DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

Mini DomiLED

InGaN : DNx-JJG-I1

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.
- > Based on InGaN technology.
- > 120° viewing angle.
- > Small package outline (LxWxH) of 2.0 x 1.4 x 1.3mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Compliance to automotive standard; AEC-Q101.
- > Passed Corrosion Resistant Test. *Appx. 7.1*

Applications:

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

Optical characteristics at Tj=25^{0}C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 10mA IV (mcd) *Appx. 1.1*		
			Min.	Typ.	Max.
● DNT-JJG-Q2S1-1-I1	True Green, 525nm	120	90.00	140.00	224.00

● Not for new design.

Electrical Characteristics at Tj=25^{0}C

Part Number	Vf @ If = 10 mA *Appx. 3.1*			Vr @ Ir = 10 µA *Appx. 6.1*
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DNx-JJG	2.7	2.9	3.3	5.0

Absolute Maximum Ratings

	Maximum Value	Unit
DC Forward Current	20	mA
Peak Pulse Current; (tp ≤ 10µs, Duty cycle = 0.005)	100	mA
Reverse Voltage *Appx. 6.1*	5	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)	70	mW
Thermal resistance		
- Real Thermal Resistance		
Junction / ambient, $R_{th\ JA\ real}$	490	K/W
Junction / solder point, $R_{th\ JS\ real}$	250	K/W
- Electrical Thermal Resistance		
Junction / ambient, $R_{th\ JA\ el}$	480	K/W
Junction / solder point, $R_{th\ JS\ el}$	240	K/W
(Mounting on FR4 PCB, pad size >= 16 mm^2 per pad)		

Wavelength Grouping at Tj=25^{0}C

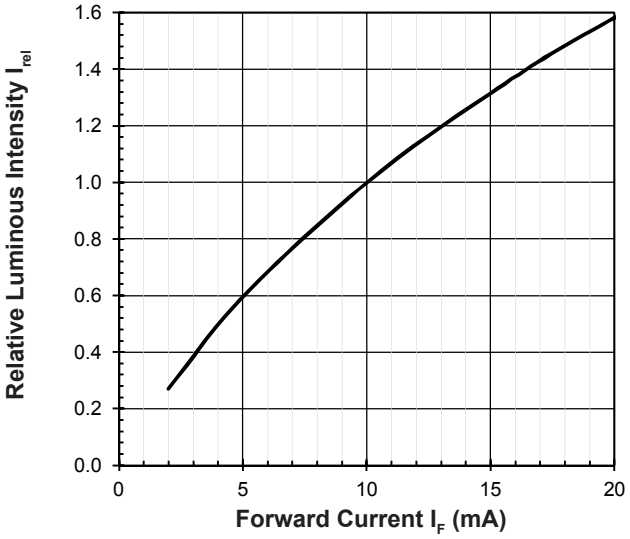
Color	Group	Wavelength distribution (nm) *Appx. 2.2*
DNT; True Green	Full	520 - 535
	A	520 - 525
	B	525 - 530
	C	530 - 535

Luminous Intensity Group at Tj=25˚C

Brightness Group	Luminous Intensity *Appx. 1.1* IV (mcd)
Q2	90.0 ... 112.5
R1	112.5 ... 140.0
R2	140.0 ... 180.0
S1	180.0 ... 224.0

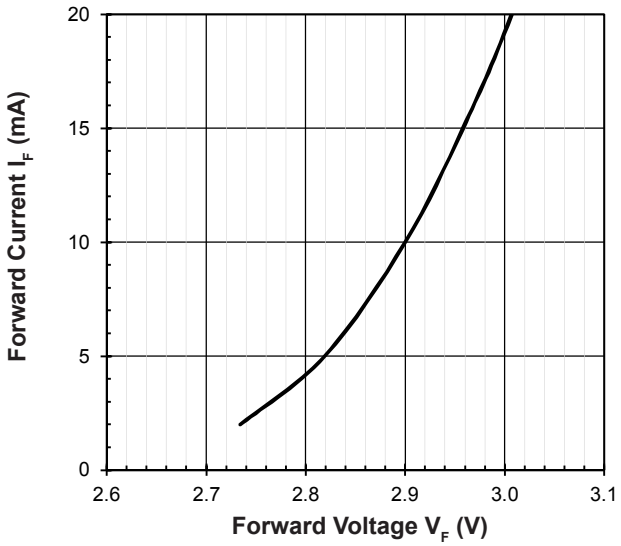
Relative Luminous Intensity Vs Forward Current

