.06	nm / K
		DSR-NSS	0.07	
		DSA-NSS	0.07	
		DSO-NSS	0.08	
		DSY-NSS	0.09	
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	TC_V	DSS-NSS	-3.9	mV / K
		DSR-NSS	-2.3	
		DSA-NSS	-2.2	
		DSO-NSS	-2.0	
		DSY-NSS	-1.9	
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 85\text{ }^\circ\text{C}$	TC_{I_V}	DSS-NSS	-0.6	% / K
		DSR-NSS	-0.6	
		DSA-NSS	-0.7	
		DSO-NSS	-0.9	
		DSY-NSS	-1.1	

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

Color	Group	Wavelength distribution (nm)
DSS; Super red	Full	625 - 640
DSR; Red	Full	620 - 630
DSA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
DSO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
DSY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

Dominant wavelength is measured with an accuracy $\pm 1\text{nm}$

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity IV (mcd)
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%.

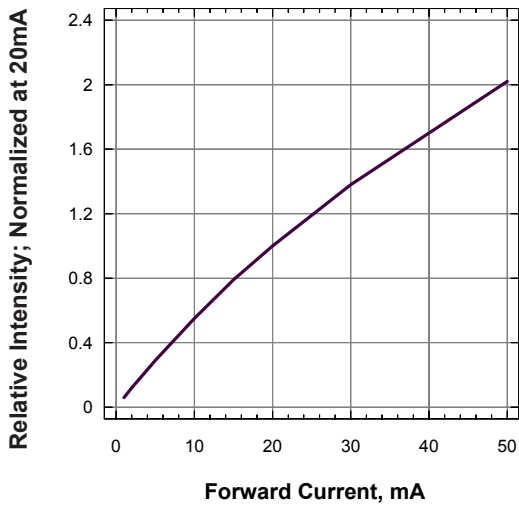
Vf Bining (Optional)

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

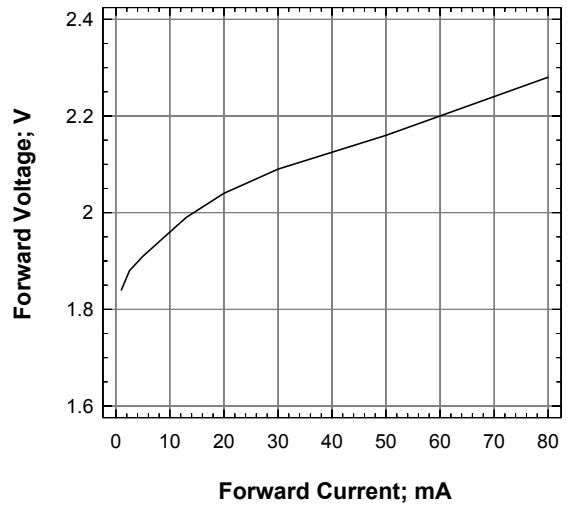
Forward voltage, Vf is measured with an accuracy of ± 0.1V.

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

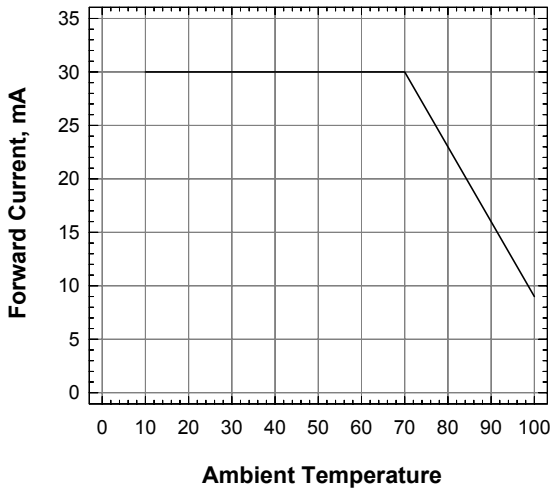
Relative Luminous Intensity Vs Forward Current



