DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

DomiLED

IR : DR8-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.
> Qualified based on AEC-Q101 Standard.
> Passed Corrosion Resistant Test.



Applications:

> Automotive: Interior applications.
> Infrared illumination.
> Sensor technology.
> IR data transmission.

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Optical Characteristics at Tj=25˚C

Part Ordering Number	Peak Wavelength	Viewing Angle˚	Radiant Intensity @ IF = 70mA Ie(mW/sr) *Appx. 1.3*		
			Min.	Typ.	Max.
DR8-NJS-R-1	850nm	120	10.0	15.0	20.0

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 70mA *Appx. 3.1*		V_r @ I_r = 10uA
	Typ. (V)	Max. (V)	Min. (V)
DR8-NJS	1.7	2.1	5

Absolute Maximum Ratings

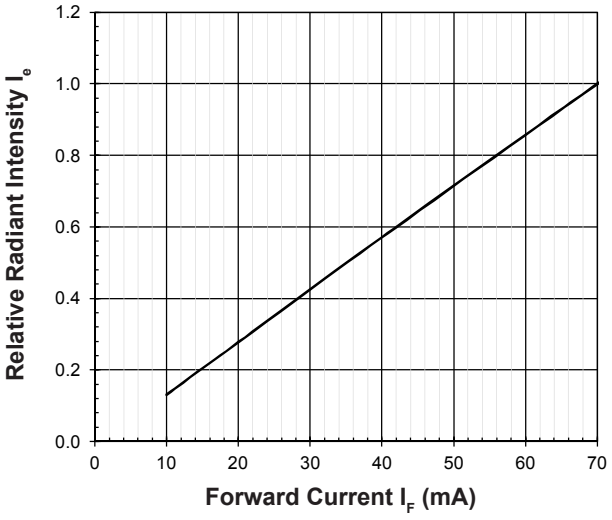
	Maximum Value	Unit
DC forward current	70	mA
Peak pulse current; (tp ≤ 100µs, Duty cycle = 0.005)	700	mA
Reverse voltage	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	110	˚C
Operating temperature	-40 … +100	˚C
Storage temperature	-40 … +100	˚C
Power dissipation (at room temperature)	140	mW
Thermal resistance - Junction / ambient, $R_{th\ JA}$ - Junction / solder point, $R_{th\ JS}$ (Mounting on FR4 PCB, pad size >= 16 mm^2 per pad)	 420 200	 K/W K/W

Luminous Intensity Group at Tj=25˚C

Brightness Group	Luminous Intensity Ie (mW/sr)
R	10.0 - 20.0

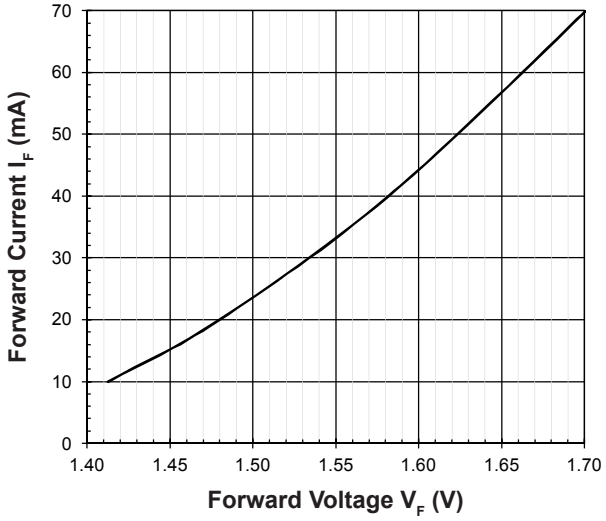
Relative Radiant Intensity Vs Forward Current