$I_V/I_V(10mA) = f(I_F)$; Tj = 25°C



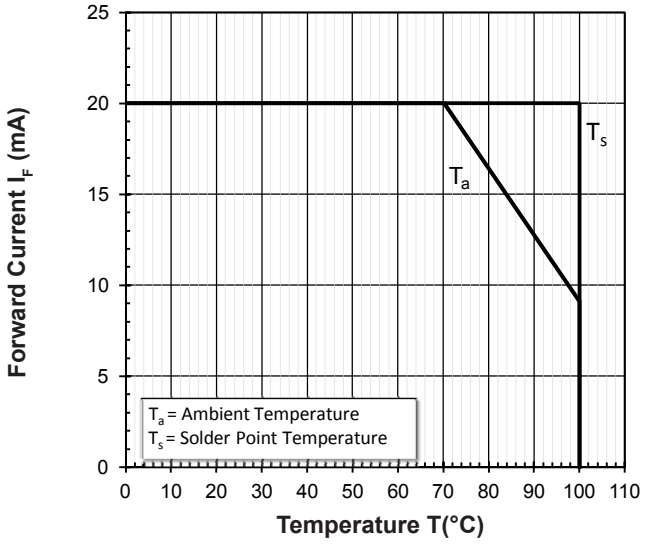
Forward Current Vs Forward Voltage

$I_F = f(V_F)$; T_j = 25°C



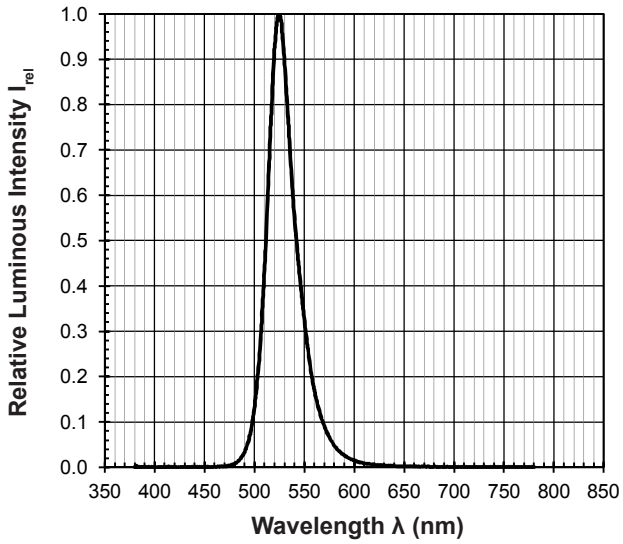
Maximum Current Vs Temperature

$I_F=f(T)$



Relative Spectral Emission

$I_{rel} = f(\lambda)$; T_j = 25°C; I_F = 10mA

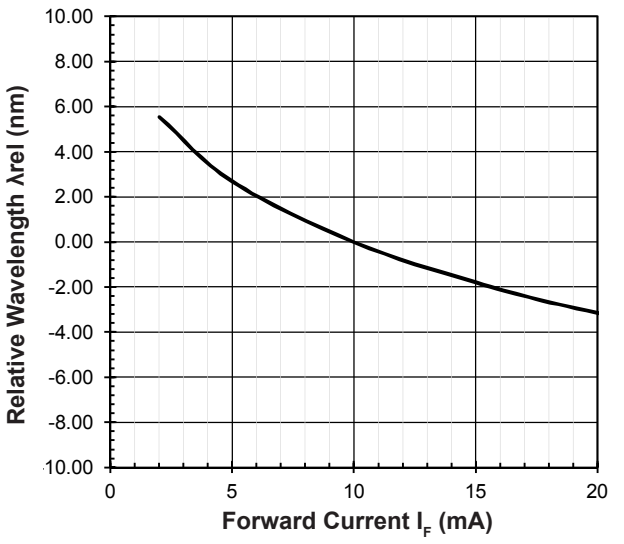


Allowable Forward Current Vs Duty Ratio

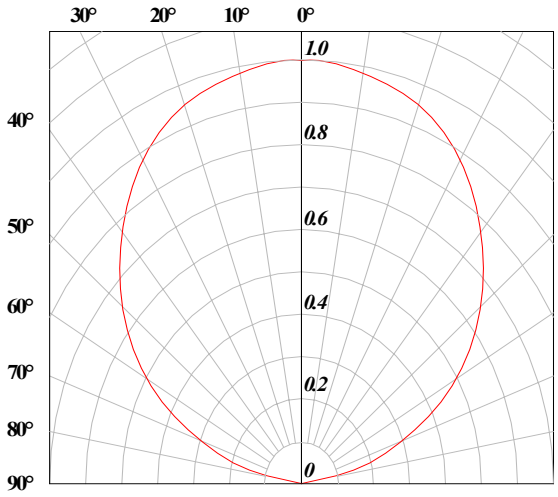
(T_j = 25°C; $t_p \leq$ 10µs)