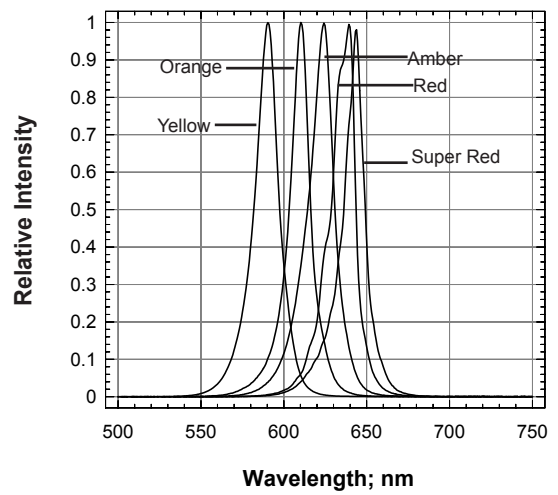
Forward Voltage Vs Forward Current



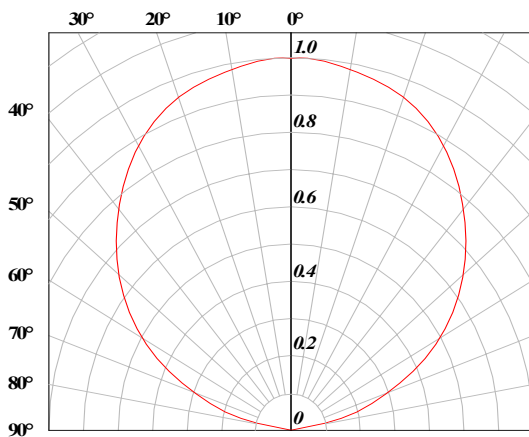
Maximum Forward Current Vs Ambient Temperature