$I_e/I_e(70mA) = f(I_F)$; $T_j = 25°C$



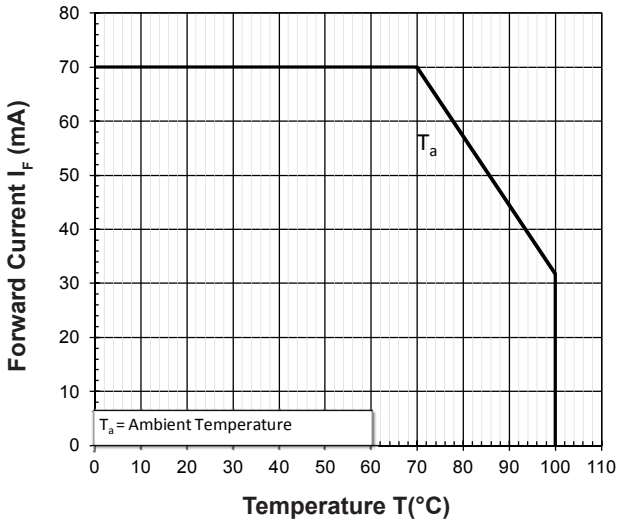
Forward Current Vs Forward Voltage

$I_F = f(V_F)$; $T_j = 25°C$



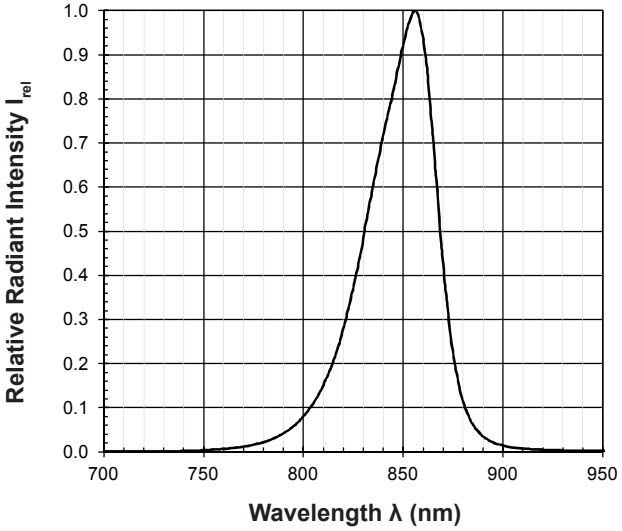
Maximum Current Vs Temperature

$I_F = f(T)$



Relative Spectral Emission

$I_{rel} = f(\lambda)$; $T_j = 25°C$; $I_F = 70mA$

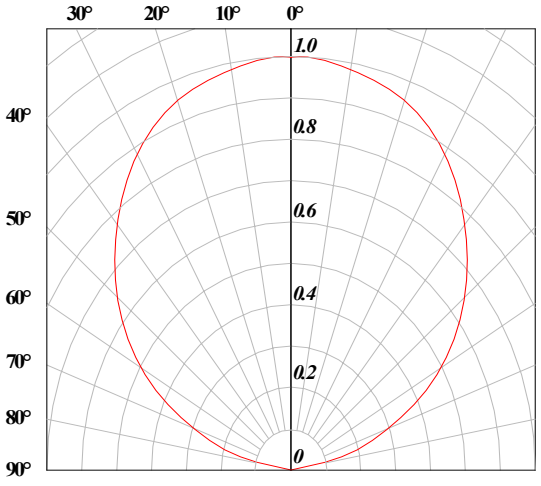


Allowable Forward Current Vs Duty Ratio

($T_j = 25°C$; $t_p \leq 10\mu s$)

