DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

SPNova™

InGaN : NPx-WSG

SPNova™

Featuring a staggering brilliance and significant flux output, the SPNova™ showcases the latest technological advent in this range. With its extremely high level of brightness and the ultra low high profile, which is only 1.5 mm are highly suitable for both conventional lighting and specialized application such as automotive signal lights, traffic lights, channel lights, tube lights and garden lights among others.

Features:

- Super high brightness surface mount LED.
- High flux output.
- 120° viewing angle.
- Compact package outline (LxWxH) of 6.0 x 6.0 x 1.5mm.
- Ultra low height profile - 1.5 mm.
- Designed for high current drive; typically 350 mA.
- Low thermal resistance; Rth (js) = 20 K/W.
- Qualified according to JEDEC moisture sensitivity Level 2.
- Compatible to both IR reflow soldering.
- Environmental friendly; RoHS compliance.

Applications:

- Automotive: exterior applications, eg: Center High Mounted Stop Light (CHMSL), Rear Combination Lights (RCLs), Signal lighting, Fog-lamp, etc.
- Communication: indicator and backlight in mobilephone.
- Industry: white goods (eg: Oven, microwave, etc.).
- Lighting: garden light, architecture lighting, general lighting. etc

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Optical Characteristics at Tj=25˚C

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ 350mA (mcd)		
			Min.	Typ.	Max.
NPT-WSG-ADF-1	True Green, 525	120	14000.0	22400.0	28500.0
NPB-WSG-Y2Z-1	Blue, 470	120	3550.0	5350.0	7150.0

NOTE
1. Luminous intensity is measured with an accuracy of ± 11%.
2. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 350mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
NPx-WSG	3.0	3.6	4.0	5

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	350	mA
Pulse current	1000	mA
Reverse voltage	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	120	˚C
Operating temperature	-40 … +100	˚C
Storage temperature	-40 … +100	˚C

Wavelength Grouping at Tj=25˚C

Color	Group	Wavelength distribution (nm)
NPT; True Green	Full	520 - 535
	AO	520 - 525
	A	525 - 530
	B	530 - 535
NPB; Blue	Full	464 - 476
	A	464 - 470
	B	470 - 476

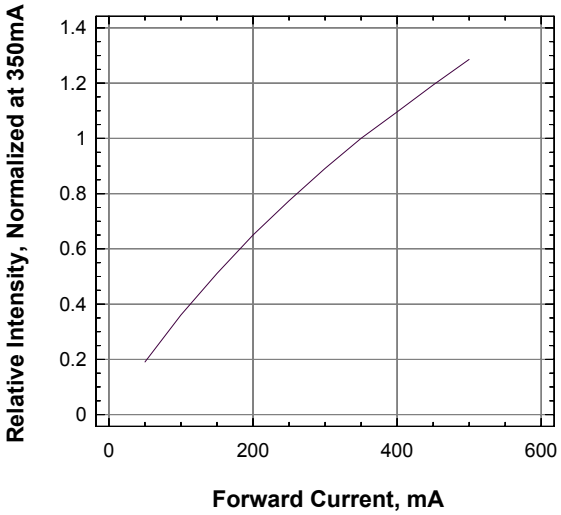
Dominant wavelength is measured with an accuracy of ± 1 nm.

Luminous Intensity Group at Tj=25˚C

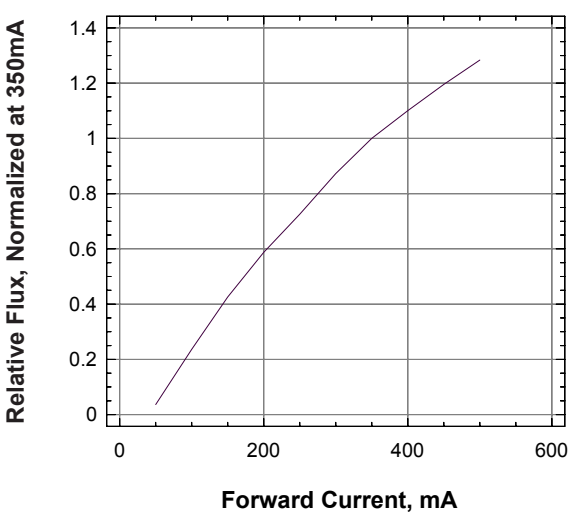
IV Bins	Luminous Intensity (mcd)
Y2	3550.0...4500.0
Z1	4500.0...5600.0
Z2	5600.0...7150.0
AD	14000.0...18000.0
AE	18000.0...22400.0
AF	22400.0...28500.0

Luminous intensity is measured with an accuracy of ± 11%.

