DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:
DomiLED™
AlInGaP : DRx-NJS

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.
> Compliance to automotive standard; AEC-Q101.
> Superior Corrosion Resistant.

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-TU2-1	Yellow, 587nm	120	285.0	450.0	715.0
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 bining is also available upon request. Bining scheme is as per following table.

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 20mA Min. (V)	Typ. (V)	Max. (V)	V_r @ I_r = 10uA 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)	130	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)	 380 280	 K/W K/W

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) I_F = 20mA; 0 ˚C <= T <= 85 ˚C	$TC_{\lambda dom}$ (typ)	DRS-NJS DRR-NJS DRA-NJS DRO-NJS DRY-NJS	0.06 0.07 0.07 0.08 0.09	nm / K
Temperature coefficient of $V_{F\ (typ)}$ I_F = 20mA; 0 ˚C <= T <= 85 ˚C	TC_V	DRS-NJS DRR-NJS DRA-NJS DRO-NJS DRY-NJS	-3.9 -2.3 -2.2 -2.0 -1.9	mV / K
Temperature coefficient of $I_{V\ (typ)}$ I_F = 20mA; 0 ˚C <= T <= 85 ˚C	TC_{IV}	DRS-NJS DRR-NJS DRA-NJS DRO-NJS DRY-NJS	-0.6 -0.6 -0.7 -0.9 -1.1	% / K

Wavelength Grouping at Tj=25˚C

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

Dominant wavelength is measured with an accuracy of ± 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%.

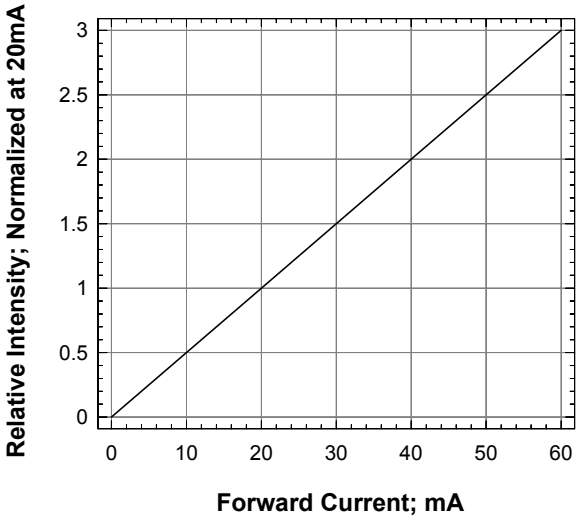
Vf Bining (Optional)

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

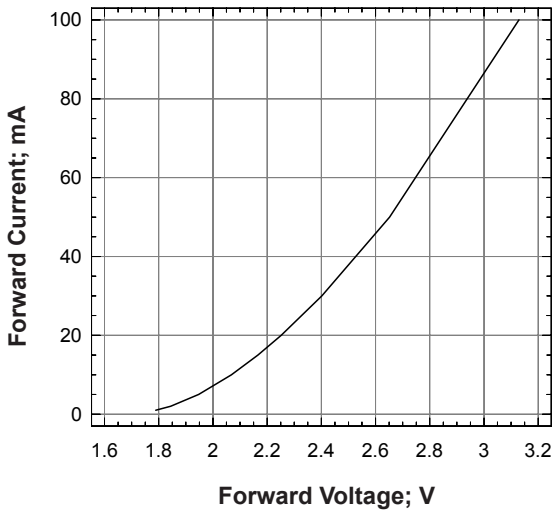
Forward voltage, Vf is measured with an accuracy of ± 0.1V.

