DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

DomiLED

InGaN : DDx-HRS

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.
> 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.
> Compliance to automotive standard, AEC-Q101.

Applications:

> Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
> Consumer Appliances: LCD illumination as in PDAs, LCD TV.
> Communication: indicator and backlight in mobilephone.
> Signage: full color display video notice board.
> Industrial: white goods (eg: Oven, microwave, etc.).

Optical Characteristics at Tj=25˚C

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ 20mA IV (mcd) Appx. 1.1		
			Min.	Typ.	Max.
DDT-HRS-V2W-1	True Green	120	900.0	1400.0	1800.0
DDB-HRS-S2T-1	Blue	120	224.0	355.0	450.0

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 20mA Appx. 3.1			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDx-HRS	2.9	3.2	3.6	5

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005)	100	mA
Reverse voltage; Ir (max) = 10uA	5	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)	80	mW
Thermal resistance		
- Junction / ambient, $R_{th\ JA}$	340	K/W
- Junction / solder point, $R_{th\ JS}$	180	K/W
(Mounting on FR4 PCB, pad size >= 16 mm^2 per pad)		

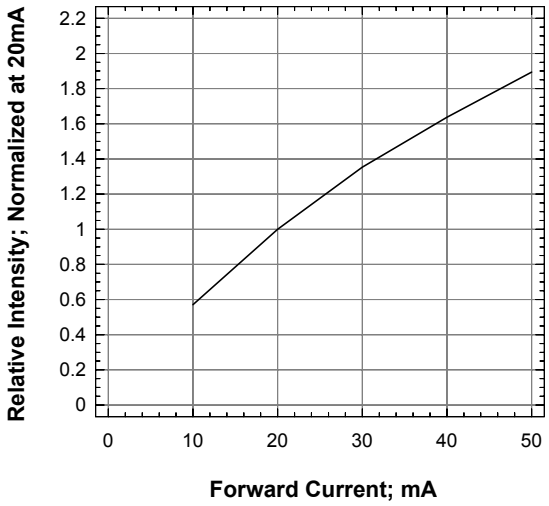
Wavelength Grouping at Tj=25˚C

Color	Group	Wavelength distribution(nm) *Appx. 2.2*
DDT; True Green	Full	520.0 - 535.0
	A	520.0 - 525.0
	B	525.0 - 530.0
	C	530.0 - 535.0
DDB; Blue	Full	464.0 - 476.0
	A	464.0 - 470.0
	B	470.0 - 476.0

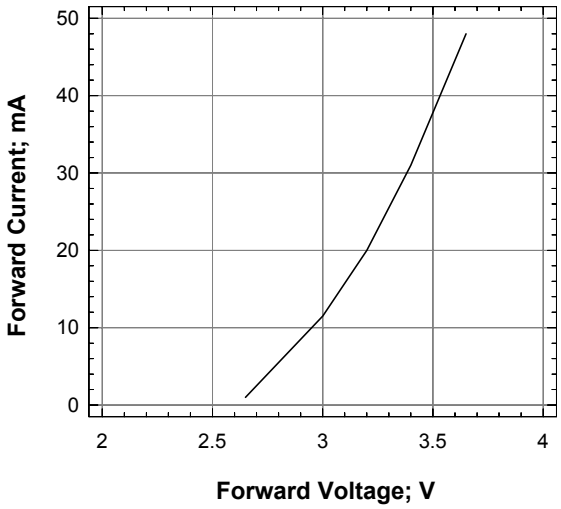
Luminous Intensity Group at Tj=25˚C

Brightness Group	Luminous Intensity *Appx. 1.1* IV (mcd)
S2	224.0 ... 285.0
T1	285.0 ... 355.0
T2	355.0 ... 450.0
V2	900.0 ... 1125.0
W1	1125.0 ... 1400.0
W2	1400.0 ... 1800.0