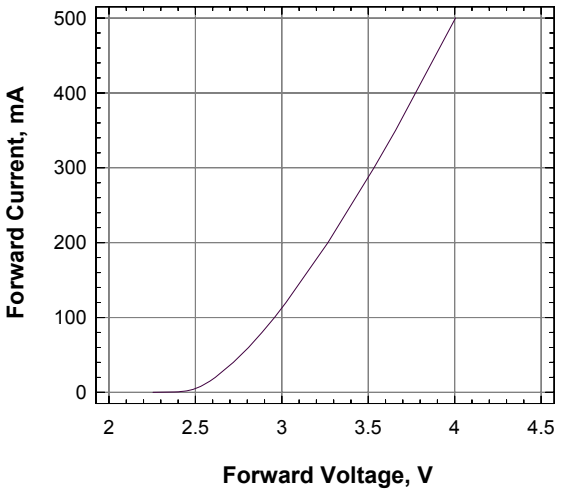
Wavelength Vs Forward Current



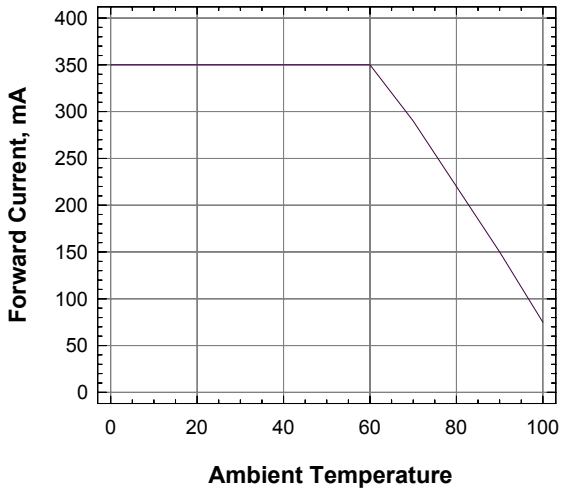
Relative Flux Vs Forward Current



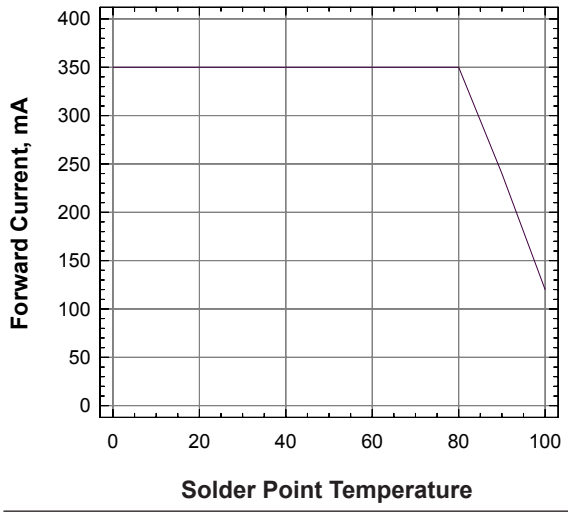
Forward Current Vs Forward Voltage



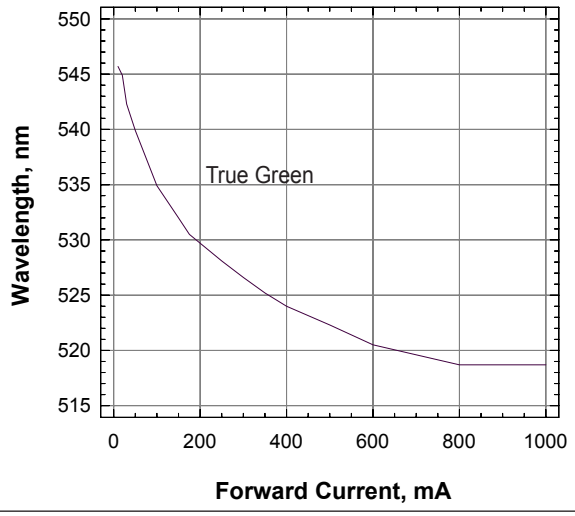
Forward Current Vs Ambient Temperature (Rja=40KW)



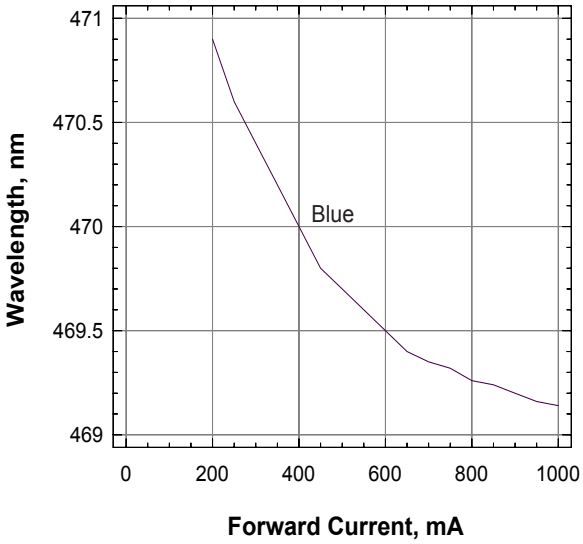
Forward Current Vs Solder Point Temperature