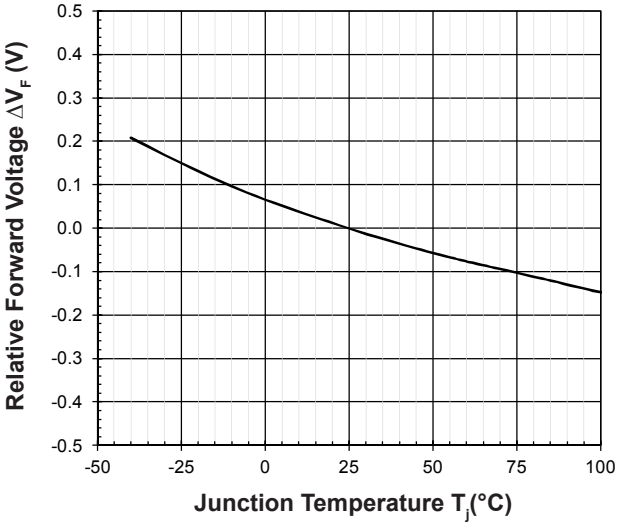


Radiation Pattern



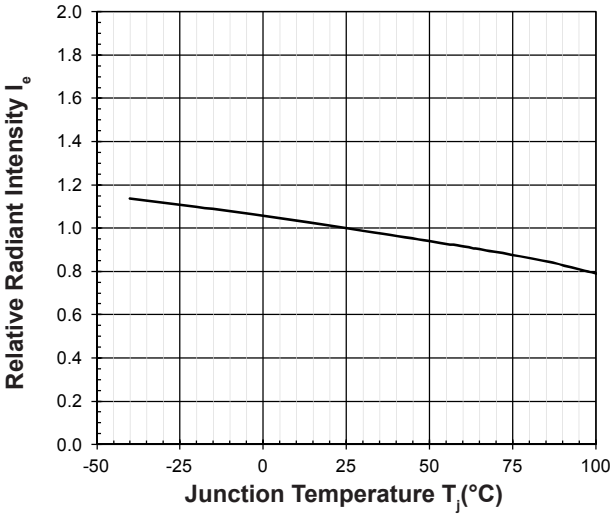
Relative Forward Voltage Vs Junction Temperature

$\Delta V_F = V_F - V_F(25°C) = f(T_j)$; I_F =70mA



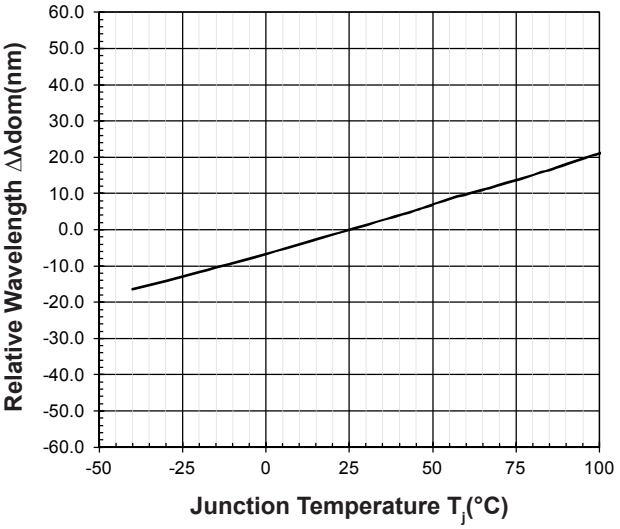
Relative Radiant Intensity Vs Junction Temperature