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

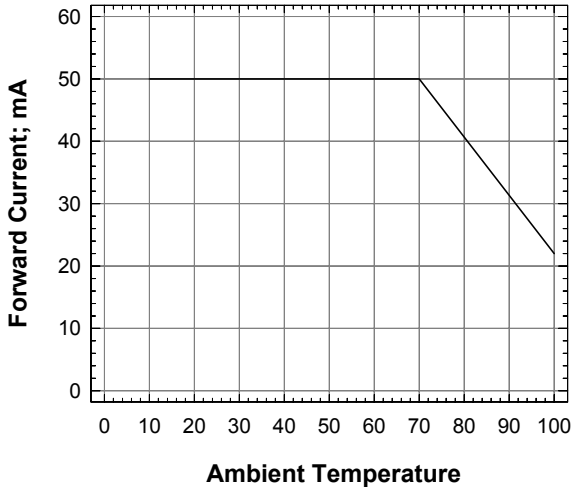
Relative Intensity Vs Forward Current



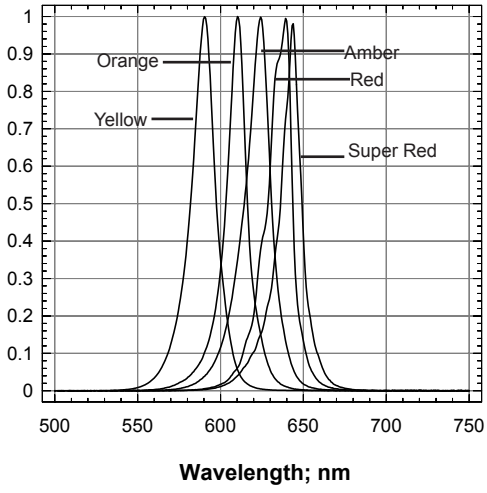
Forward Current Vs Forward Voltage



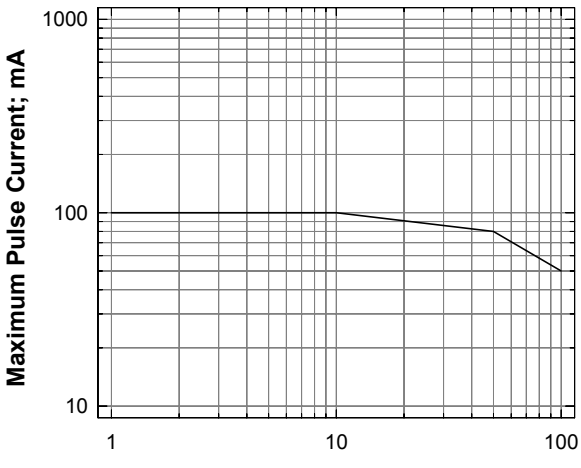