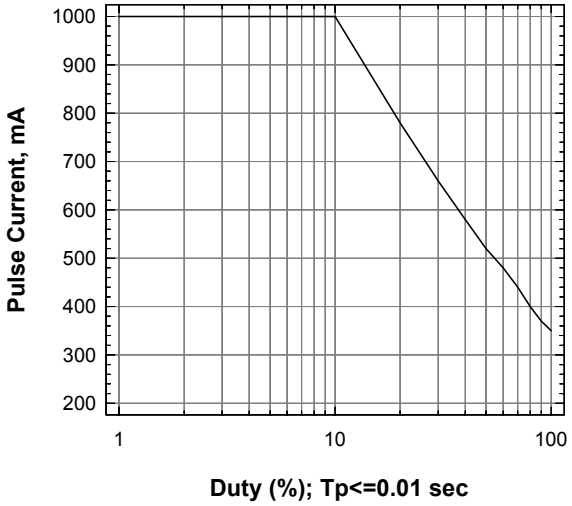
Wavelength Vs Forward Current



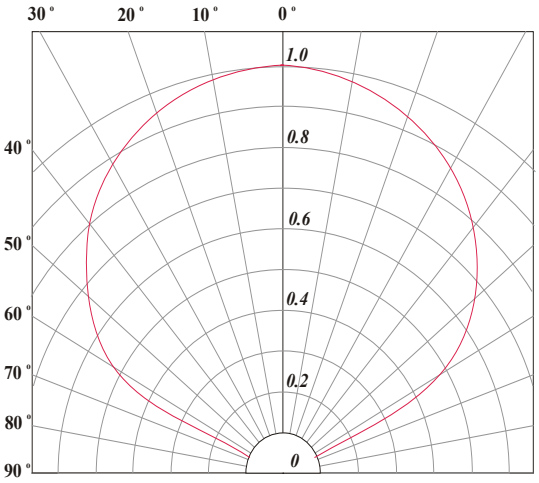
Wavelength Vs Forward Current



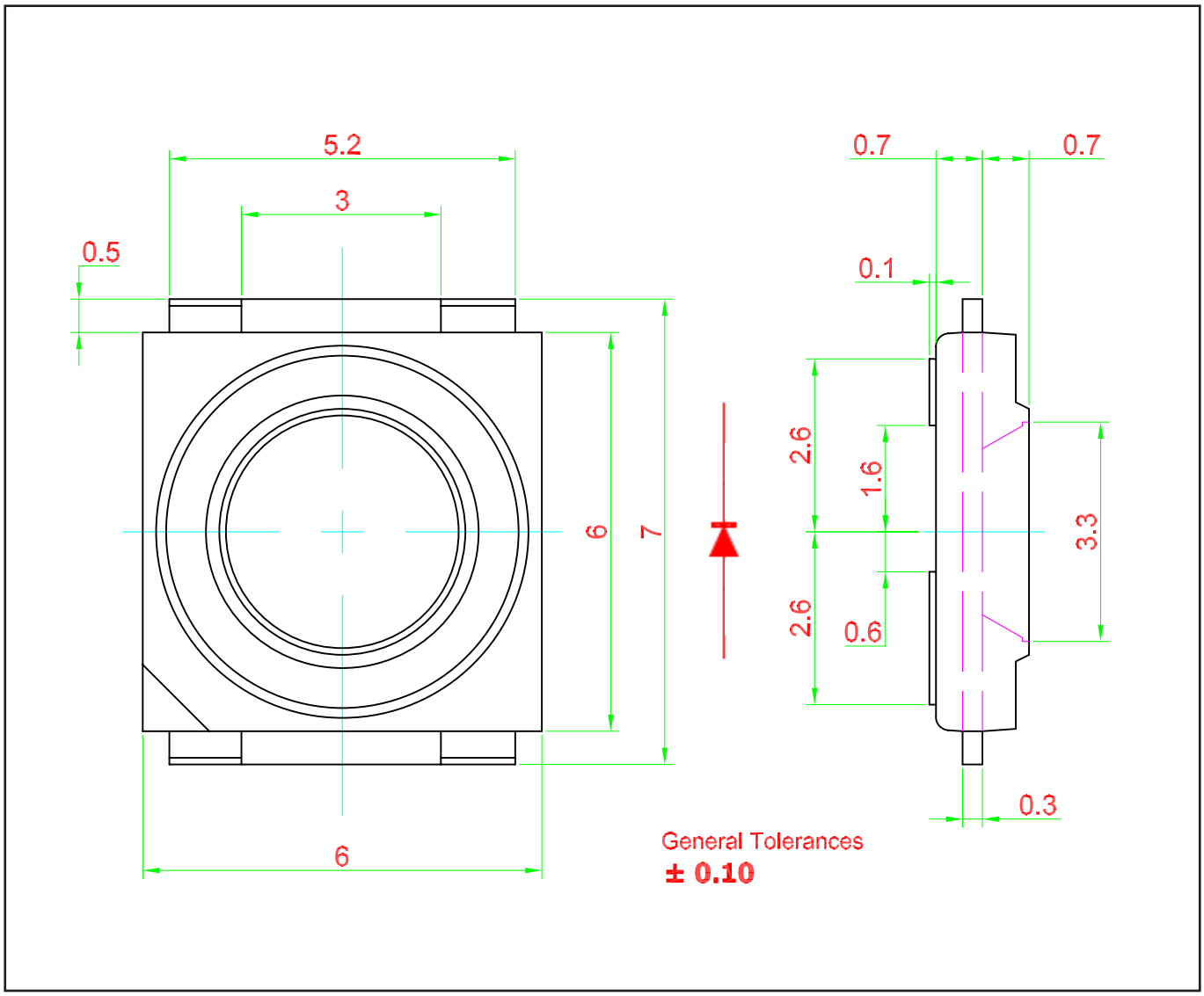
Maximum Permissible Pulse Current, Ta=25 ˚C