Relative Wavelength Shift Vs Forward Current

λdom = $f(I_F)$; Tj = 25°C

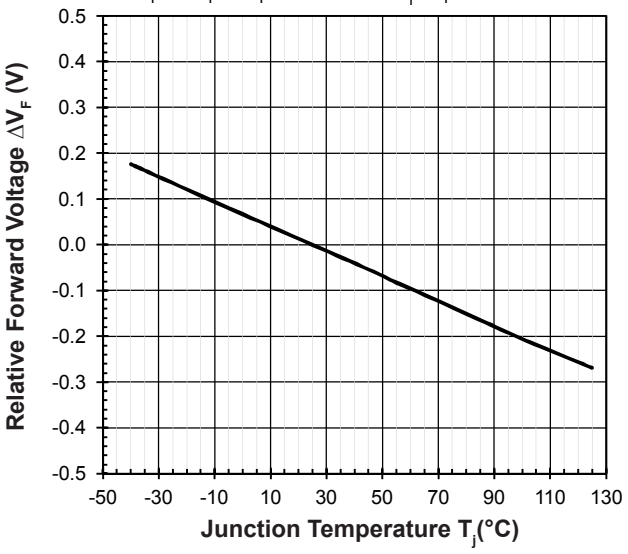


Radiation Pattern



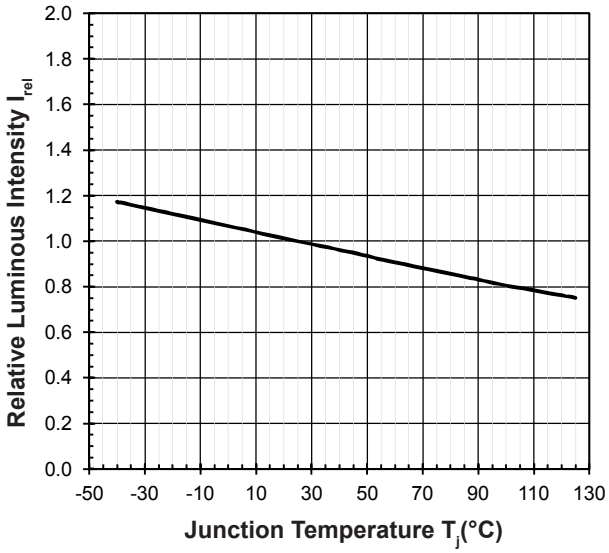
Relative Forward Voltage Vs Junction Temperature

$\Delta V_F = V_F - V_F(25°C) = f(T_j)$; I_F =10mA



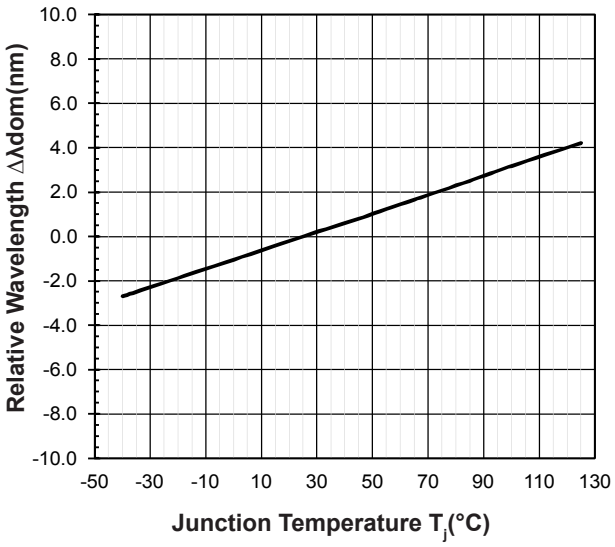
Relative Luminous Intensity Vs Junction Temperature

