DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

Mini DomiLED

AlInGaP : DNx-CRS-I5

Mini DomiLED

Synonymous with function and performance, the Mini 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.
> Qualified according to JEDEC moisture sensitivity Level 2.
> Compatible to IR reflow soldering.
> Environmental friendly; RoHS compliance.
> Passed H2S test. *Appx. 4.1*
> Compliance to automotive standard; AEC-Q101.

Applications:

> Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
> Backlighting: button, LCD display

Optical Characteristics at Tj=25˚C

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ 5mA IV (mcd) Appx. 1.1 Min.	Typ.	Max.
DNS-CRS-NP2-1-I5	Super-red, 632nm	120	28.50	45.00	71.50
DNO-CRS-PQ2-1-I5	Orange, 605nm	120	45.00	71.50	112.50
DNY-CRS-NP2-1-I5	Yellow, 587nm	120	28.50	45.00	71.50

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 5mA Appx. 3.1 Min. (V)	Typ. (V)	Max. (V)	Vr @ Ir = 10uA Min. (V)
DNx-CRS	1.55	1.85	2.30	12

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	30	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005)	DNS, DNO: 800 | DNY: 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)	75	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)	 580 330	 K/W K/W

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ dom (typ) I_F = 5mA; 0 ˚C <= T <= 100 ˚C	TC_λ dom (typ)	DNS-CRS DNO-CRS DNY-CRS	0.04 0.07 0.09	nm / K
Temperature coefficient of V_F (typ) I_F = 5mA; 0 ˚C <= T <= 100 ˚C	TC_V	DNS-CRS DNO-CRS DNY-CRS	-2.7 -1.9 -1.9	mV / K
Temperature coefficient of I_V (typ) I_F = 5mA; 0 ˚C <= T <= 100 ˚C	TC_{IV}	DNS-CRS DNO-CRS DNY-CRS	-0.56 -0.68 -1.13	% / K

Luminous Intensity Group at Tj=25˚C

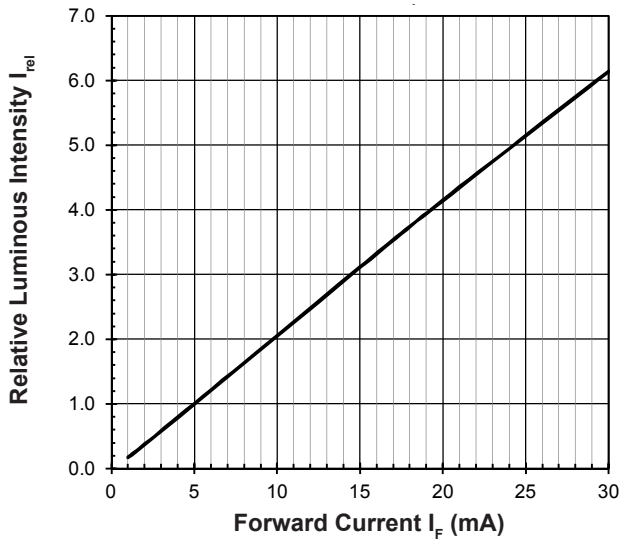
Brightness Group	Luminous Intensity IV (mcd) *Appx. 1.1*
N1	28.50 ... 35.50
N2	35.50 ... 45.00
P1	45.00 ... 56.00
P2	56.00 ... 71.50
Q1	71.50 ... 90.00
Q2	90.00 ... 112.50

Wavelength Grouping at Tj=25˚C

Color	Group	Wavelength distribution (nm) *Appx. 2.2*
DNS; Super-red	Full	625 - 640
DNO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
DNY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