Forward Current Vs Ambient Temperature



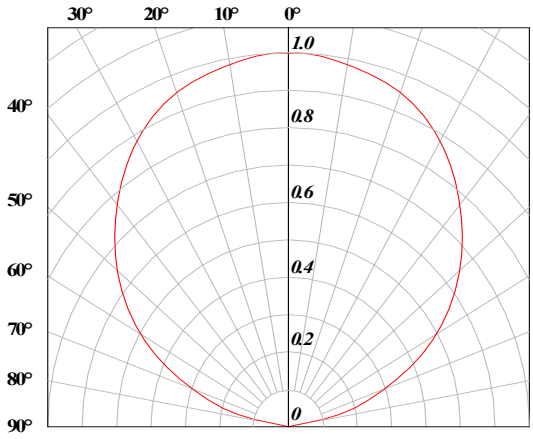
Relative Intensity Vs Wavelength



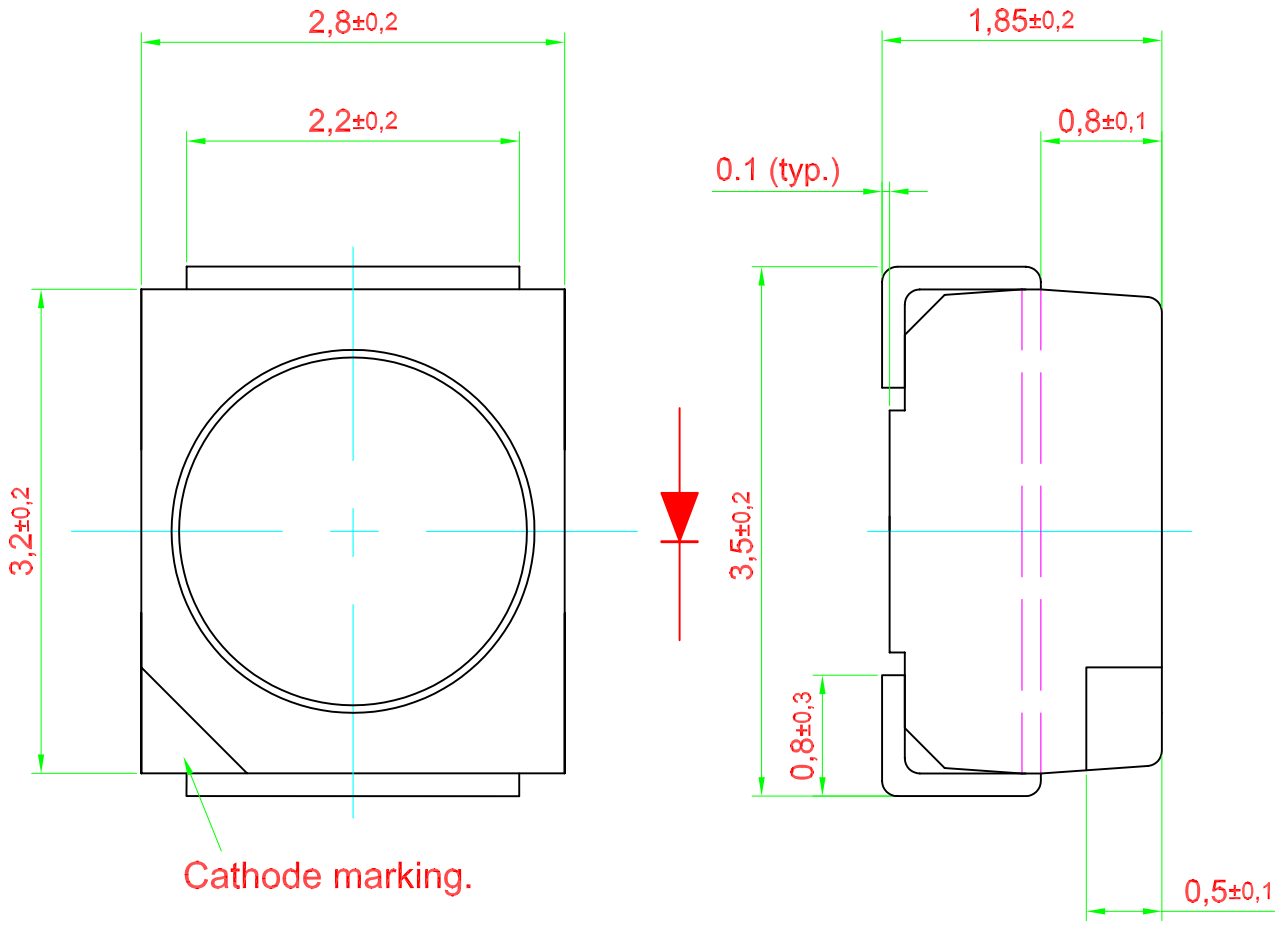
Maximum Pulse Current Vs Duty Cycle



Radiation Pattern