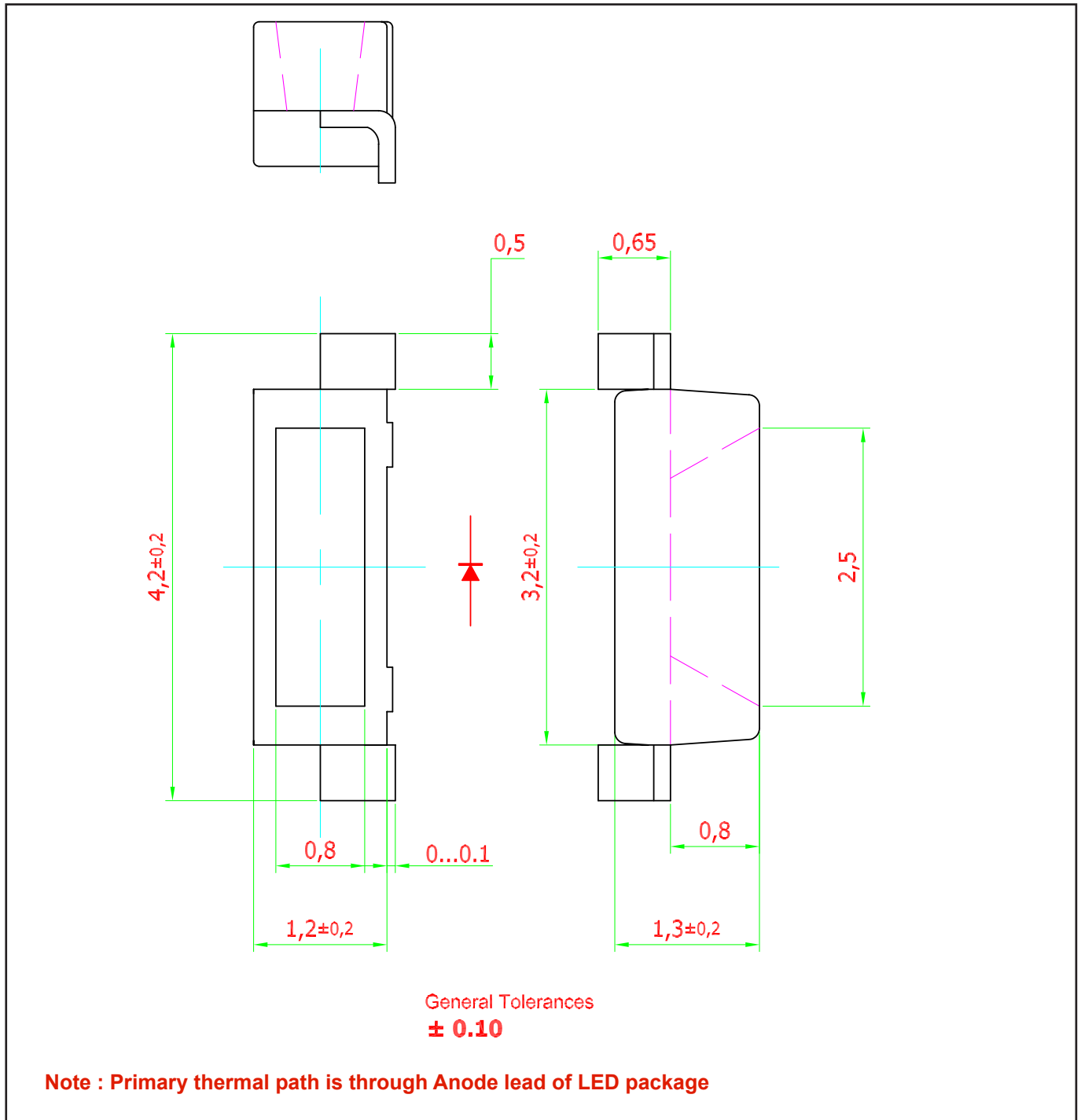
Relative Intensity Vs Wavelength



Radiation Pattern