$I_e/I_E(25°C) = f(T_j)$; I_F = 70mA

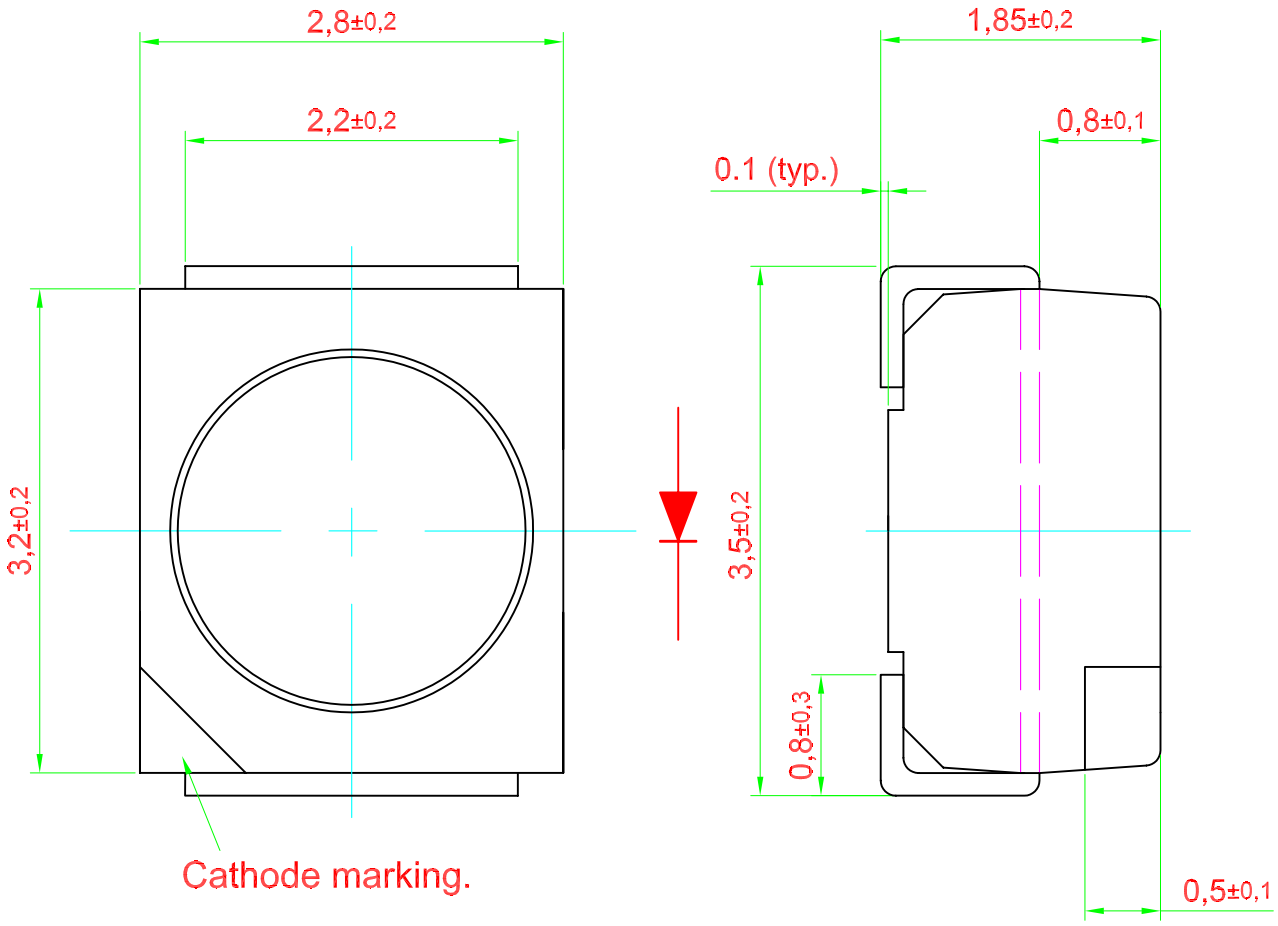


Relative Wavelength Vs Junction Temperature

$\Delta\lambda dom = \lambda dom - \lambda dom\ (25°C) = f(T_j)$; IF =70mA



DomiLED • IR : DR8-NJS Package Outlines