Radiation Pattern



SPNova™ • InGaN : 1 Watt Package Outlines

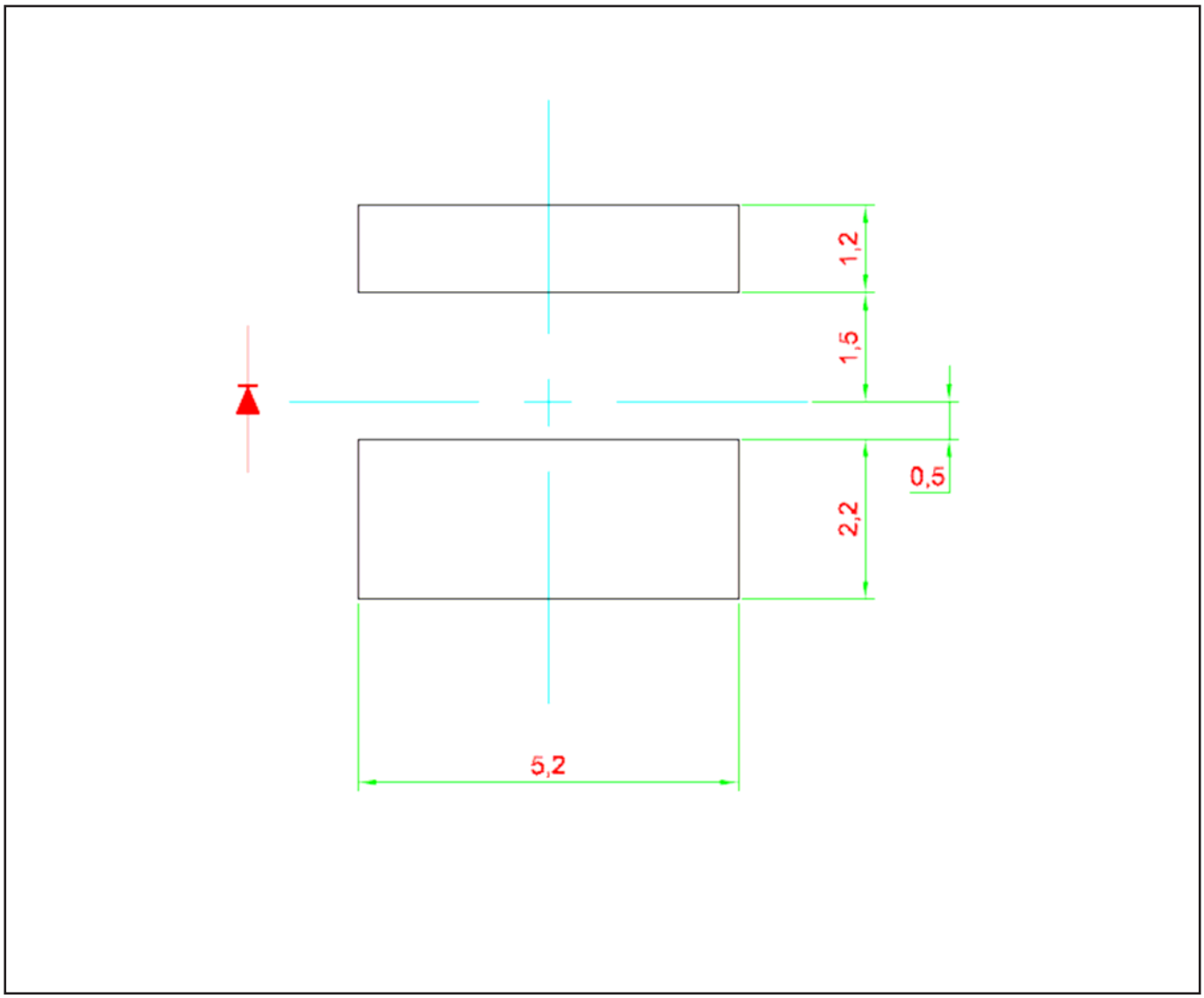


Material

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

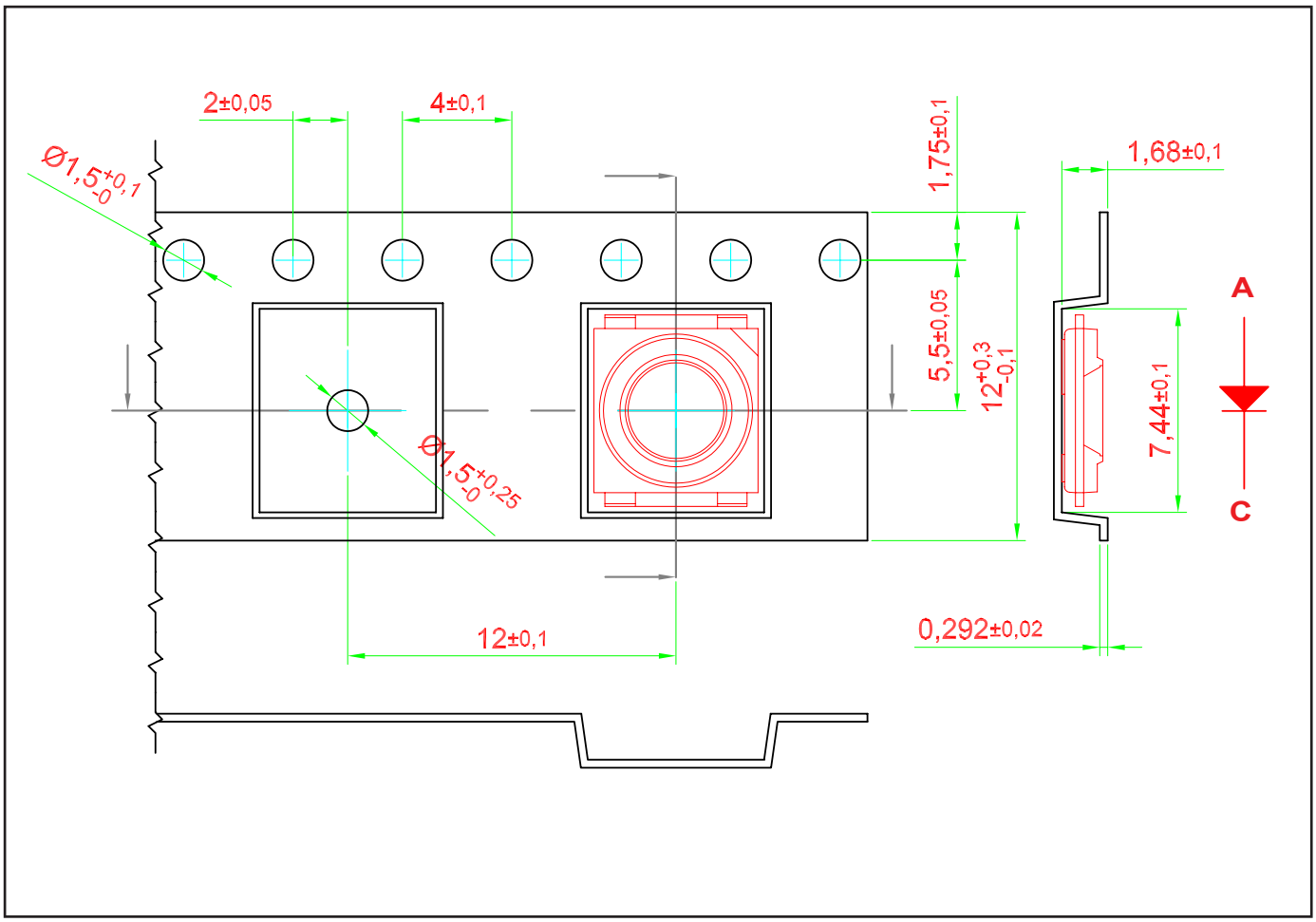
Recommended Solder Pad

Note: Unit to unit pitching must not be less than 25 mm. Metal core circuit board (MCPCB) is highly recommended for high density applications. Please consult sales and marketing for additional information.