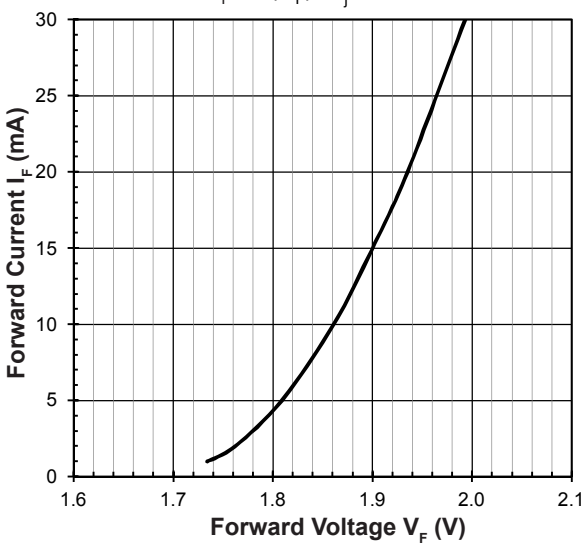
Relative Luminous Intensity Vs Forward Current

$I_V/I_V(5mA) = f(I_F)$; Tj = 25°C



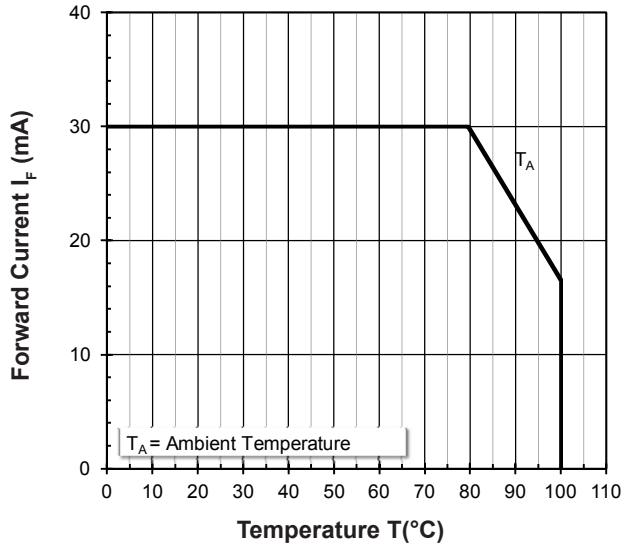
Forward Current Vs Forward Voltage

$I_F = f(V_F)$; T_j = 25°C



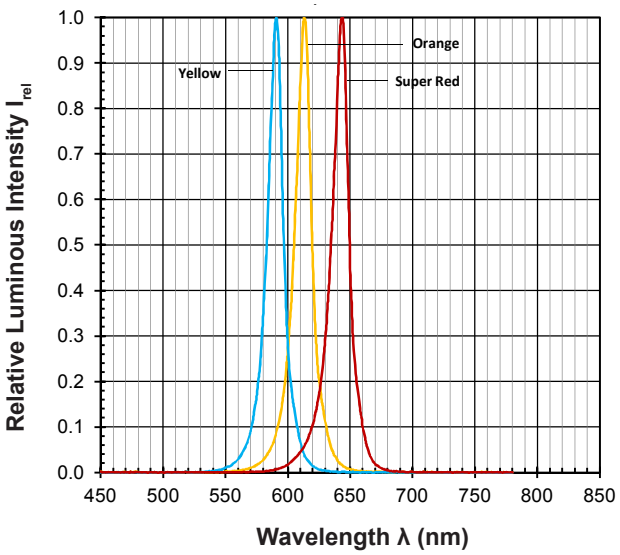
Maximum Current Vs Temperature