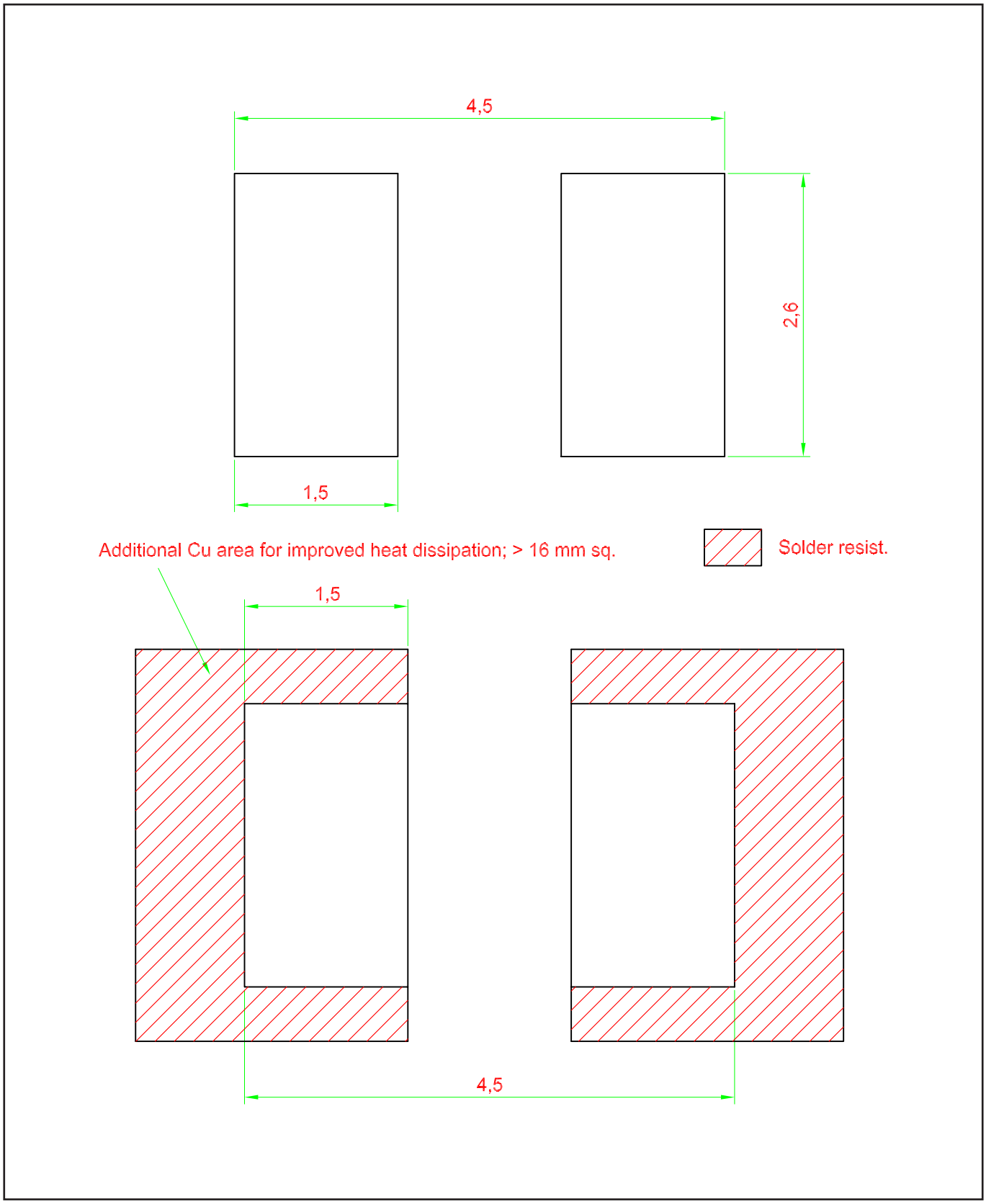


Notes: Primary thermal path is through Anode lead of LED package

Material

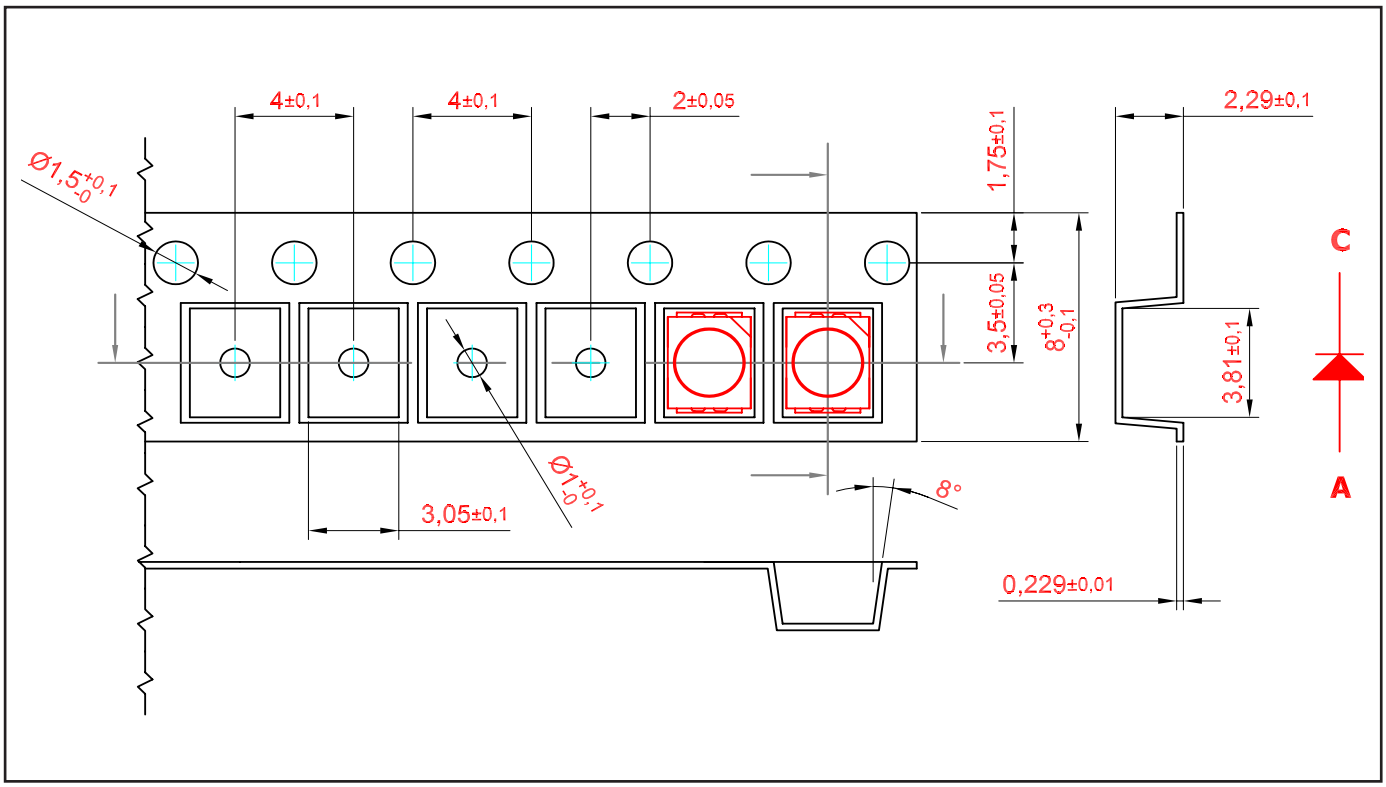
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad

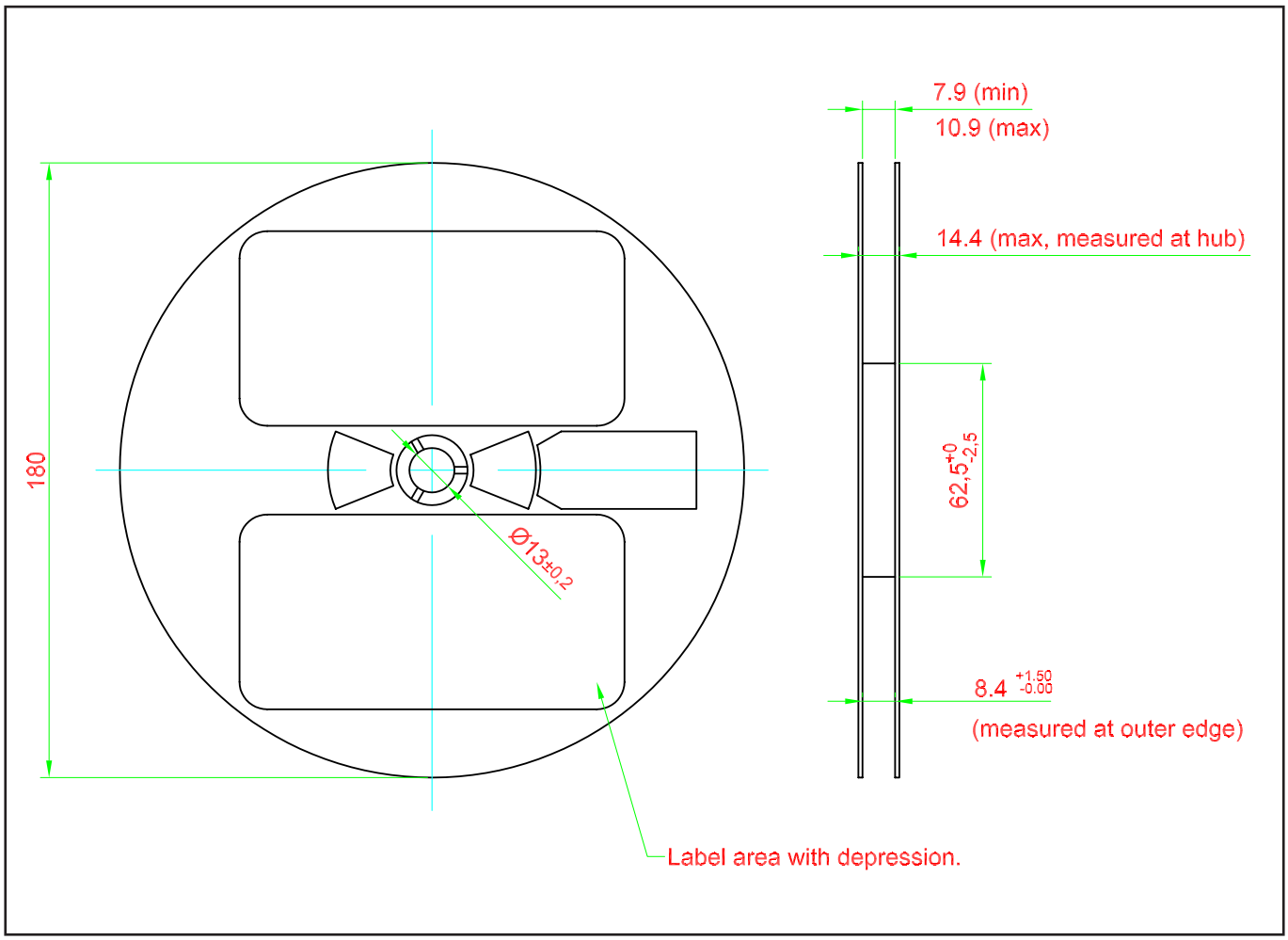


Taping and orientation

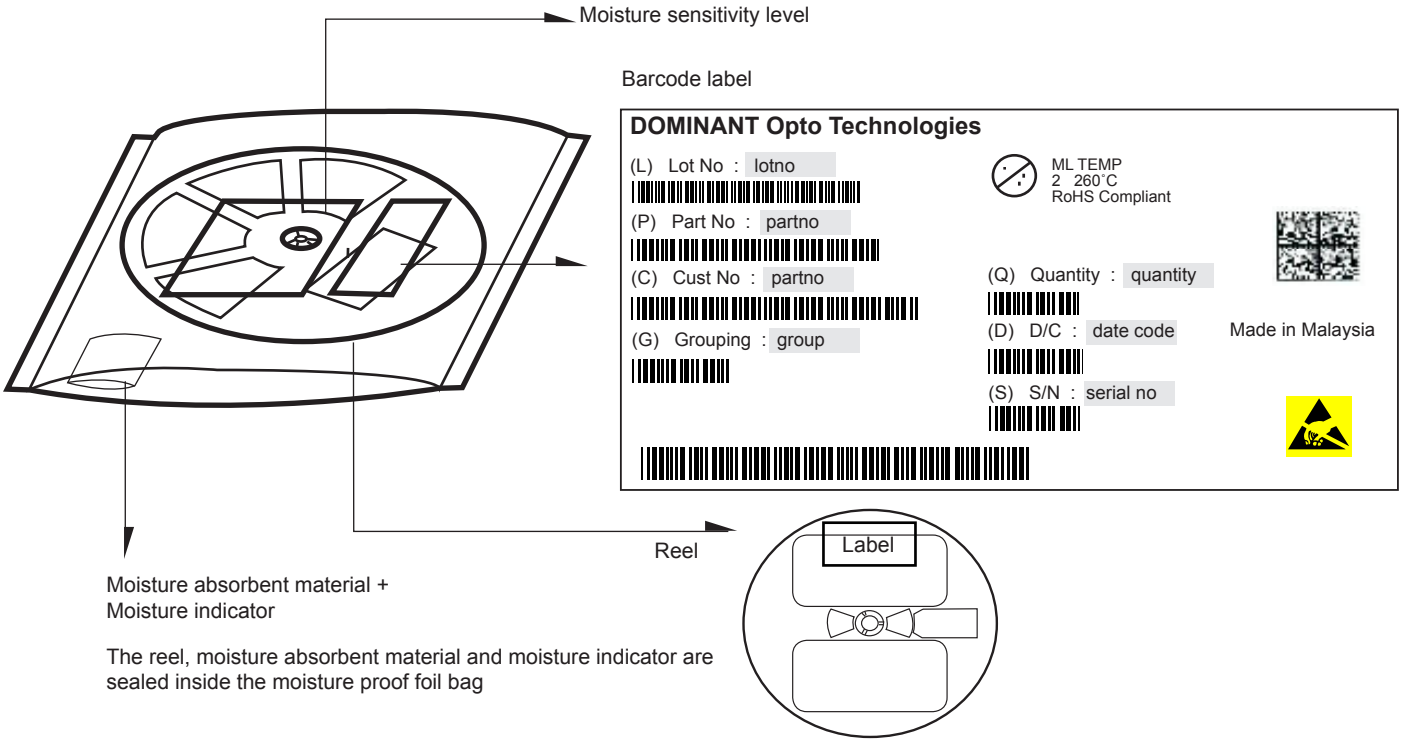
- Reels come in quantity of 2000 units.
- Reel diameter is 180 mm.