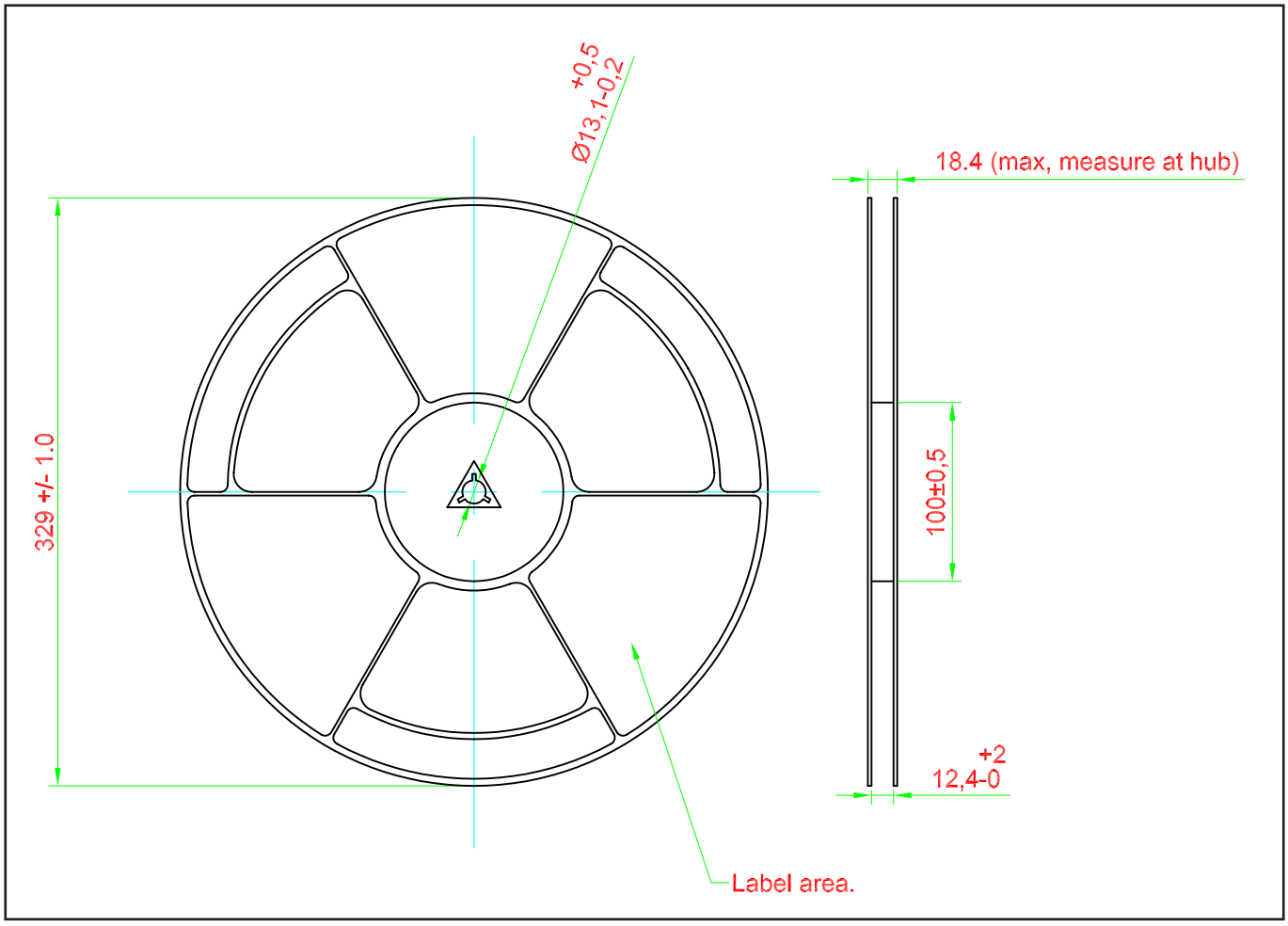


Taping and orientation

- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



Packaging Specification



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