$I_F=f(T)$



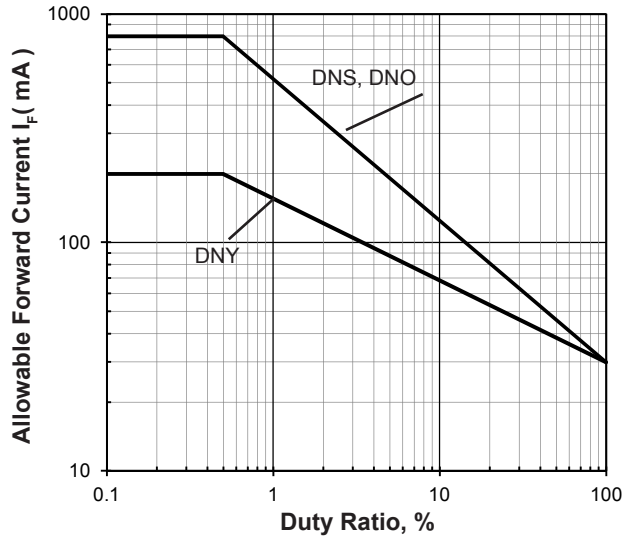
Relative Spectral Emission

$I_{rel} = f(\lambda)$; T_j = 25°C; I_F = 5mA

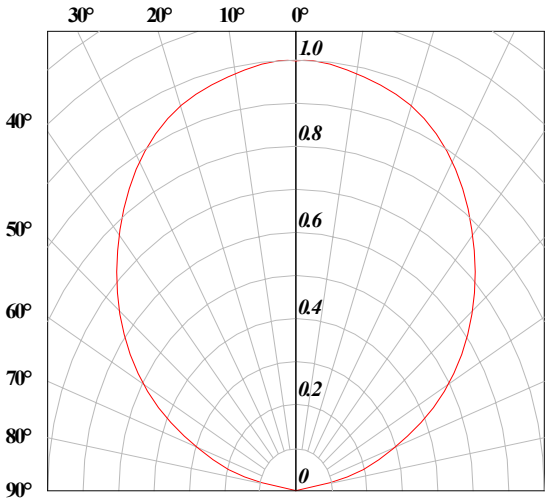


Allowable Forward Current Vs Duty Ratio

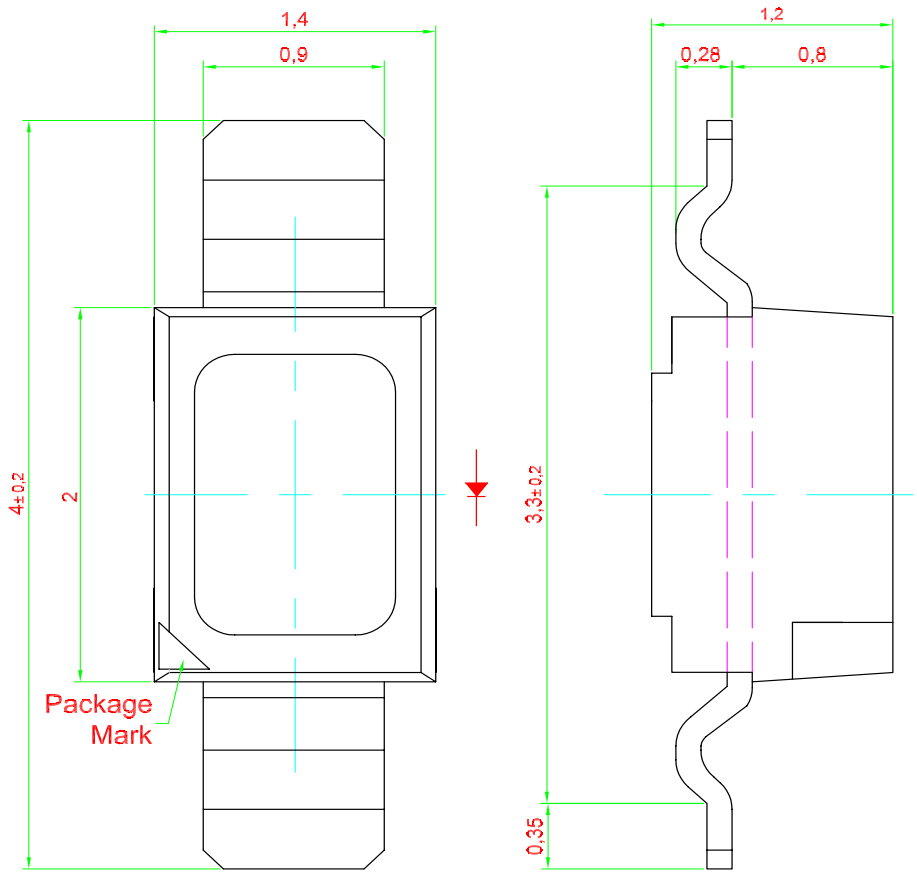
(T_j = 25°C; $t_p \leq 10\mu s$)