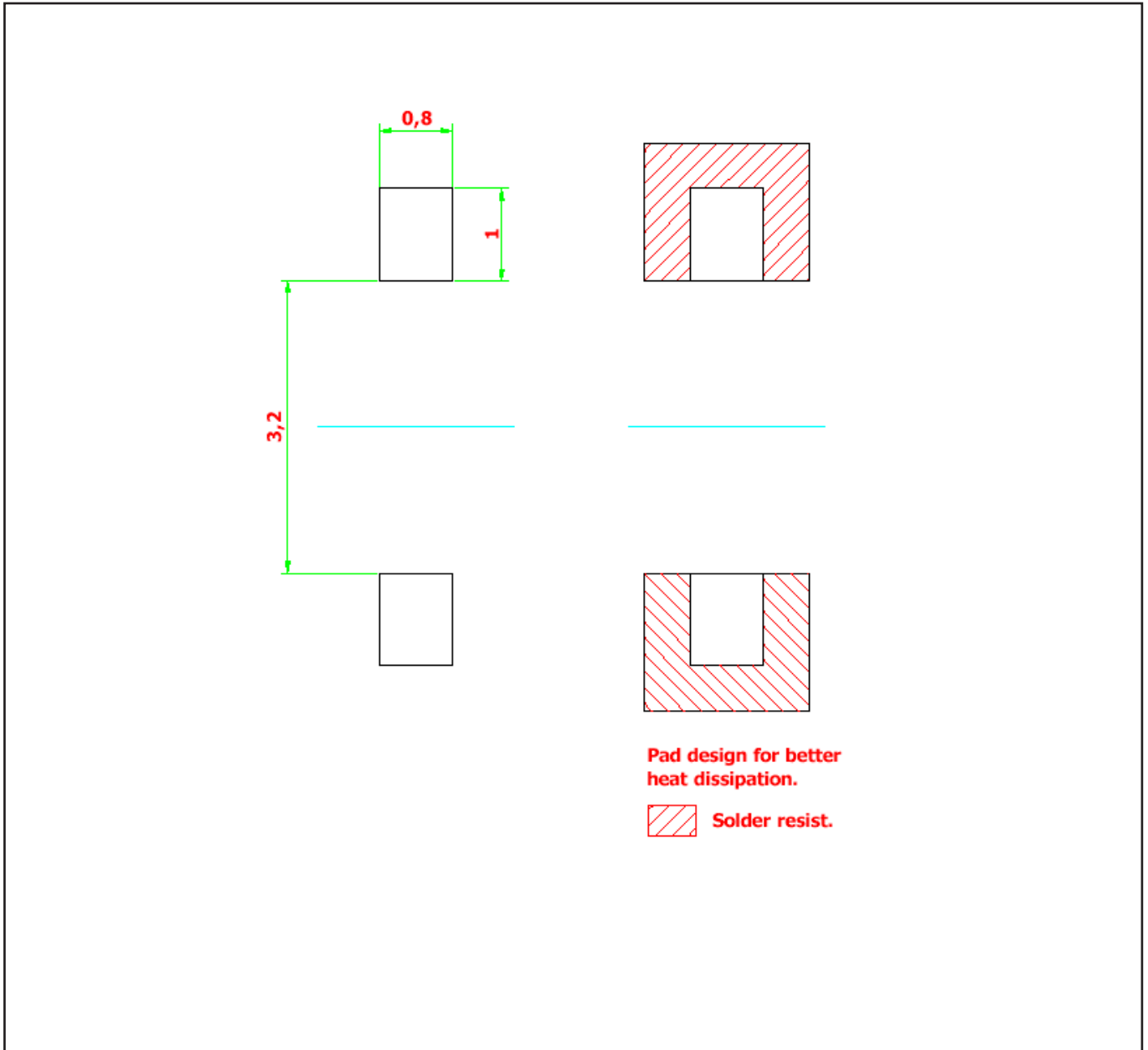
DomiLED™ • AllnGaP : DSx-NSS Package Outlines