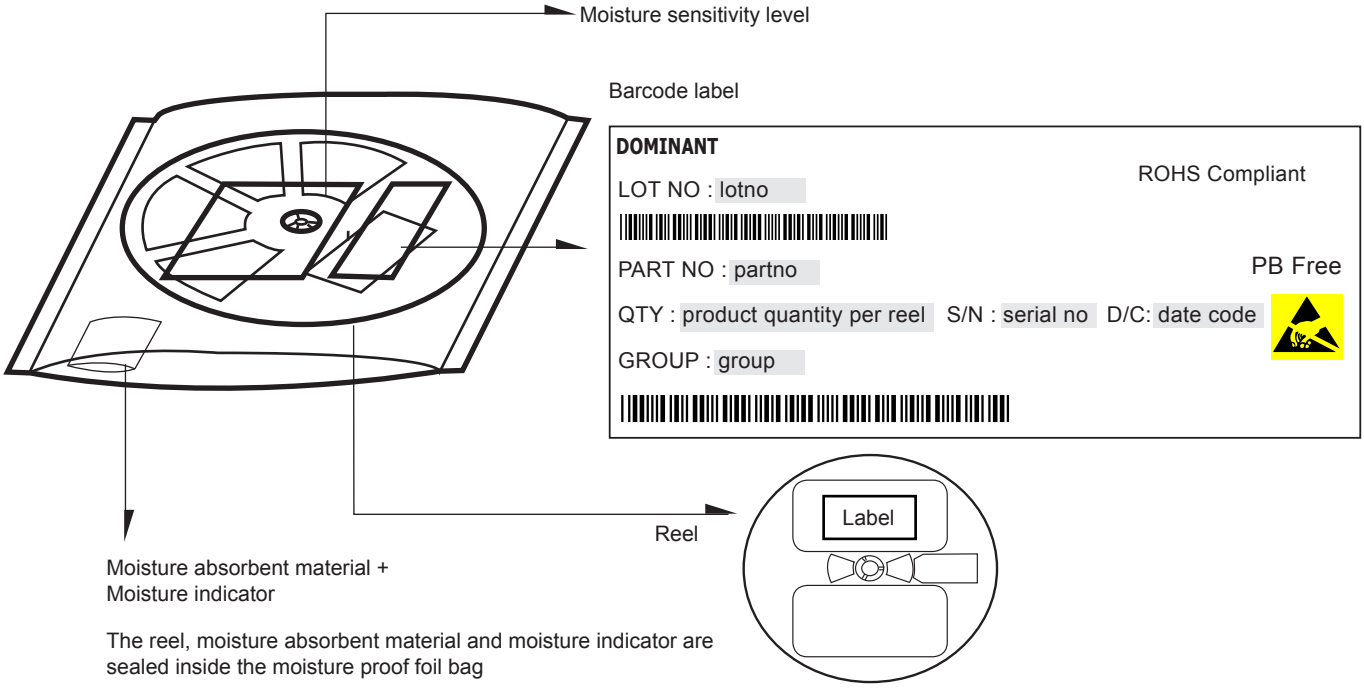
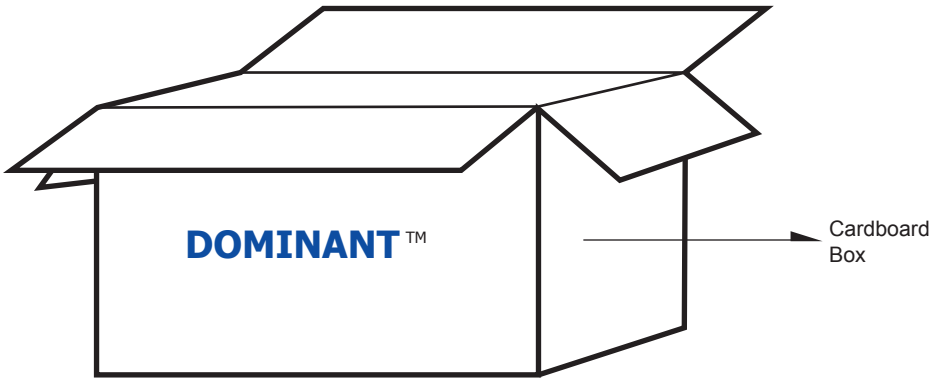


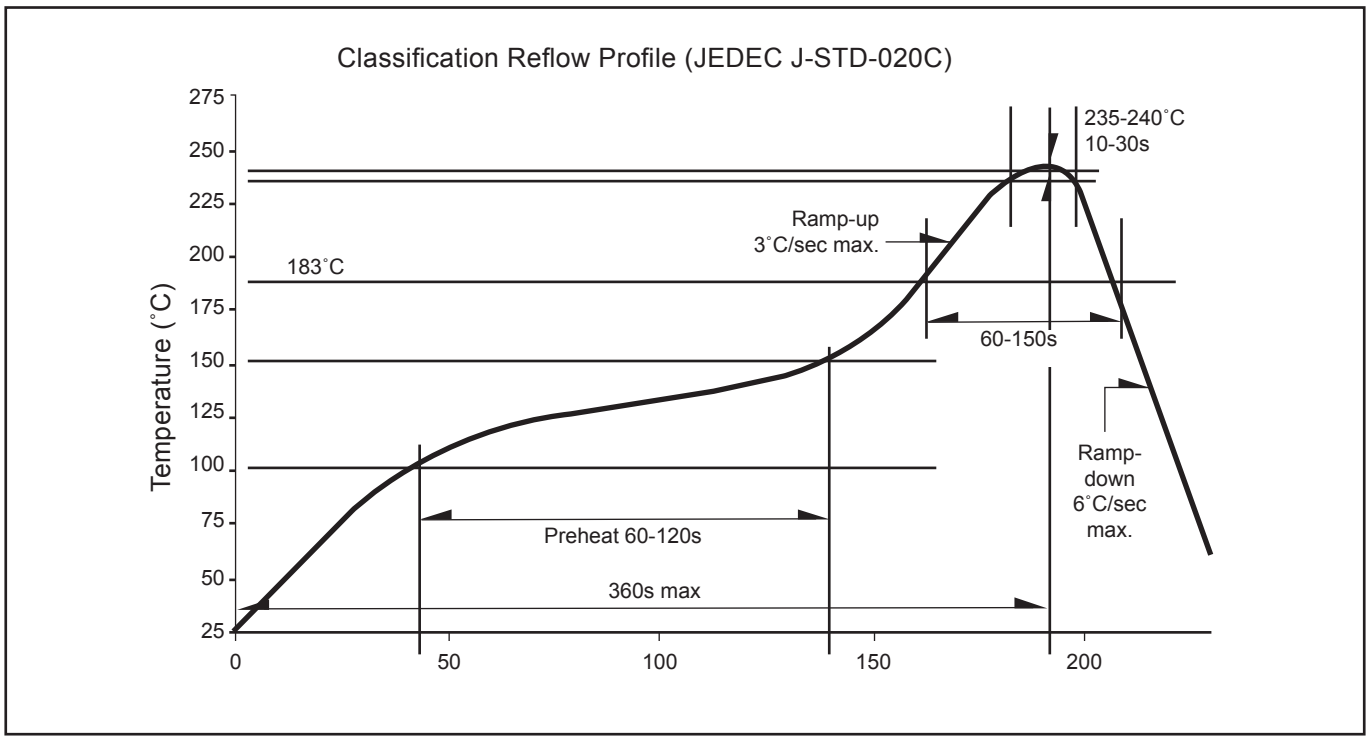
	Average 1pc SPNova	1 completed bag (2000pcs)
Weight (gram)	**0.188**	**800 ± 10**