Radiation Pattern



Mini DomiLED • AlInGaP : DNx-CRS-I5 Package Outlines

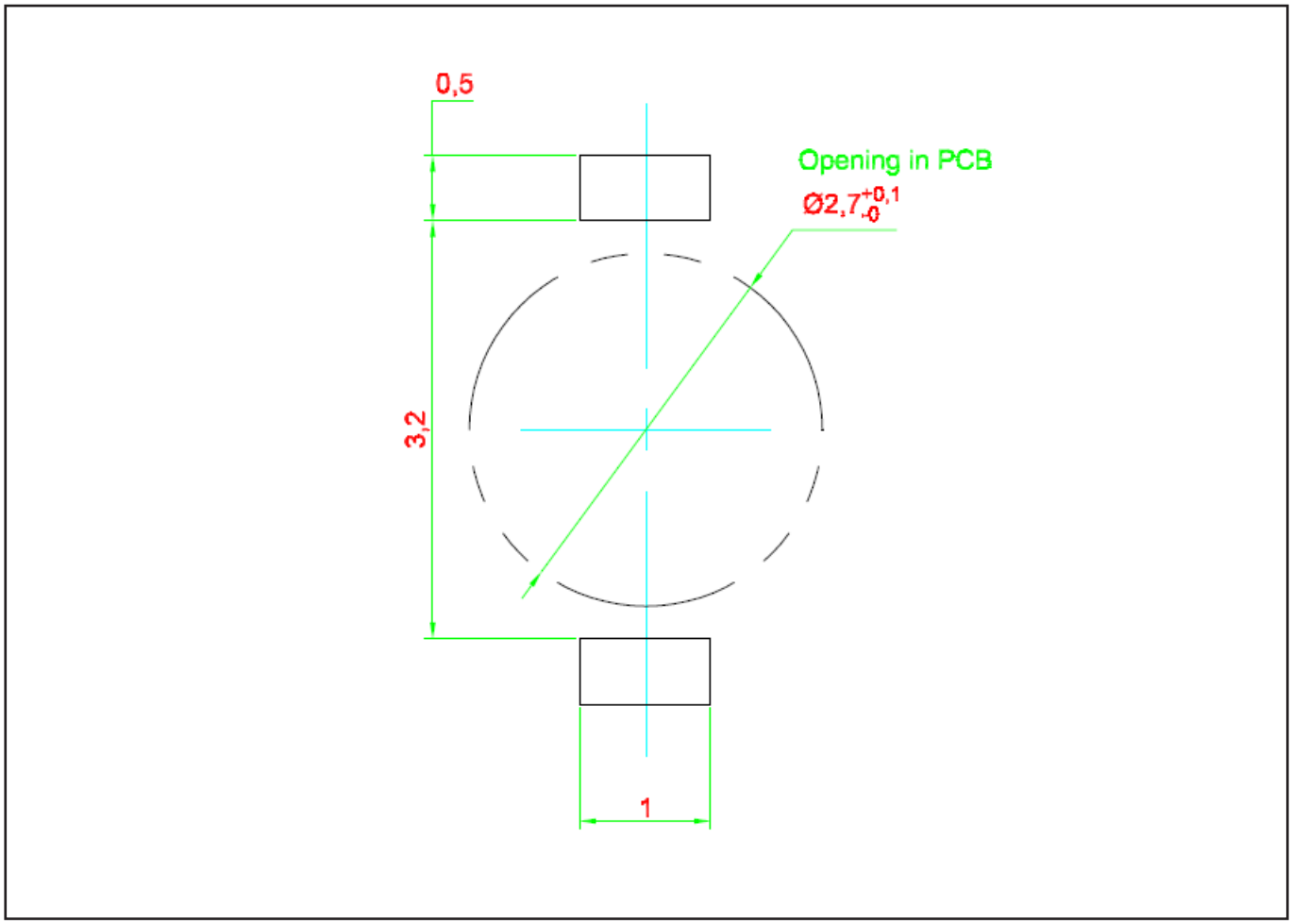


Note : Primary thermal path is through Cathode lead of LED package
General Tolerances ± 0.10