DomiLED™ • AlInGaP : DRx-NJS Package Outlines

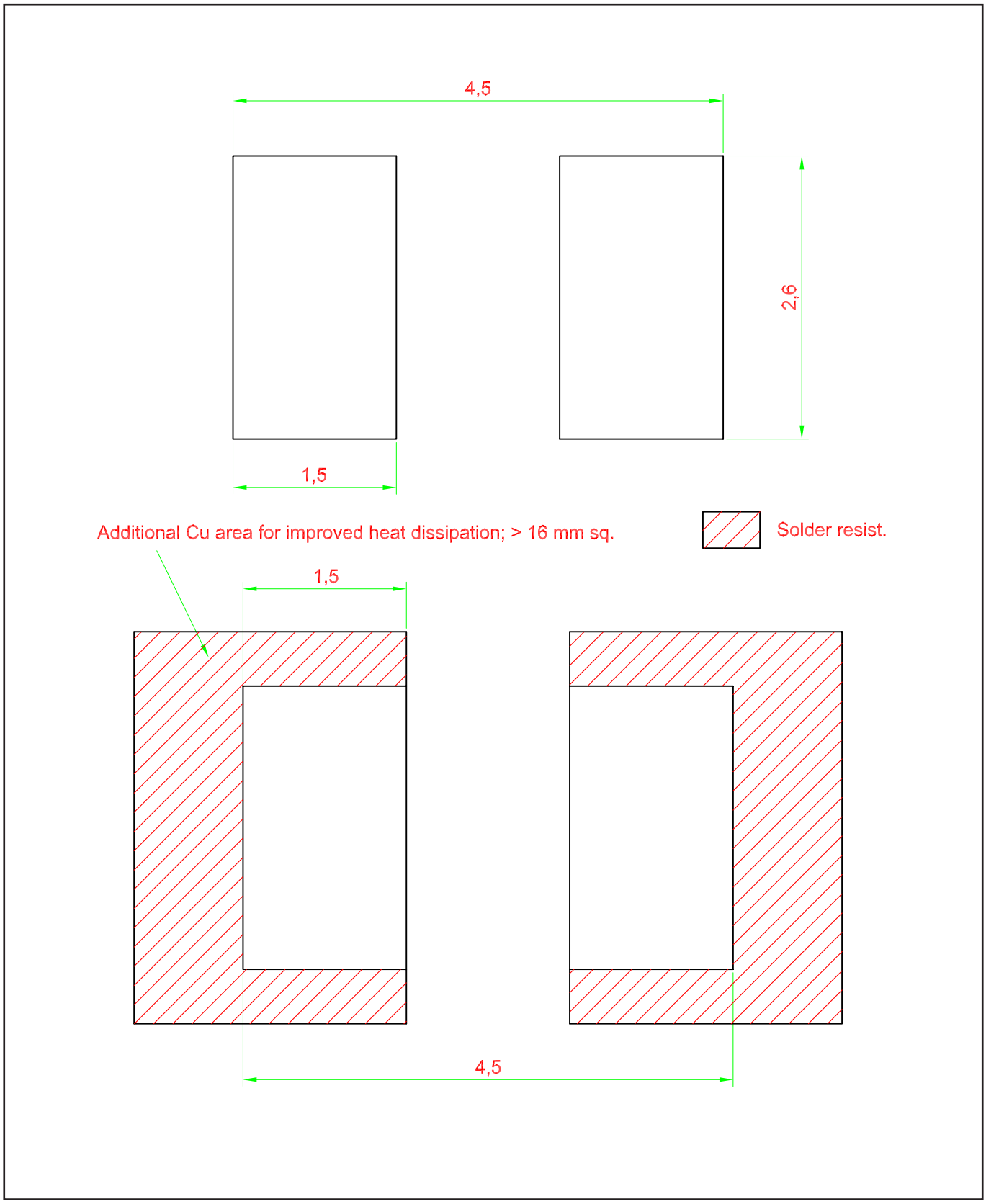


Note : Primary thermal path is through Cathode lead of LED package

Material

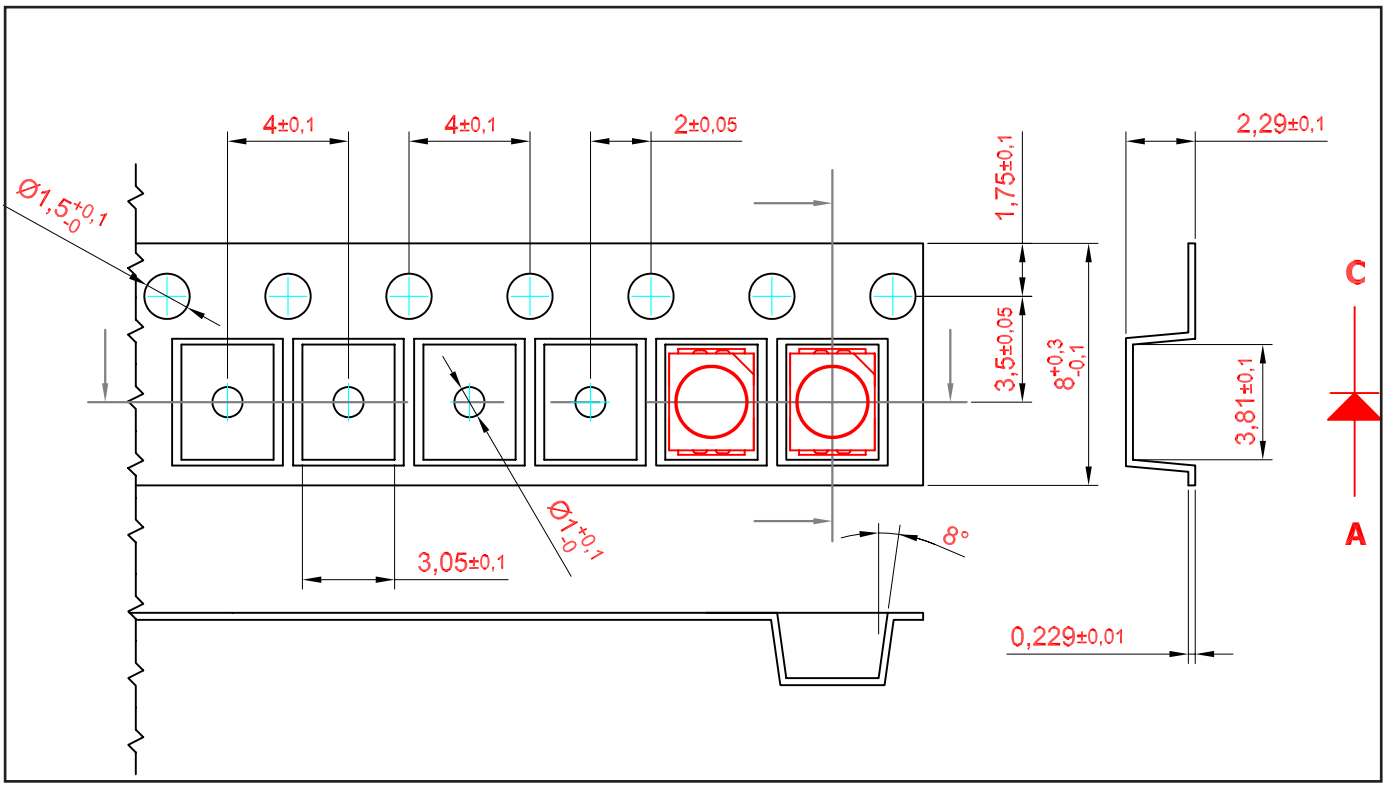
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