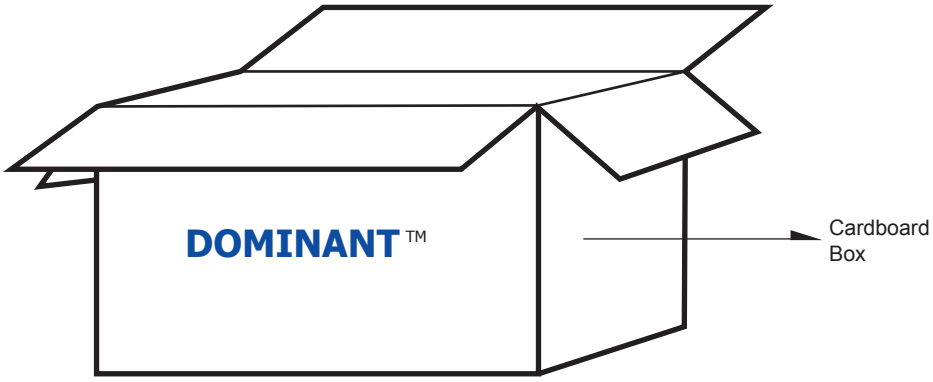
Packaging Specification



Packaging Specification



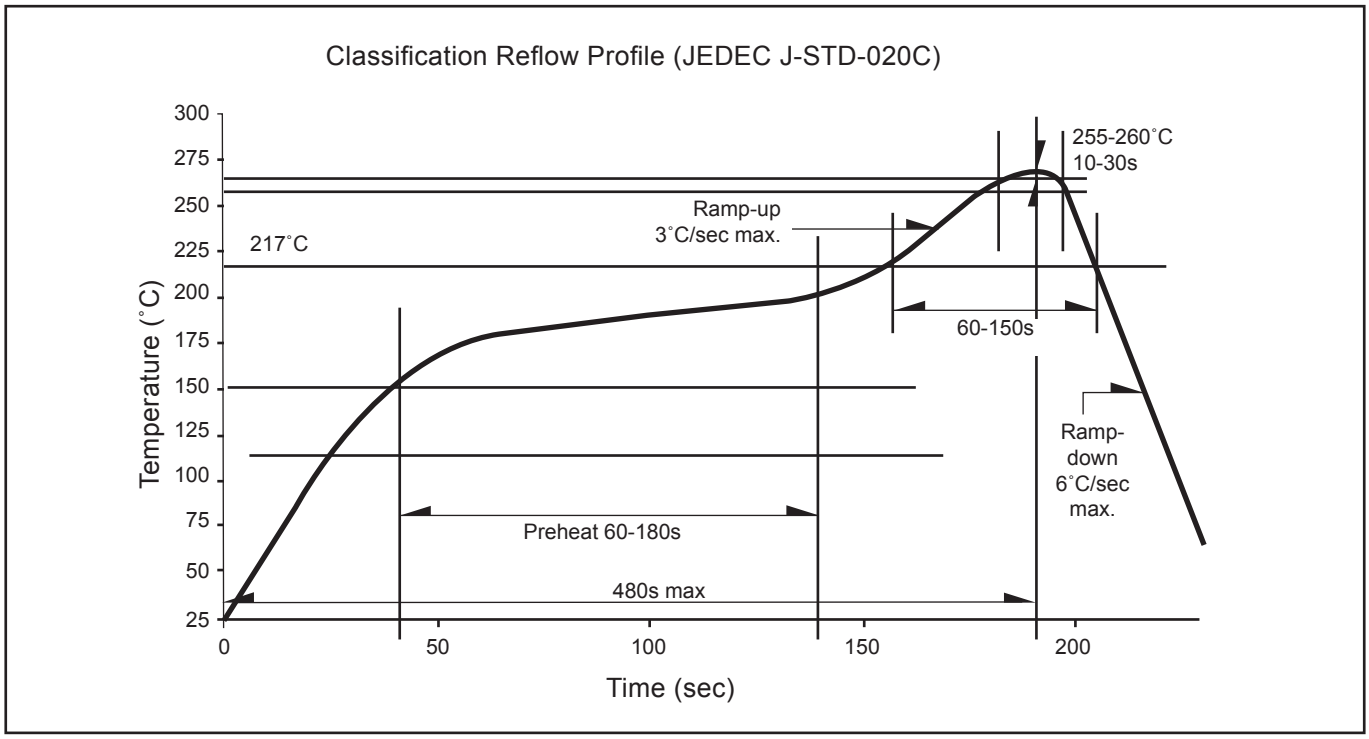
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	**0.034**	**240 ± 10**



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



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).

1.3 Radiant 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).

1.4 Radiant 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	27 Sep 2017
1	Typo Error on Features and Product Photo	17 Oct 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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