Material

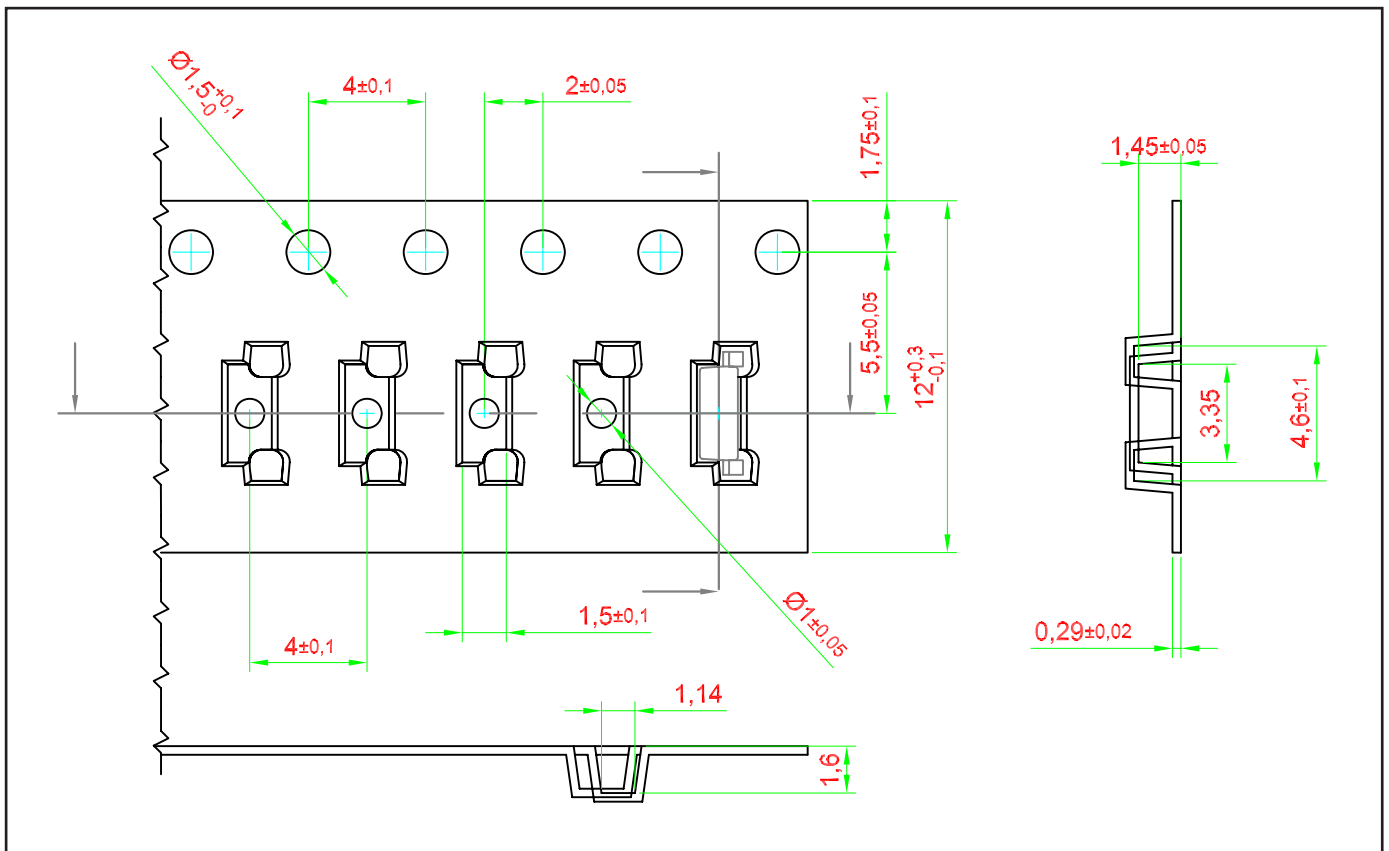
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad