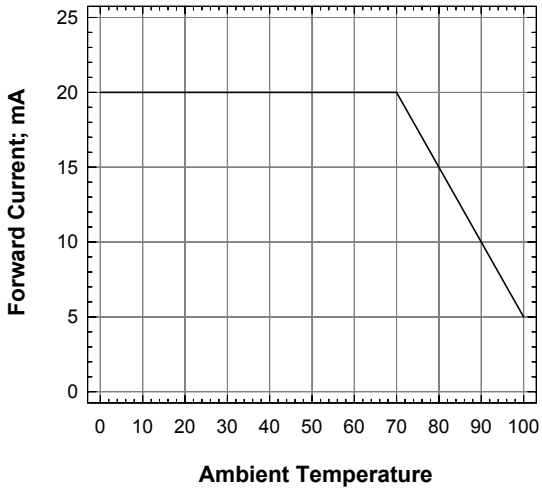
Relative Intensity Vs Forward Current



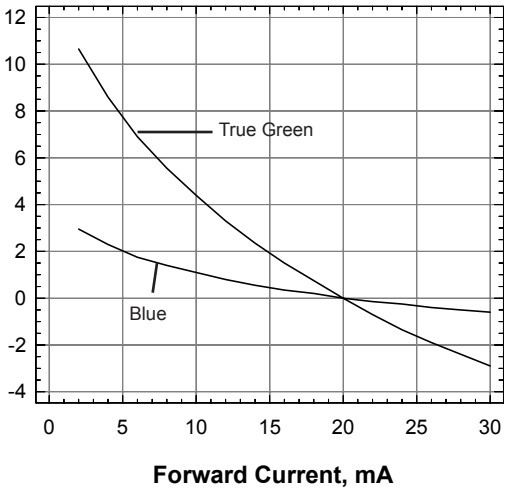
Forward Current Vs Forward Voltage



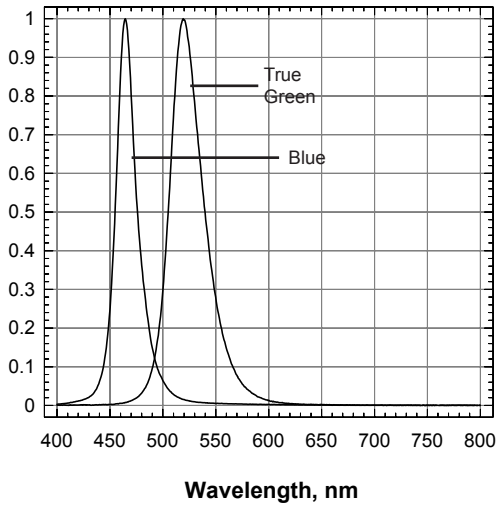
Maximum Current Vs Ambient Temperature



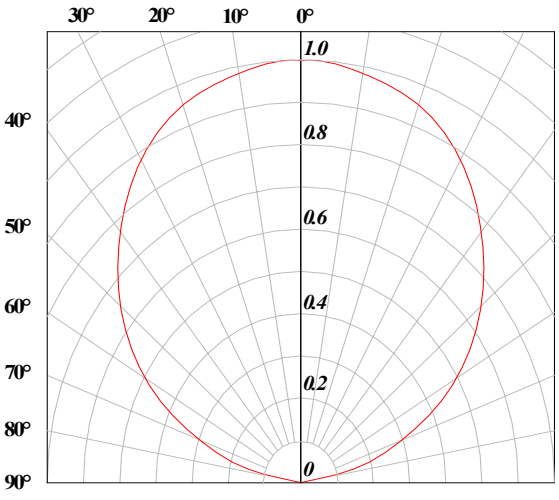
Dominant Wavelength Shift Vs Forward Current