Material

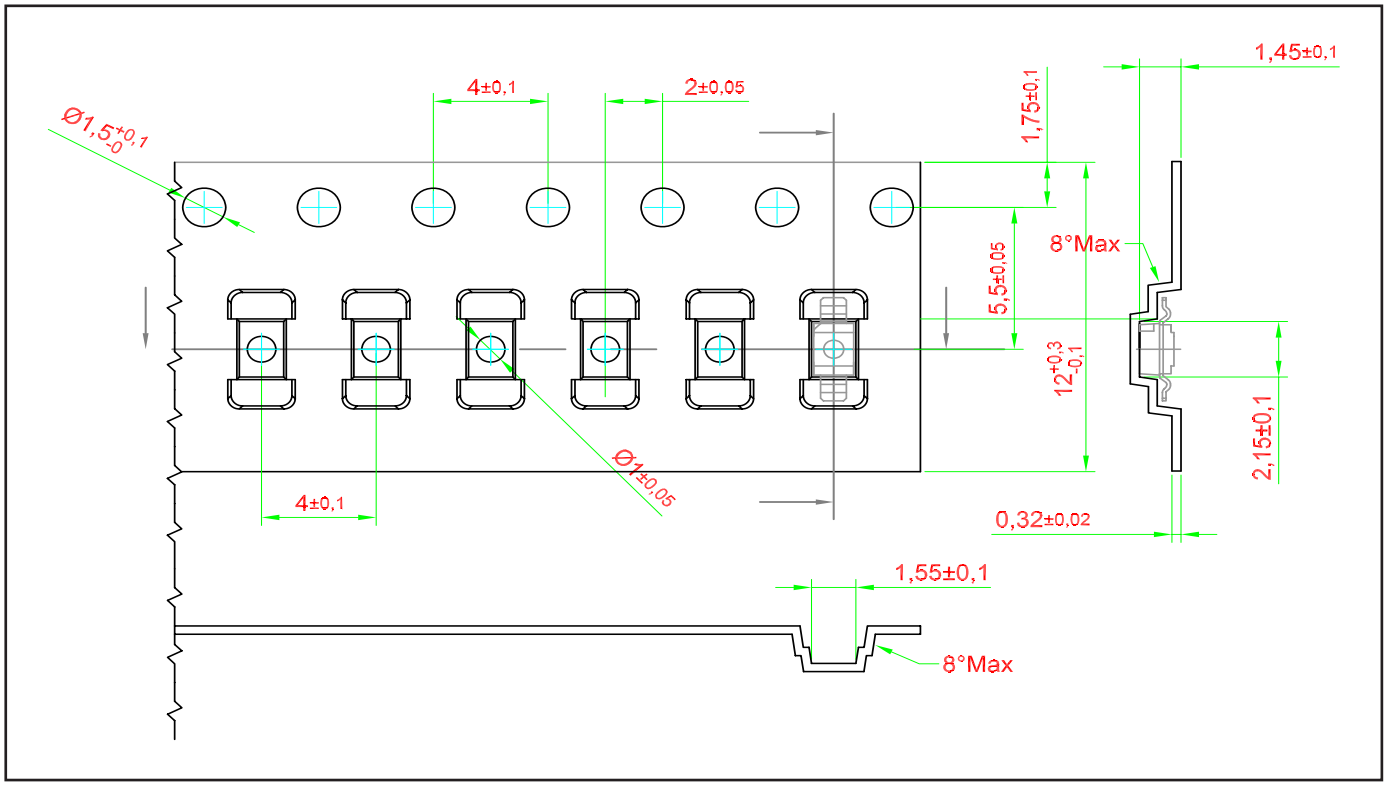
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad