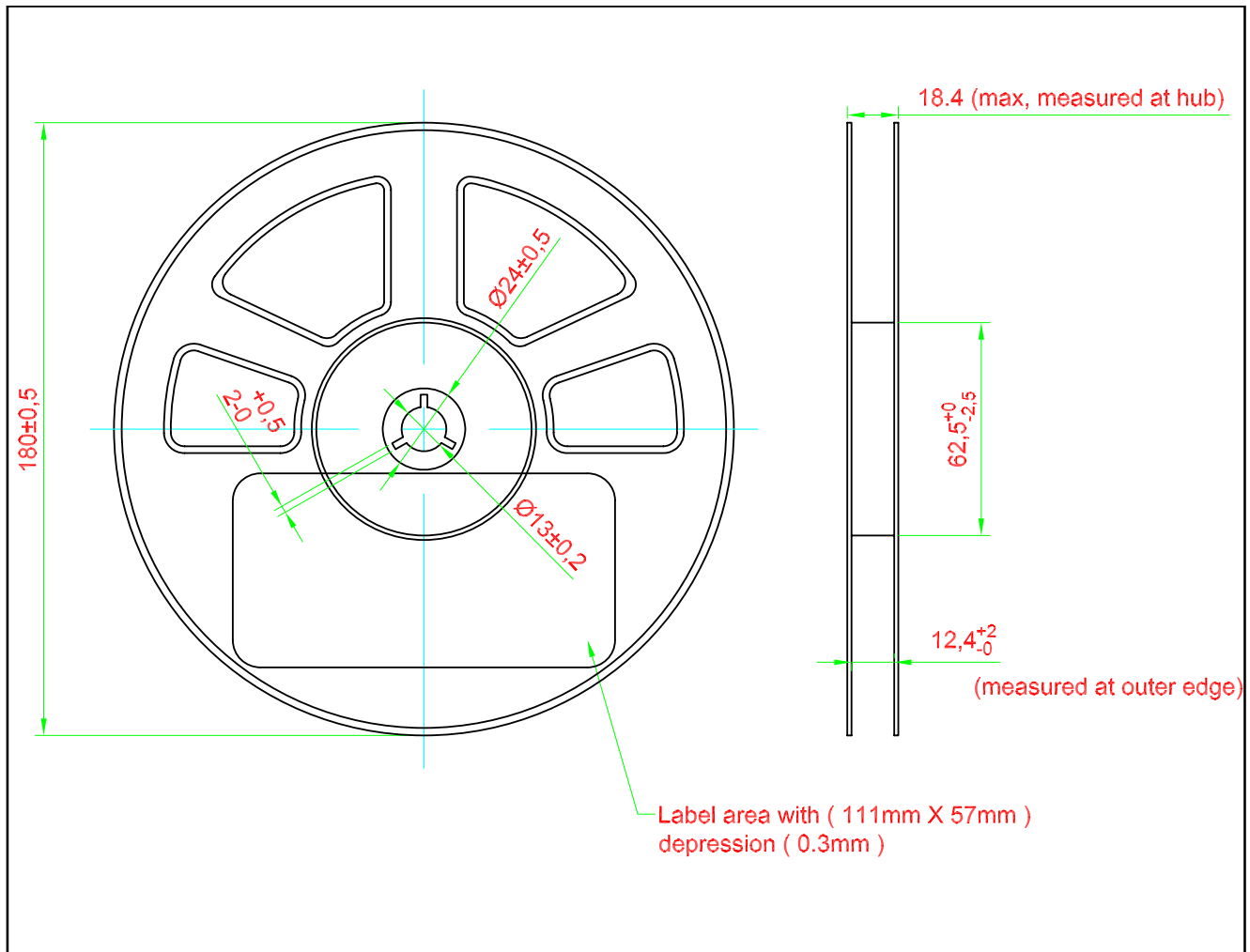


Taping and orientation

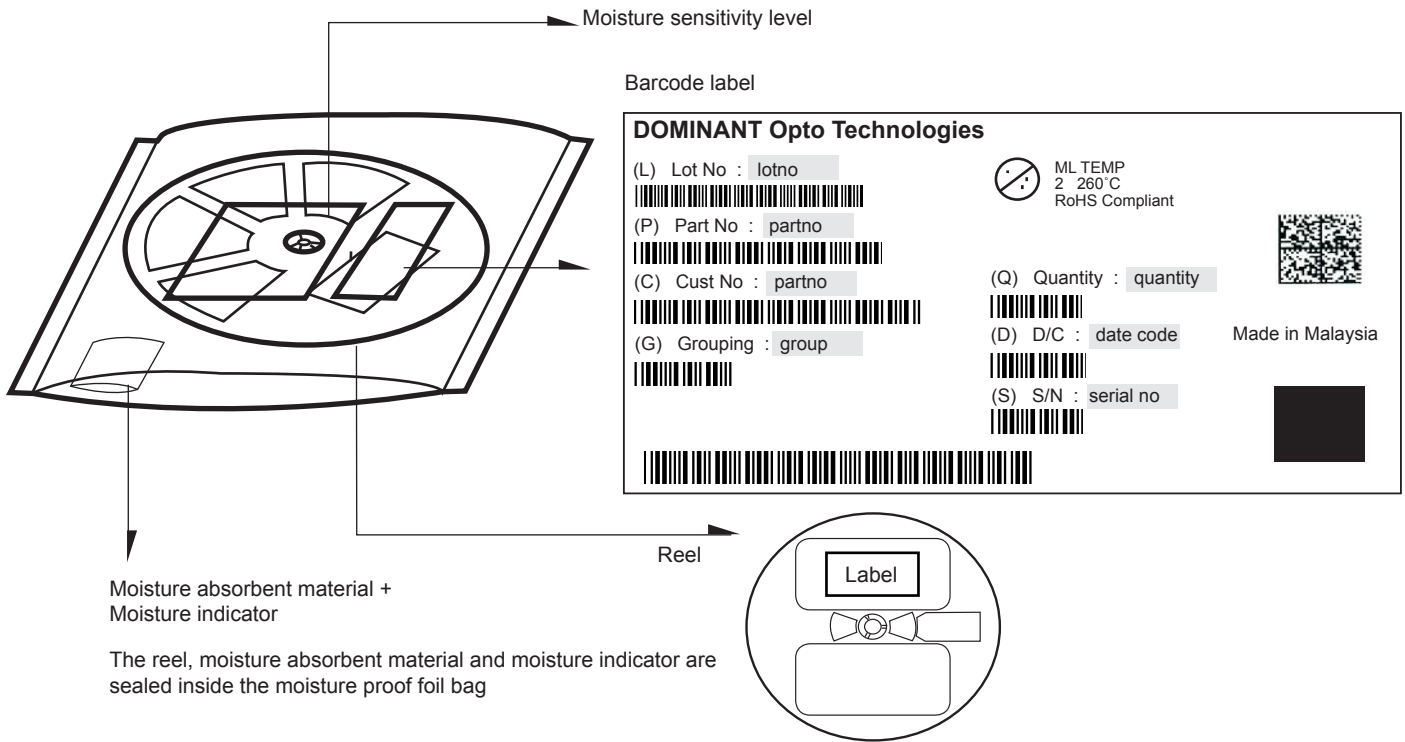
- Reels come in quantity of 2500 units.
- Reel diameter is 180 mm.