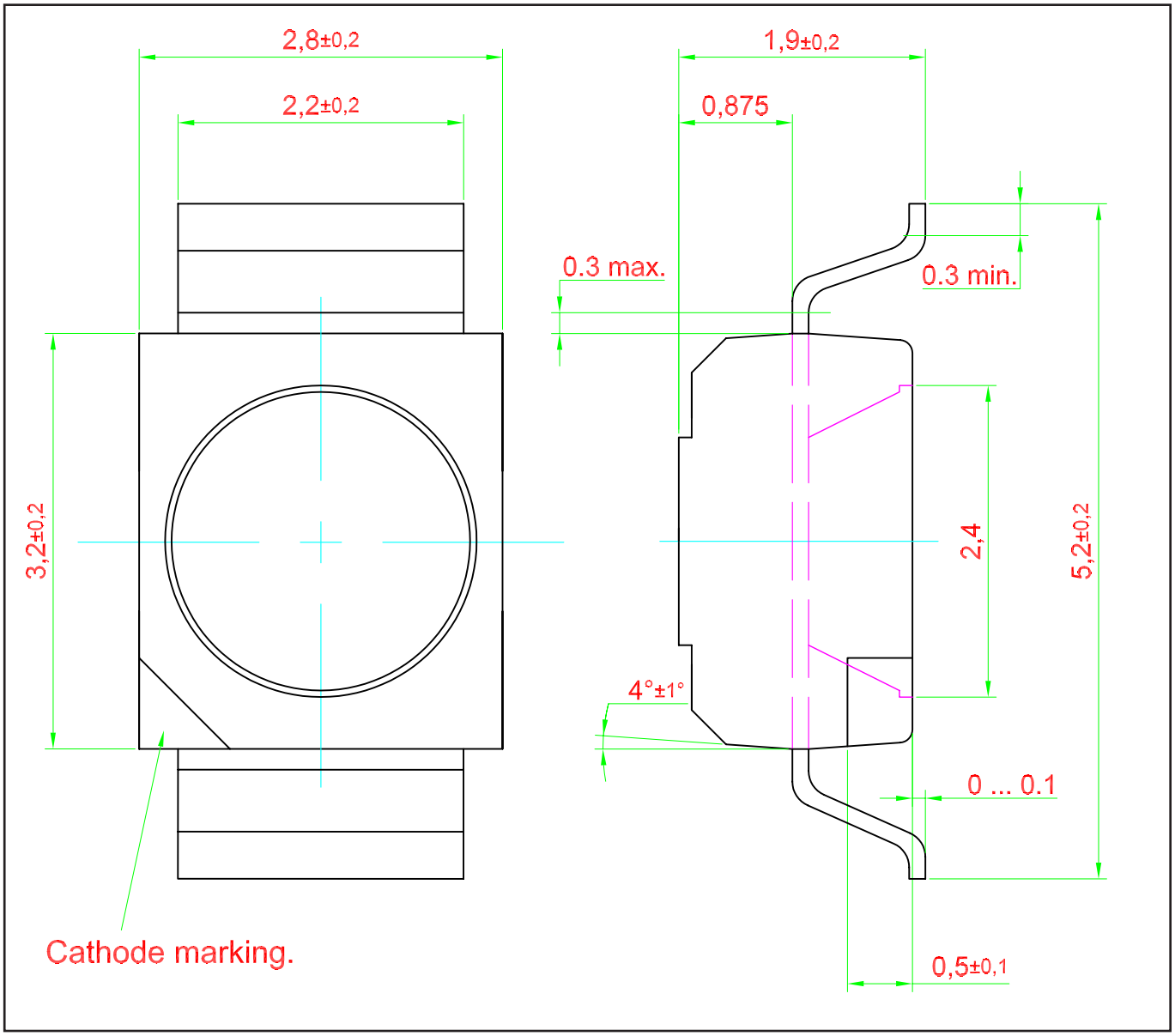
Relative Intensity Vs Wavelength



Radiation Pattern



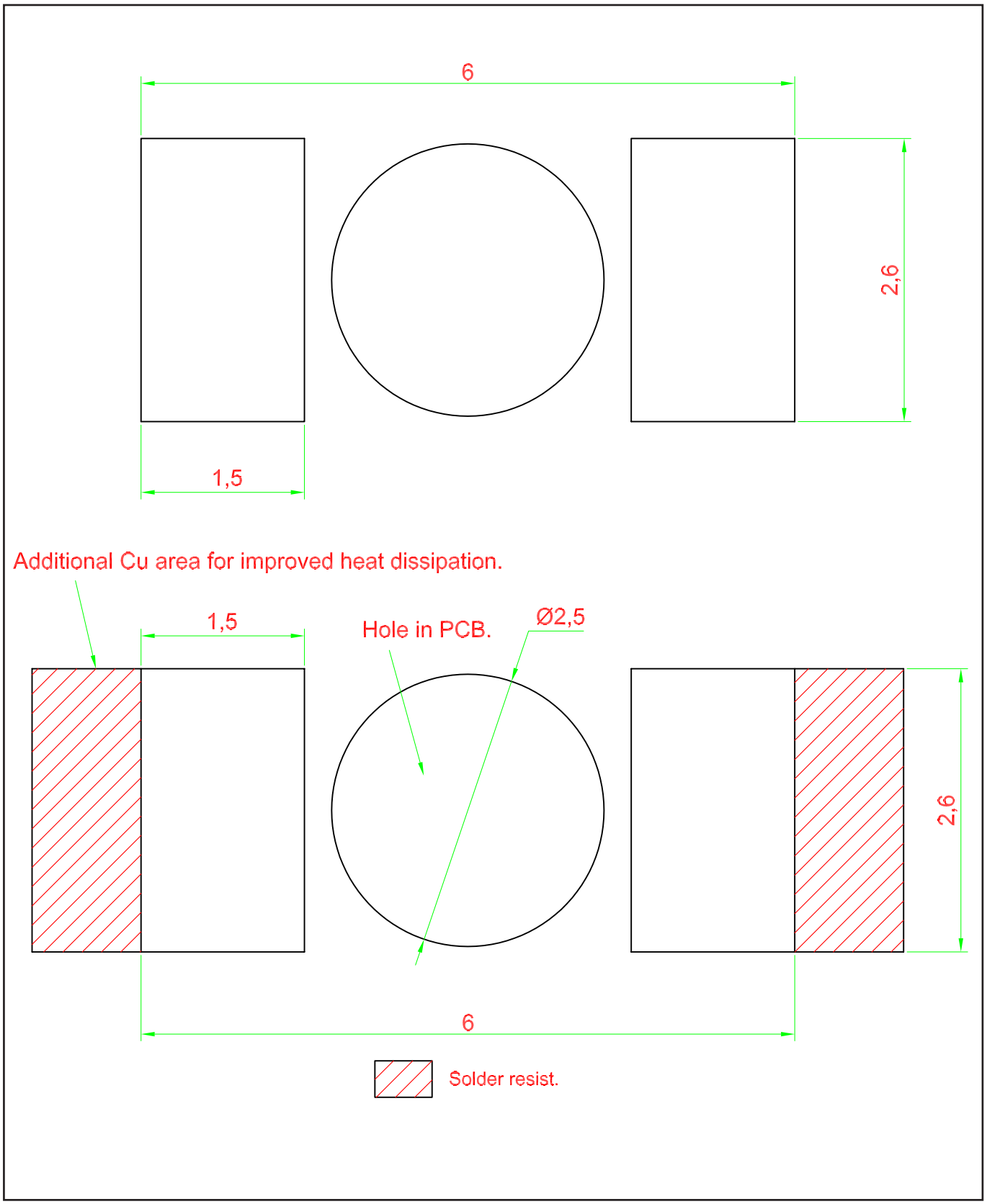