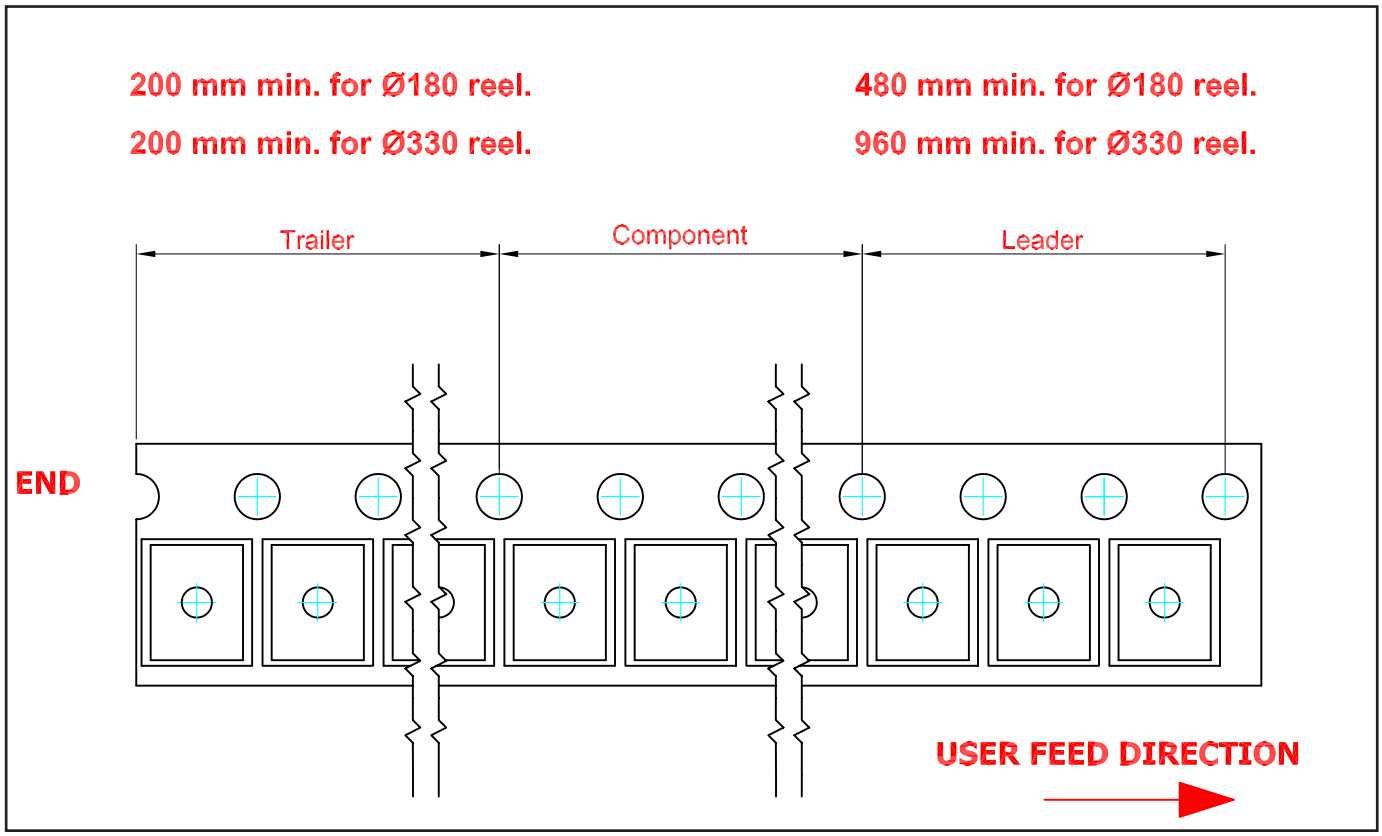
Recommended Solder Pad



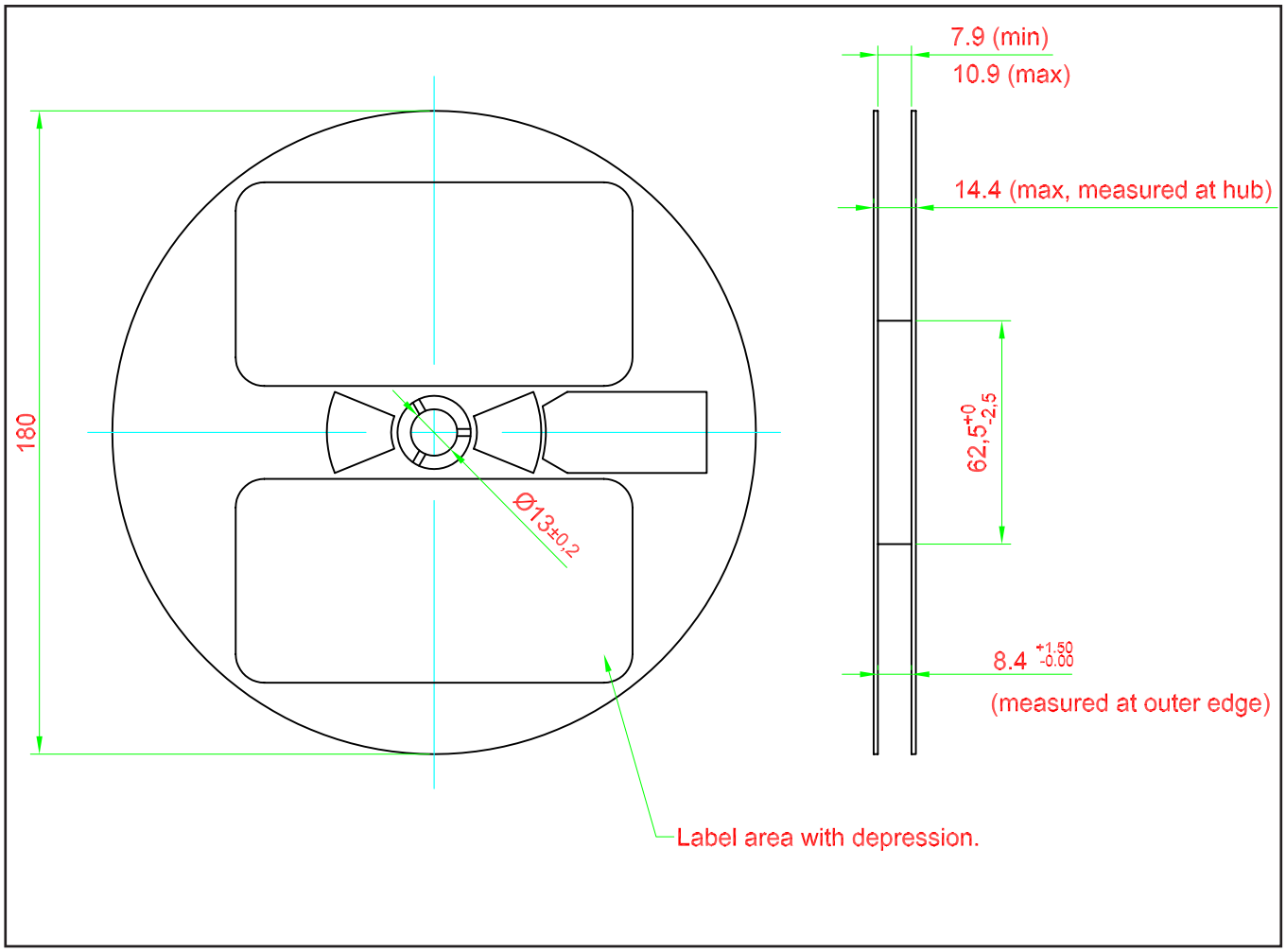
Taping and orientation

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

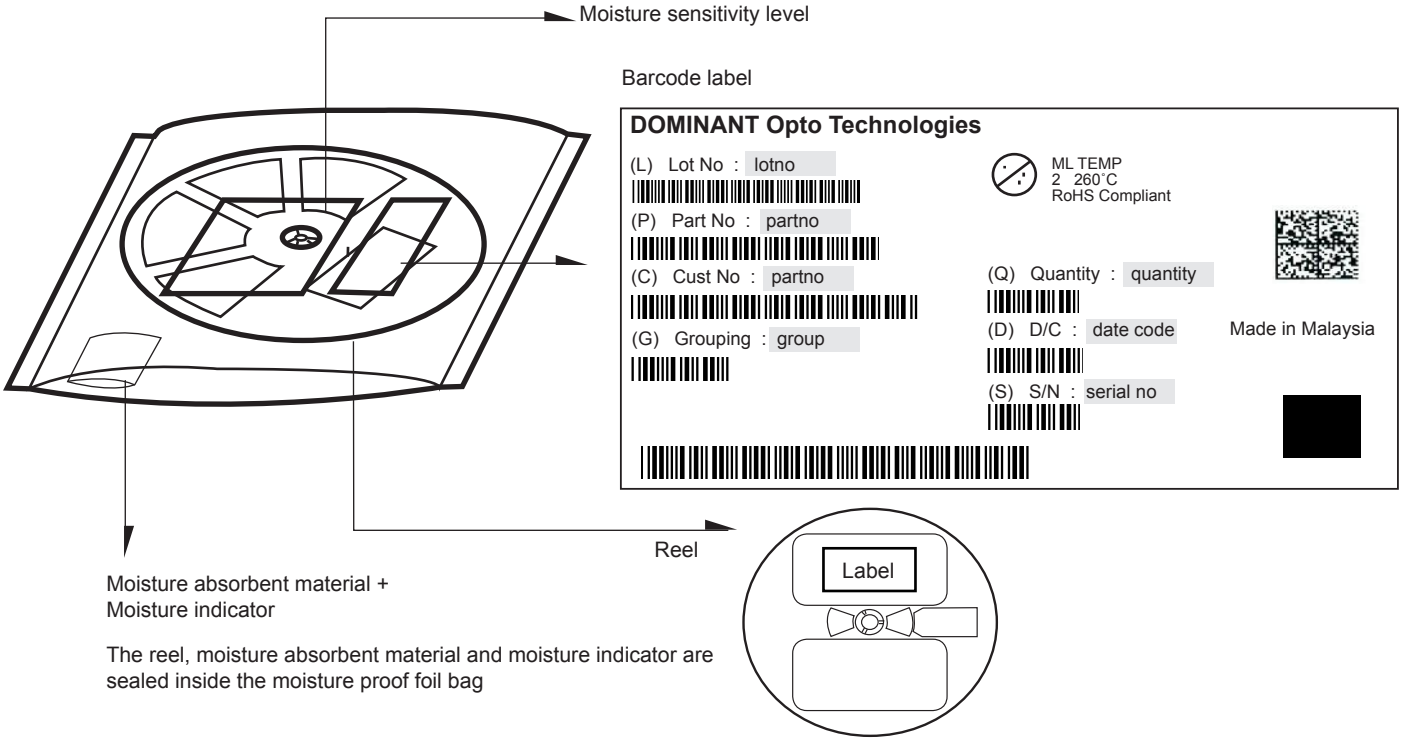




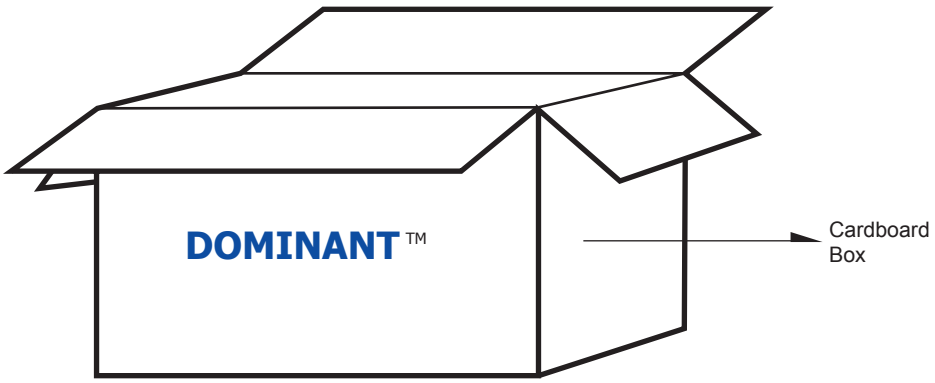
Packaging Specification