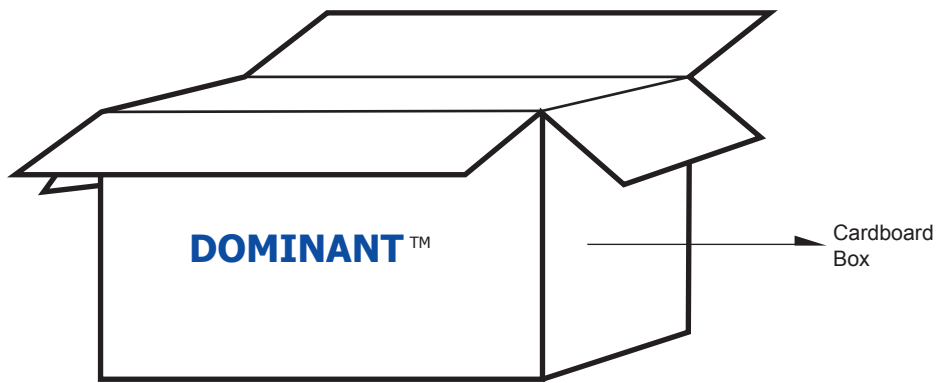
Packaging Specification



Packaging Specification



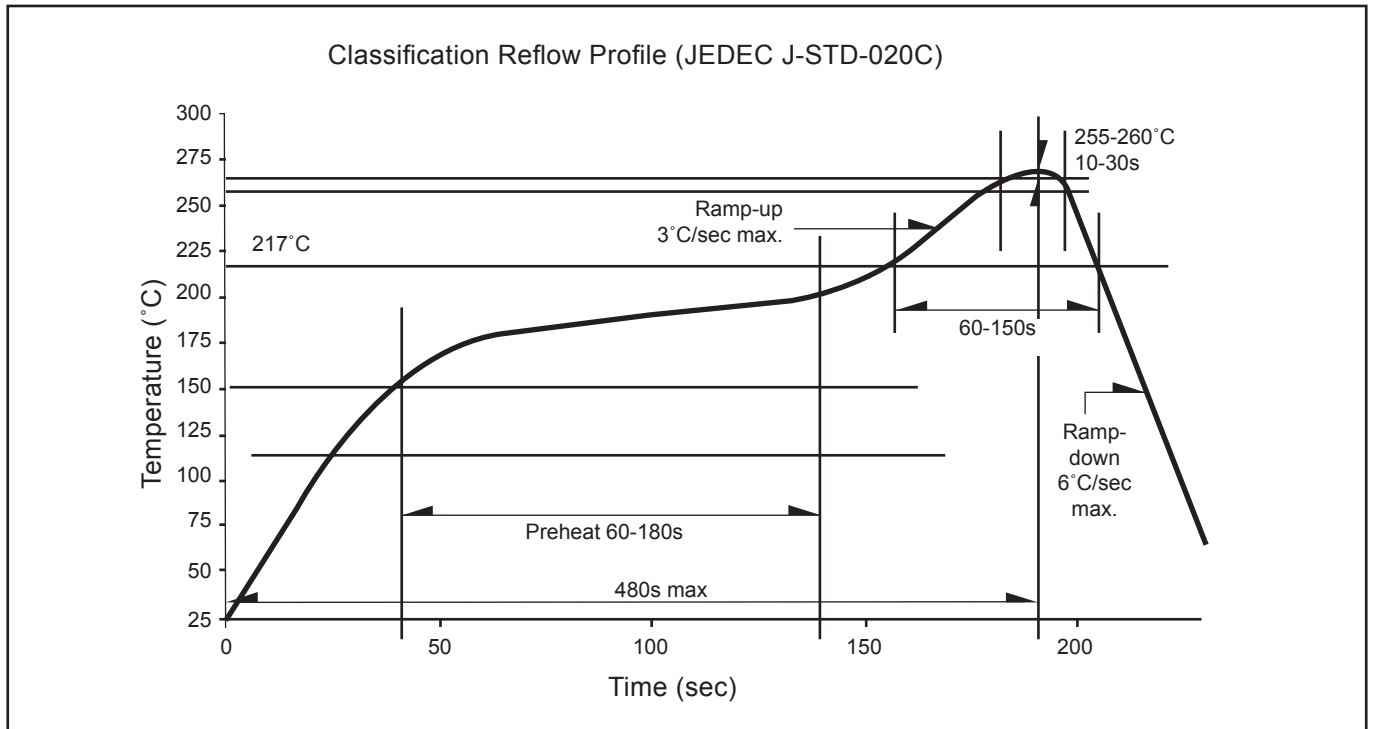
	Average 1pc Right Angle DomiLED	1 completed bag (2500pcs)
Weight (gram)	0.010	240 ± 10



For Right Angle DomiLED™

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	7 reels MAX
Small	325 x 225 x 280	0.54	11 reels MAX
Medium	570 x 440 x 230	1.46	48 reels MAX
Large	570 x 440 x 460	1.92	96 reels MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial release	03 Aug 2009
-	Update company name	08 Mar 2010
2	Add new partno: DSR-NSS-T2U-1	17 Nov 2011
5	Update Graph: Relative Luminous Intensity Vs Forward Current	29 Dec 2011
4	Add Vf binning option	09 Mar 2012
9	Error in carrier tape	21 Jun 2012
2	Add new partno: DSO-NSS-UV1-1 Add Thermal Resistance and Characteristic	10 Sep 2013
1, 6, 10	Update Application Add Note in Package Outline Update Packaging Specification	26 Aug 2015
1, 8	Add Features Update Carrier Tape	10 Mar 2016

NOTE

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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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