$I_V/I_V(25°C) = f(T_j)$; I_F = 10mA

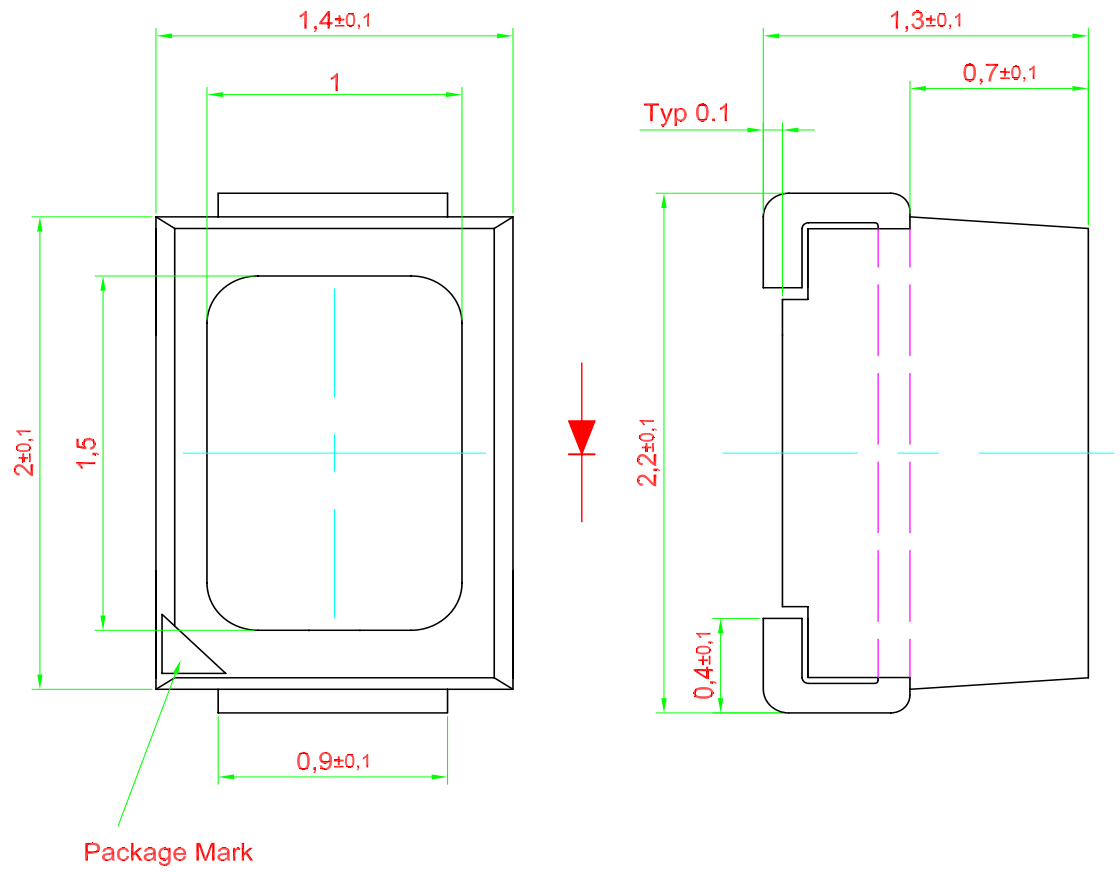


Relative Wavelength Vs Junction Temperature

$\Delta\lambda dom = \lambda dom - \lambda dom\ (25°C) = f(T_j)$; I_F =10mA



Mini DomiLED • InGaN: DNx-JJG-I1 Package Outlines