DomiLED • InGaN : DDx-HRS Package Outlines



Material

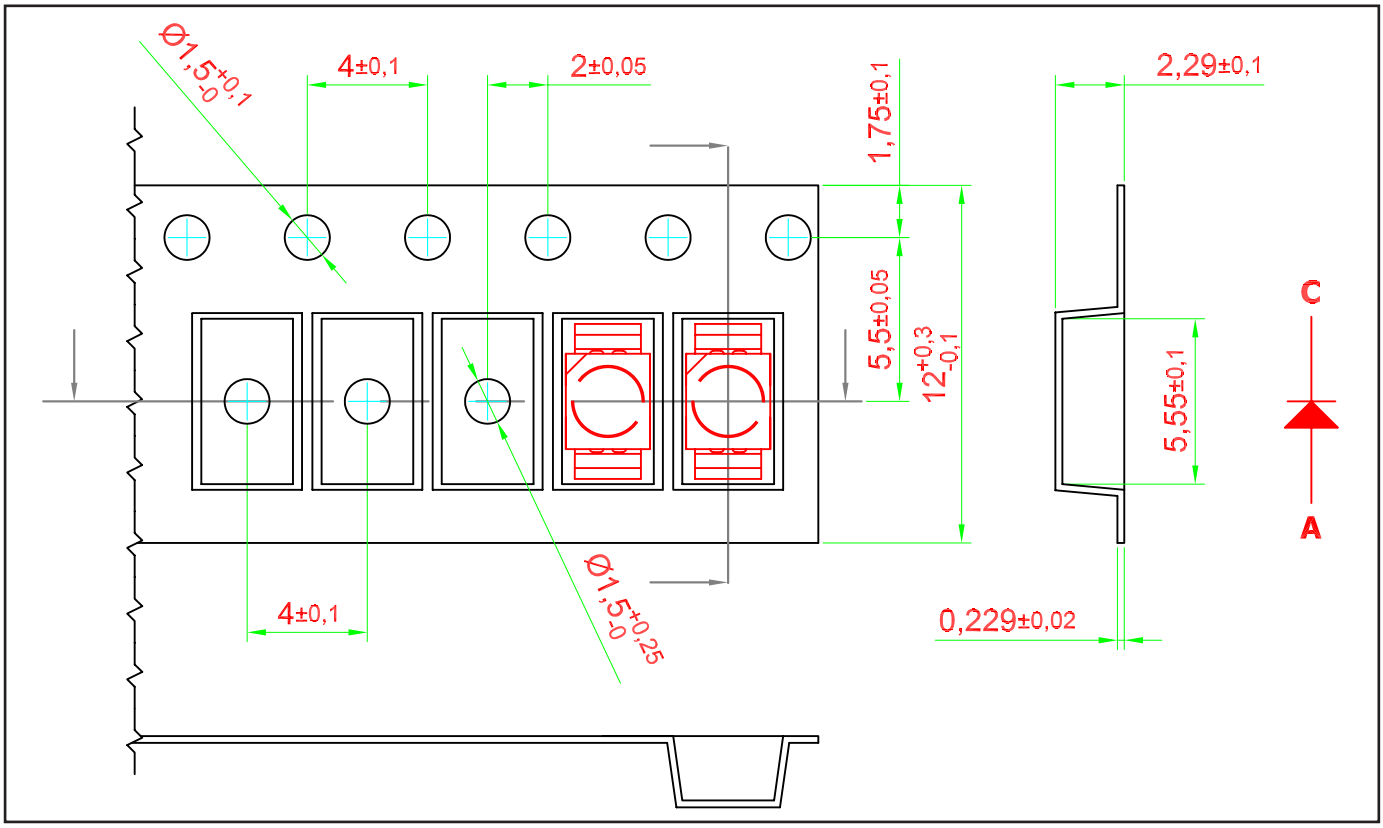
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn Plating