Packaging Specification



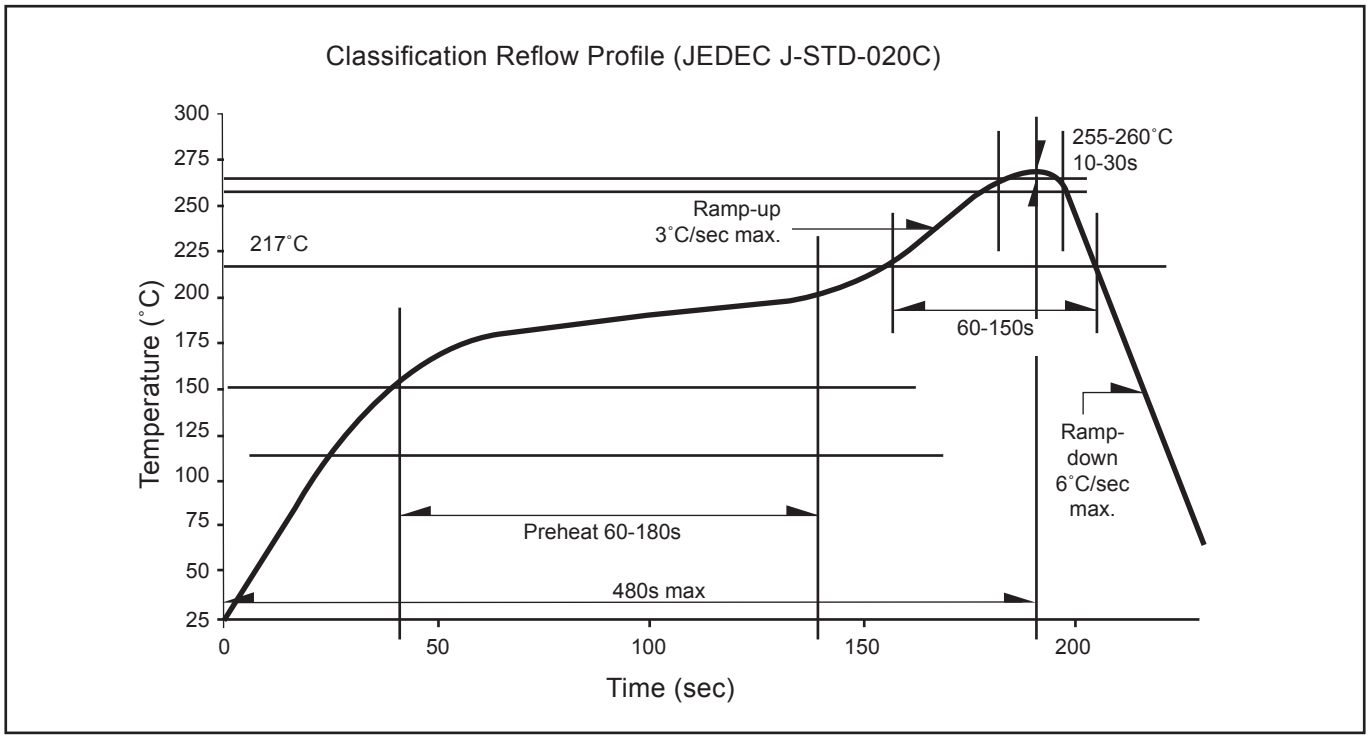
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	**0.034**	**240 ± 10**



For DomiLED™

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	9 reels MAX
Small	325 x 225 x 280	0.54	15 reels MAX
Medium	570 x 440 x 230	1.46	60 reels MAX
Large	570 x 440 x 460	1.92	120 reels MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
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
4	Update Characteristics	18 Jan 2012
2	Add new partno: DRY-NJS-TU2-1	09 Dec 2013
3	Update Power Dissipation	13 Mar 2014
1, 6, 7, 11	Add Features Add Note in Packaging Outline Update Graph: Forward Current Vs Forward Voltage Update Packaging Specification	30 Oct 2015
1	Update Product Photo	29 Apr 2016

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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