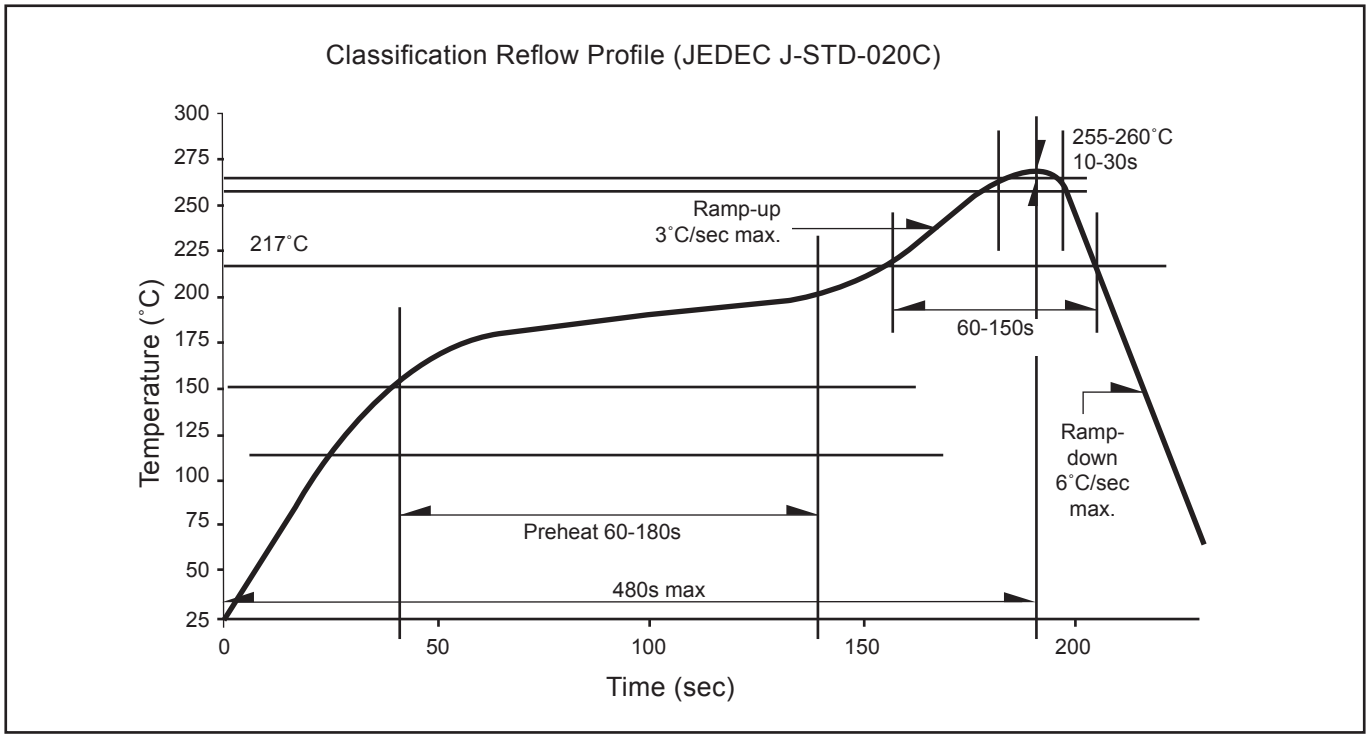
For SPNova™

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box	Quantity / Box (pcs)
Large	416 x 516 x 476	1.74	20 reels MAX	40,000 MAX

Recommended Sn-Pb IR-Reflow Soldering Profile



Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	08 Jun 2011

NOTE

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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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