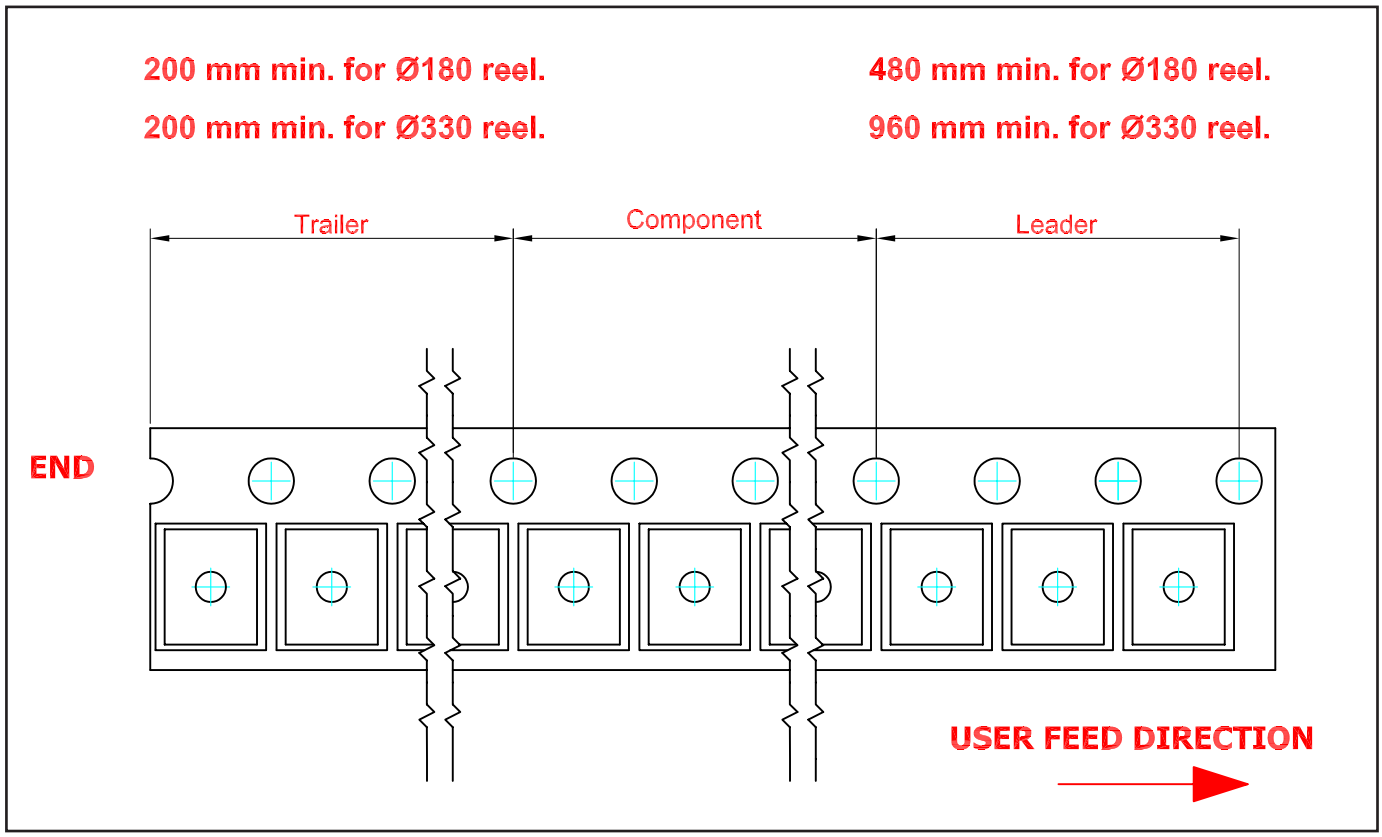
Recommended Solder Pad



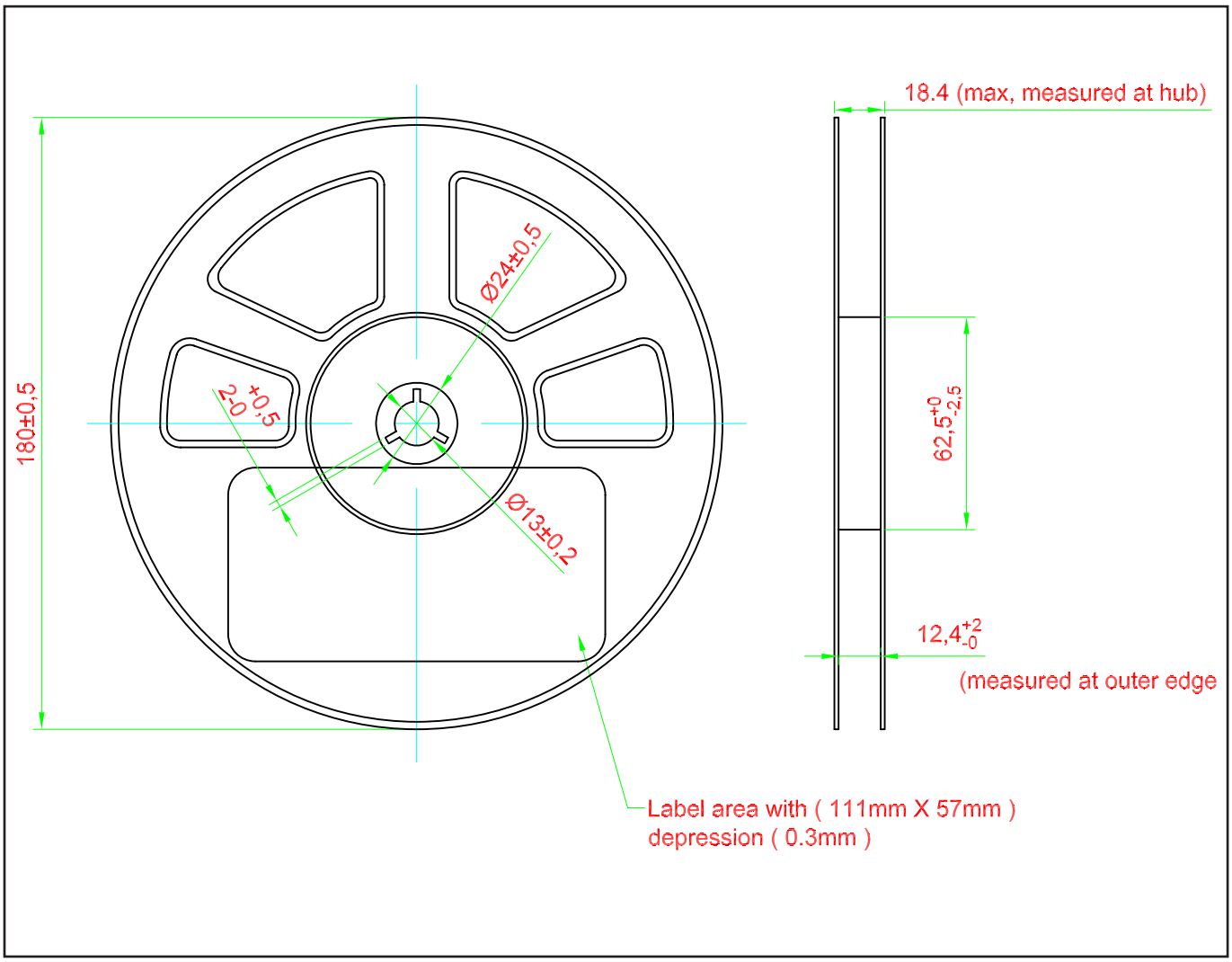
Taping and orientation

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

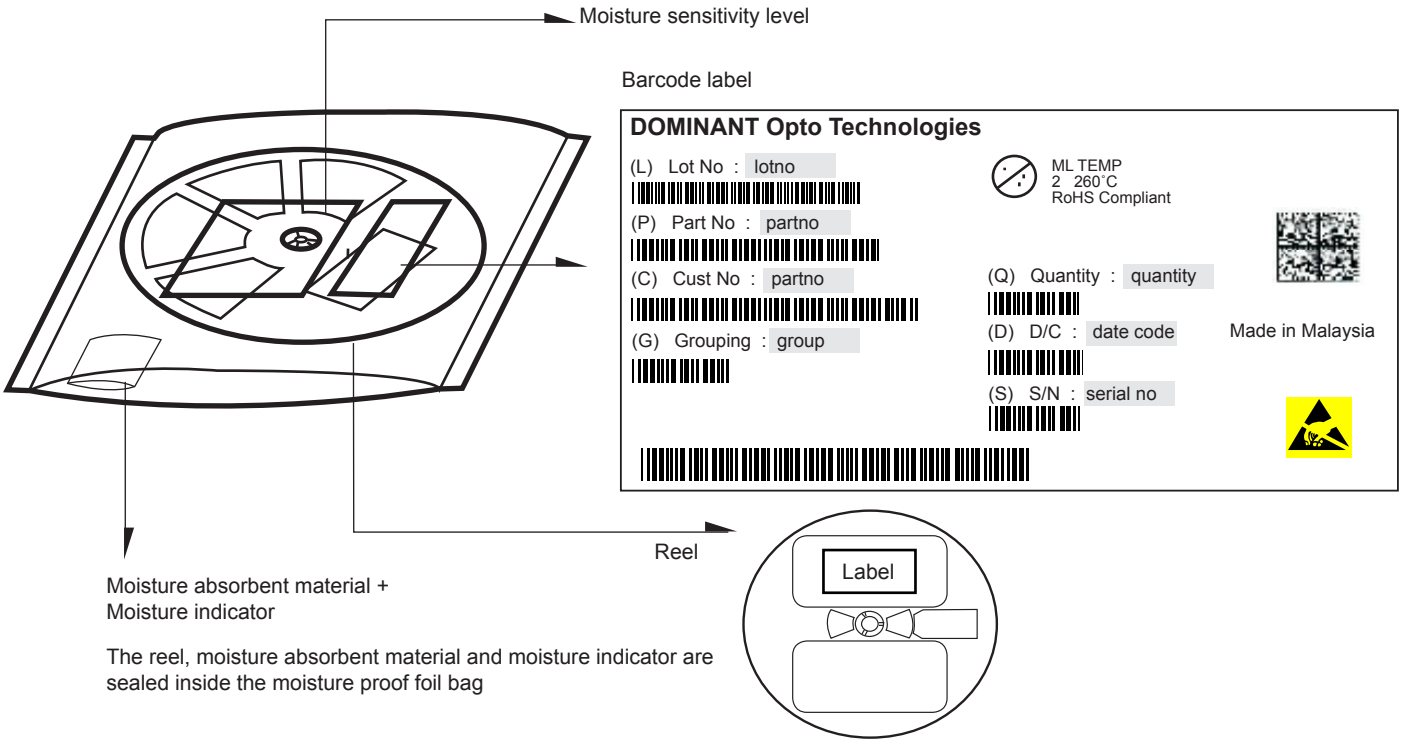




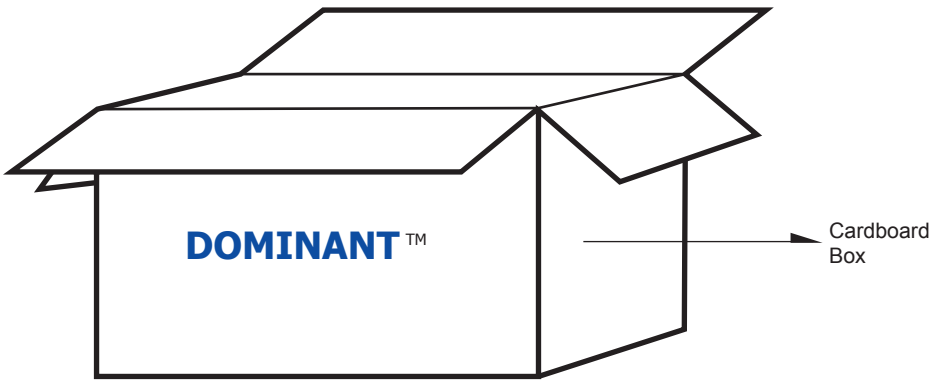
Packaging Specification



Packaging Specification



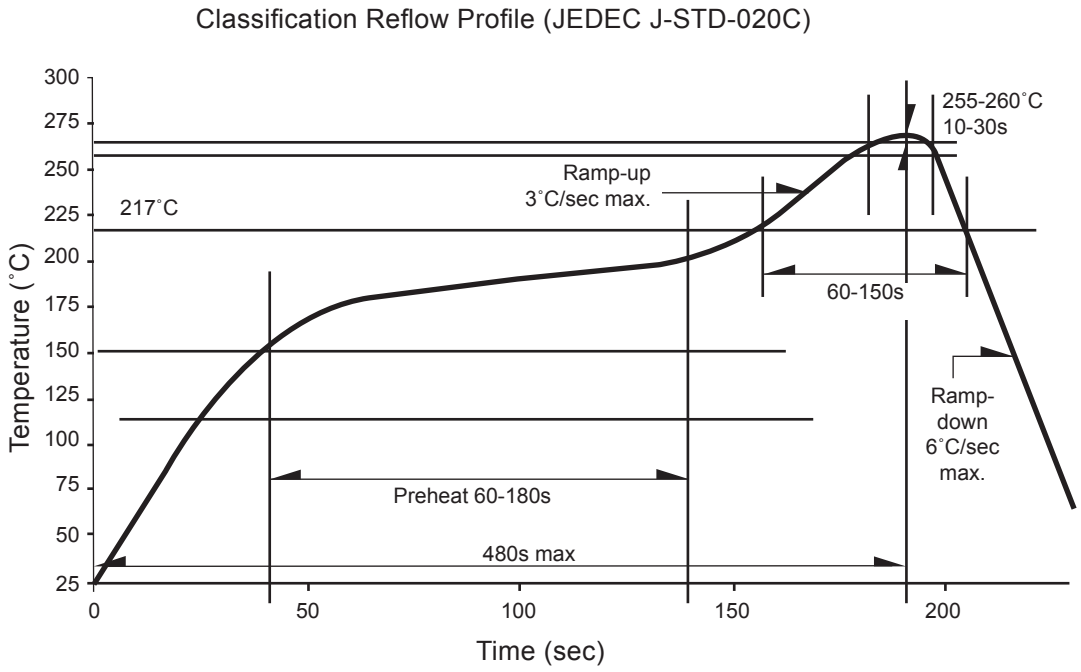
	Average 1pc DomiLED	1 completed bag (2000pcs)
Weight (gram)	**0.034**	**240 ± 10**



For DomiLED

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	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