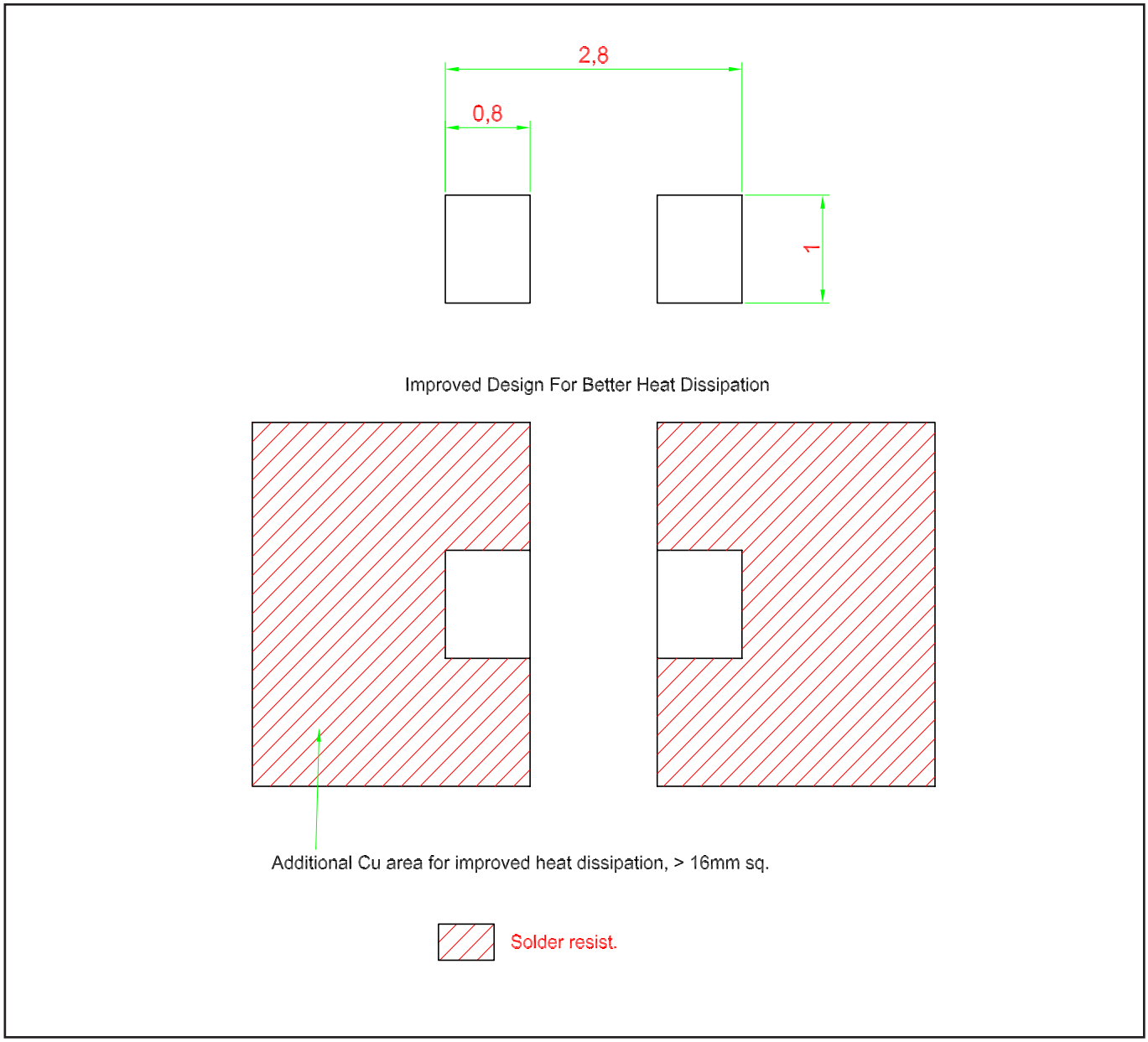


Note : Primary thermal path is through Cathode lead of LED package

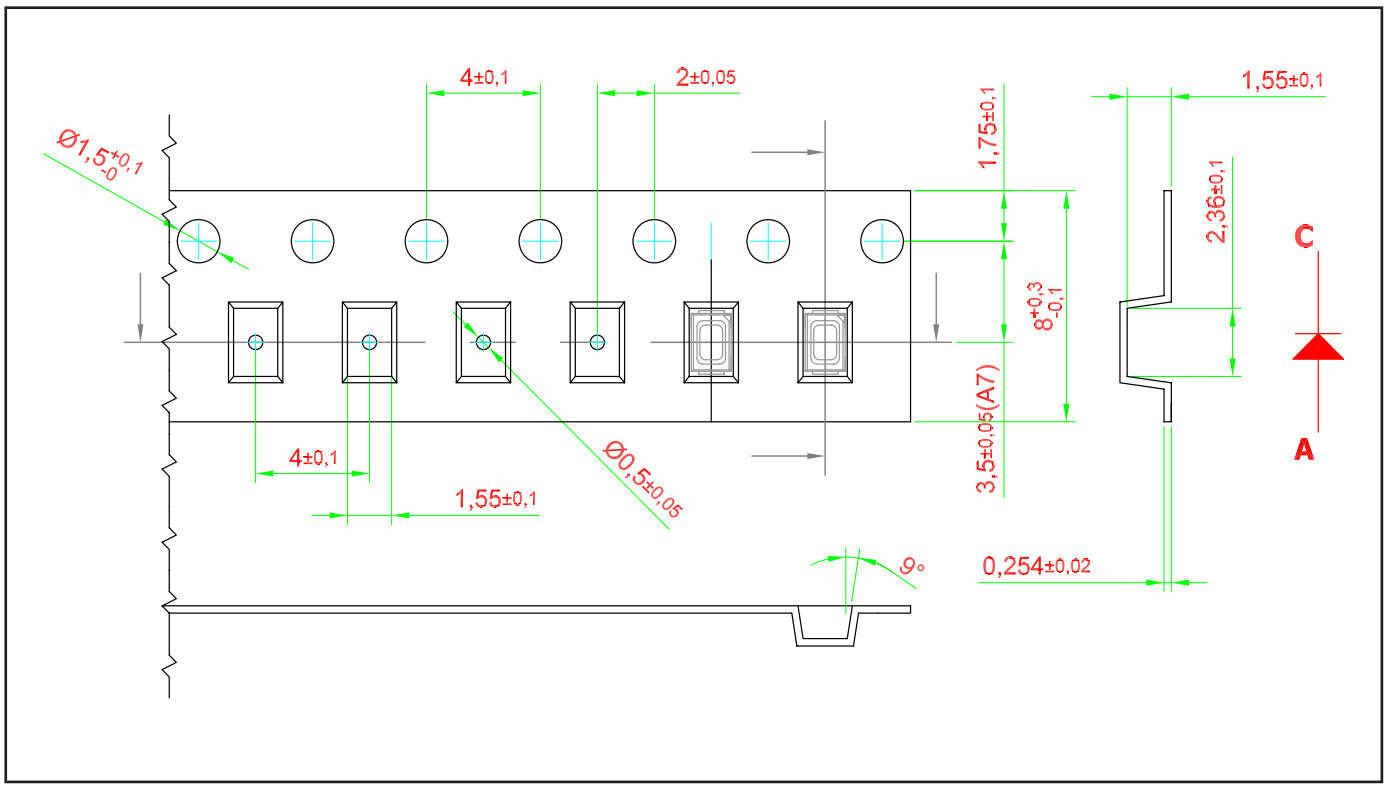
Material

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

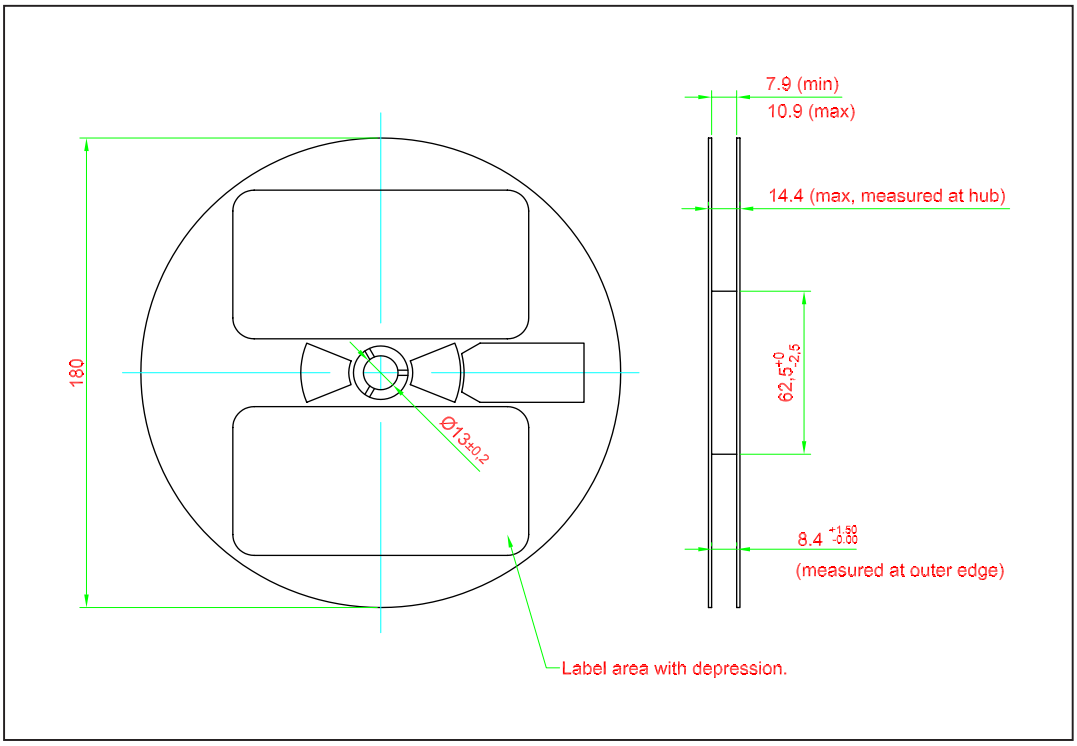