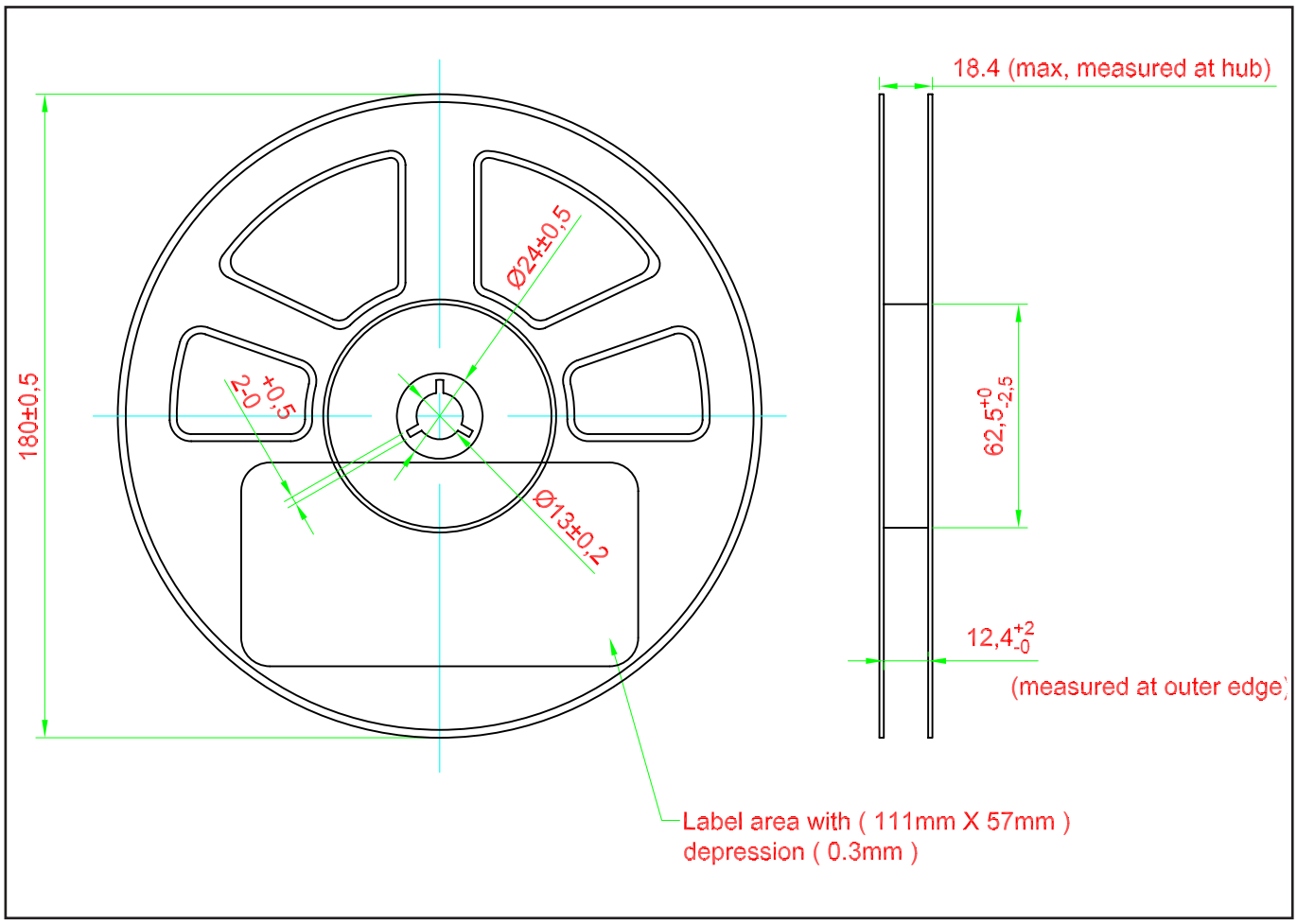


Taping and orientation

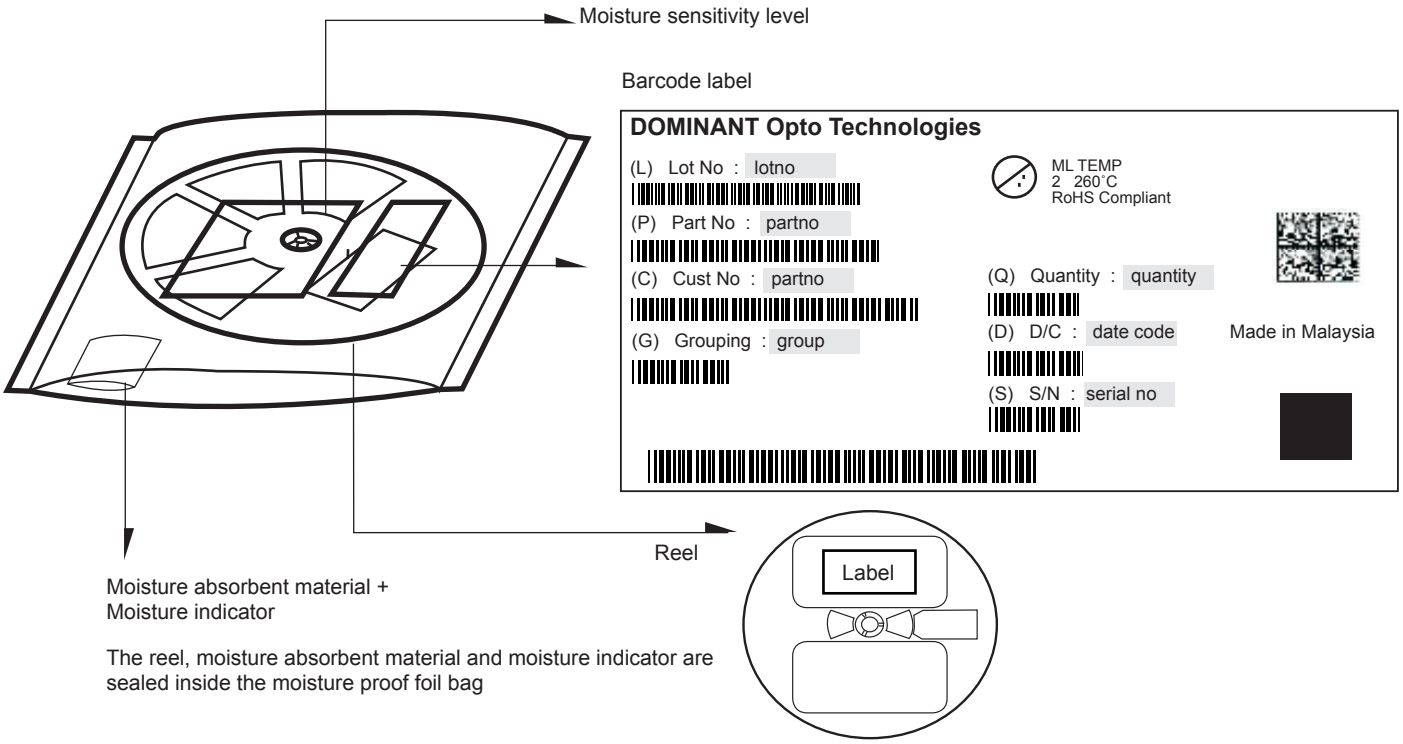
- Reels come in quantity of 3000 units.
- Reel diameter is 180 mm.