Appendix

1) Brightness:

1.1 Luminous intensity is measured with an internal reproducibility of ± 8 % and an expanded uncertainty of ± 11 % (according to GUM with a coverage factor of k=3).

1.2 Luminous flux is measured with an internal reproducibility of ± 8 % and an expanded uncertainty of ± 11 % (according to GUM with a coverage factor of k=3).

2) Color:

2.1 Chromaticity coordinate groups are measured with an internal reproducibility of ± 0.005 and an expanded uncertainty of ± 0.01 (accordingly to GUM with a coverage factor of k=3).

2.2 DOMINANT wavelength is measured with an internal reproducibility of ± 0.5nm and an expanded uncertainty of ± 1nm (accordingly to GUM with a coverage factor of k=3).

3) Voltage:

3.1 Forward Voltage, Vf is measured with an internal reproducibility of ± 0.05V and an expanded uncertainty of ± 0.1V (accordingly to GUM with a coverage factor of k=3).

Revision History

Page	Subjects	Date of Modification
-	Initial Release	20 Apr 2010
2	Add Thermal Resistance	31 May 2012
8	Error in carrier tape	22 Jun 2012
1, 9	Add Features Update Package Specification	16 Oct 2015
1, 9, 11	Update Product Photo Error on Packaging Specification Add Appendix	03 Jul 2017

NOTE

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About Us

DOMINANT Opto Technologies is a dynamic company that is amongst the world's leading automotive LED manufacturers. With an extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing and development capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Opto Technologies, a ISO/TS 16949 and ISO 14001 certified company, can be found under http://www.dominant-semi.com.

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