Recommended Solder Pad

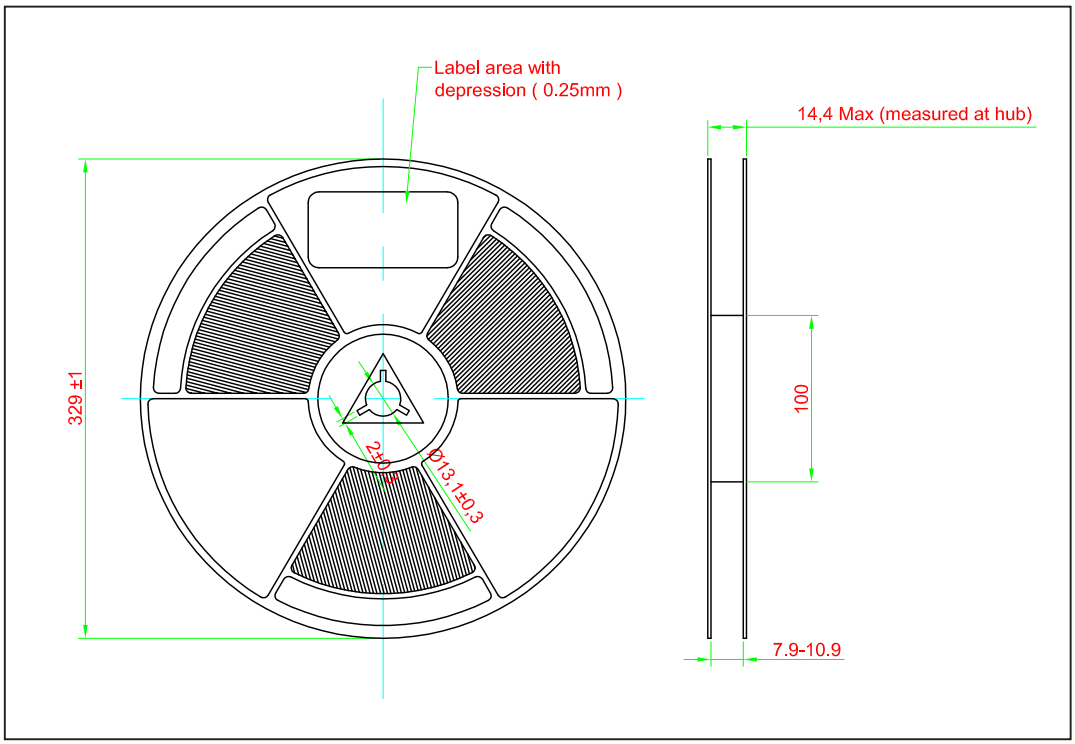


Taping and orientation



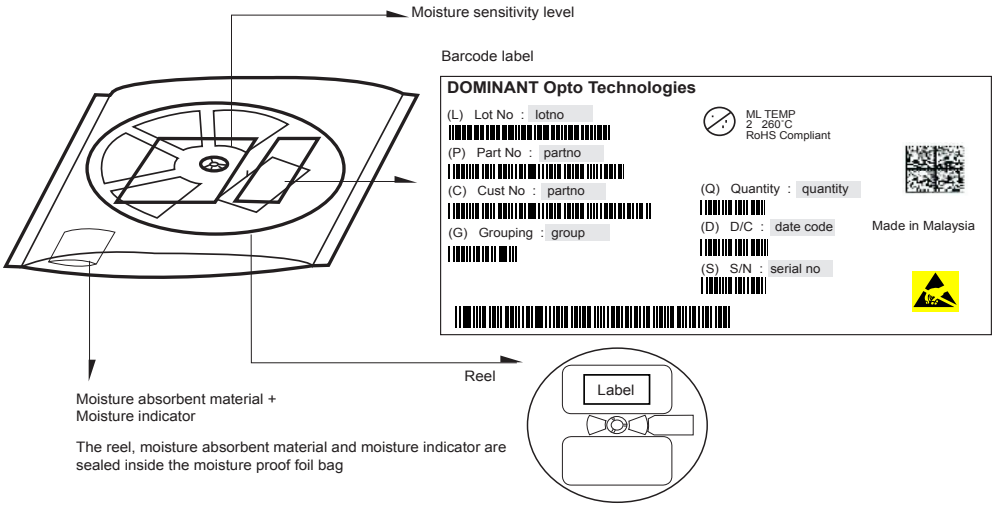
Packaging Specification



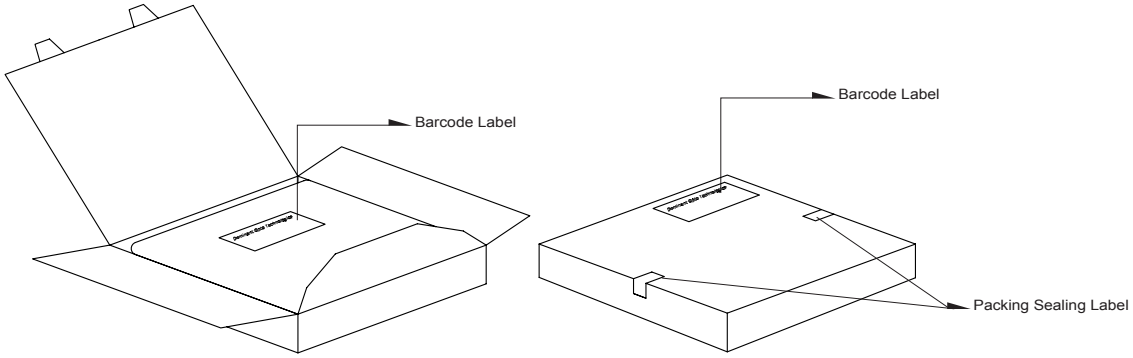


	Reel Diameter (mm)	Quantity (pcs)	Partno
Standard Packing	180	3000	DNx-JJG-xxx-x-I1
Optional Packing	329	10000	DNx-JJG-xxx-x-I1-J

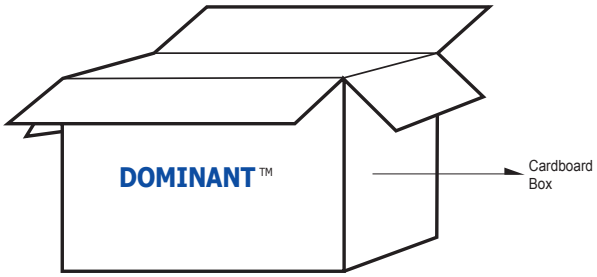
Packaging Specification



Quantity per bag (pcs)	Average 1pc Mini DomiLED (gram)	1 completed bag (gram)
3000	0.007	200 ± 10
10000	0.007	550 ± 10