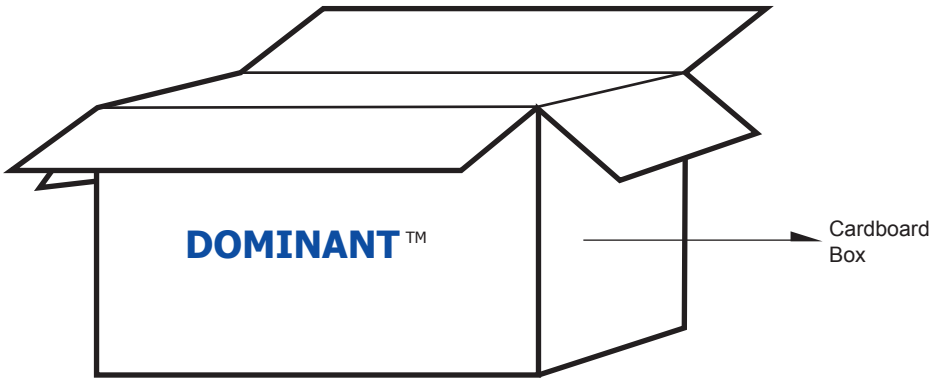
Packaging Specification



Packaging Specification



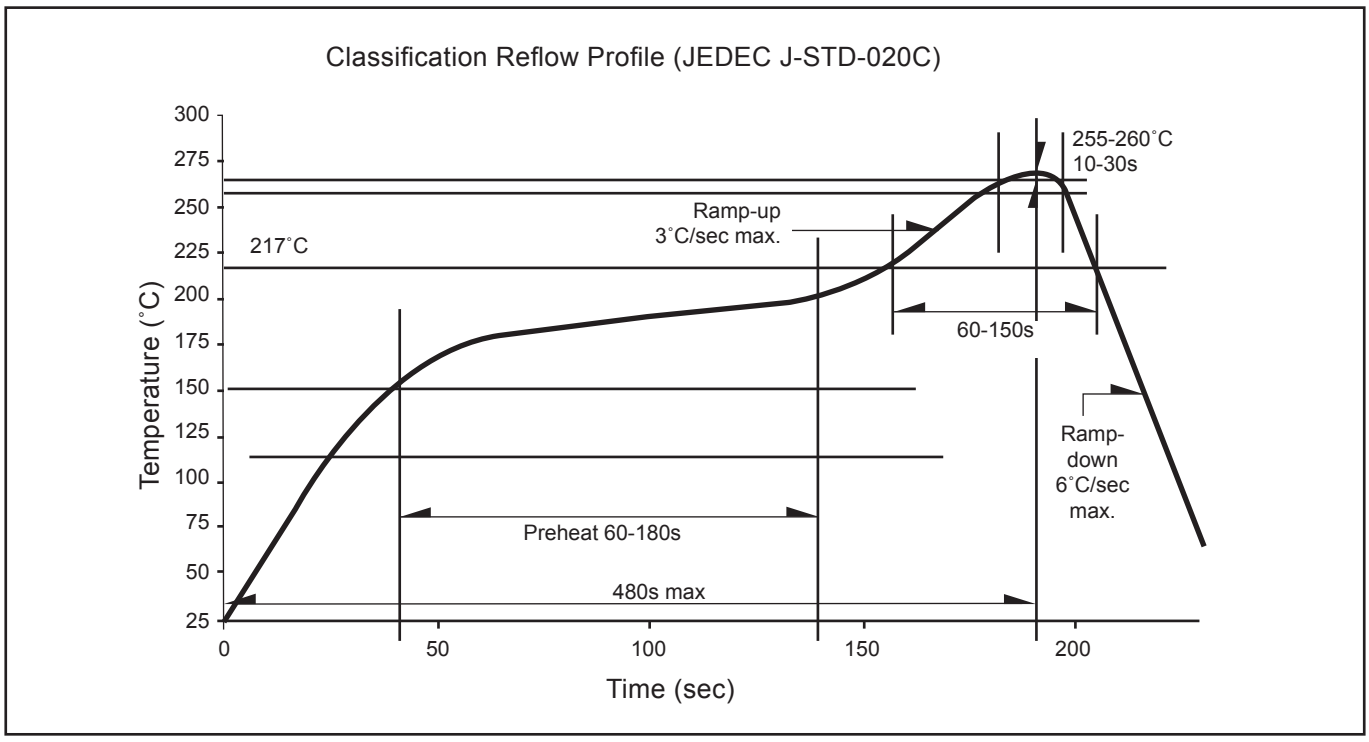
	Average 1pc Mini DomiLED	1 completed bag (3000pcs)
Weight (gram)	**0.007**	**200 ± 10**



For Mini 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).

4) Corrosion Resistant:

4.1 Test conditions: IEC 60068-2-43 (H2S) [40 °C / 90 % rh / 15 ppm H2S / 336 h].

Revision History

Page	Subjects	Date of Modification
-	Initial Release	27 Jul 2016

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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