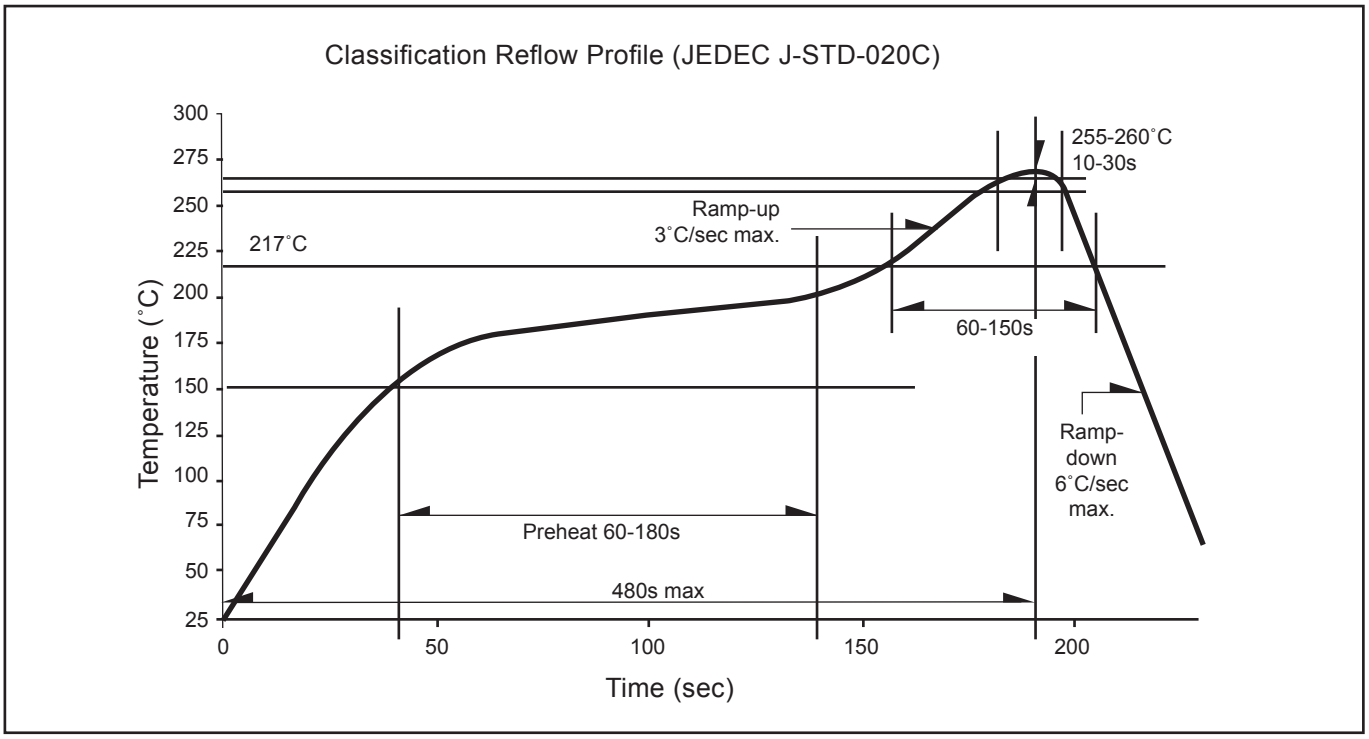


Reel Diameter (mm)	Packing Box Dimensions (mm)
180	210 x 210 x 16
329	345 x 345 x 16



Reel Diameter (mm)	Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
180	Super Small	325 x 225 x 190	0.38	9 reels MAX
180	Small	325 x 225 x 280	0.54	15 reels MAX
180	Medium	570 x 440 x 230	1.46	60 reels MAX
180	Large	570 x 440 x 460	1.92	120 reels MAX
329	Medium	373 x 373 x 285	1.02	13 reels MAX
329	Large	580 x 373 x 405	1.50	30 reels MAX

Recommended Pb-free Soldering Profile



Appendix

1) Brightness:

1.1 Luminous intensity is measured at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 when a current pulse of 8 ms(typ) 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) Typical Values:

4.1 At special conditions of LED manufacturing processes, typical data or calculated correlations of technical parameters only reflect the statistical figures. But not necessarily correspond to the actual parameters of each single product, which could differ from the typical data or calculated correlations or the typical characteristic line. These typical data may change whenever technical improvements happen.

5) Tolerance of Measure

5.1 Unless otherwise noted in drawing, tolerances are specified with ± 0.1 and dimension are specifiec in mm.

6) Reverse Voltage:

6.1 Not designed for reverse operation. Continuous reverse voltage can cause migration and LED damage.

7) Corrosion Robustness:

7.1 Test conditions: 40 °C / 90 % rh / 15 ppm H_2S / 336 h.

= Stricter than IEC 60068-2-43 (H_2S) [25 °C / 75% rh / 10 ppm H_2S / 21 days].

Revision History

Page	Subjects	Date of Modification
-	Initial Release	06 Feb 2017
8	Error on Taping and Orientation	06 Apr 2017
2, 9, 10, 11, 12	Not for New Design: DNT-JJG-Q2S1-1-I1 Update Packaging Specification Update Appendix	06 Aug 2020

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, an IATF 16949 and ISO 14001 certified company, can be found under http://www.dominant-semi.com.

Please contact us for more information:

DOMINANT Opto Technologies Sdn. Bhd.
Lot 6, Batu Berendam, FTZ Phase III, 75350 Melaka, Malaysia
Tel: (606) 283 3566 Fax: (606) 283 0566
E-mail: sales@dominant-semi.com