

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 50 mA.
- > Low thermal resistance; $R_{th(jc)} = 20 \text{ K/W}$.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to 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.
- > Industrial: white goods (eg: Oven, microwave, etc.).
- > Lighting: architecture lighting, general lighting, garden light, channel light.

Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 50mA (mcd)		
			Min.	Typ.	Max.
N2B-CSS-TU1-1	Blue, 470nm	120	285.0	360.0	560.0
N2T-CSS-WX1-1	True Green, 525nm	120	1125.0	1400.0	2240.0

NOTE

- Luminous intensity is measured with an accuracy of ± 11%.
- 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 = 50 mA		Vr @ Ir = 10 µA
	Typ. (V)	Max. (V)	Min. (V)
N2B-CSS	3.8	4.2	5
N2T-CSS	3.9	4.2	5

Forward Voltage, Vf is measured with an accuracy of ± 0.1 V.

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005)	200	mA
Reverse Voltage	5	V
ESD Threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation	250	mW

Wavelength Grouping

Color	Group	Wavelength distribution (nm)
N2B; Blue	Full	464 - 476
	W	464 - 468
	X	468 - 472
	Y	472 - 476
N2T; True Green	Full	520 - 536
	W	520 - 524
	X	524 - 528
	Y	528 - 532
	Z	532 - 536

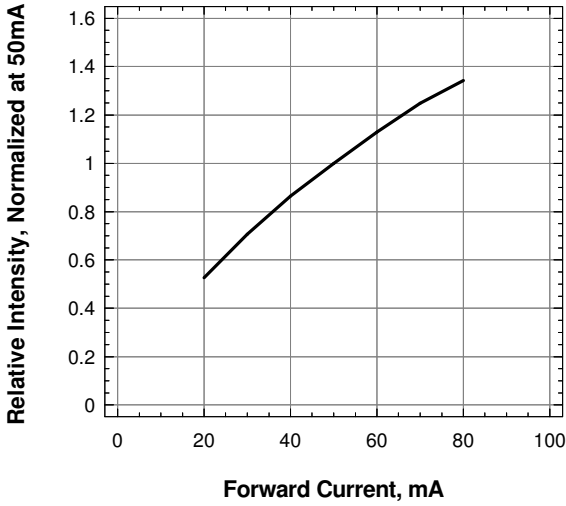
Dominant wavelength is measured with an accuracy of ± 1 nm.

Luminous Intensity Group at Tj=25°C

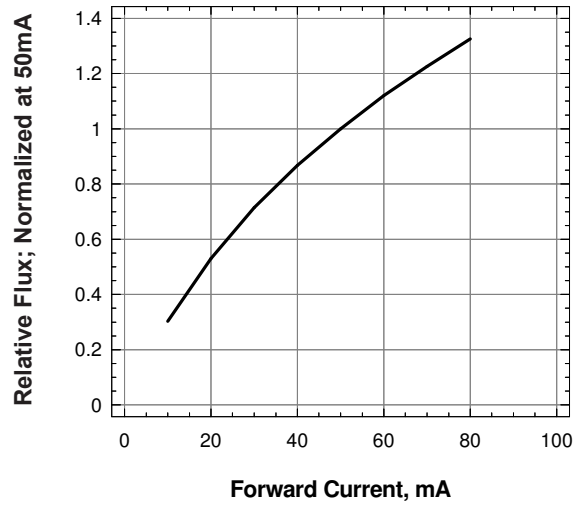
Brightness Group	Luminous Intensity (mcd)
T1	285.0...355.0
T2	355.0...450.0
U1	450.0...560.0
W1	1125.0...1400.0
W2	1400.0...1800.0
X1	1800.0...2240.0

Luminous flux is measured with an accuracy of $\pm 11\%$.

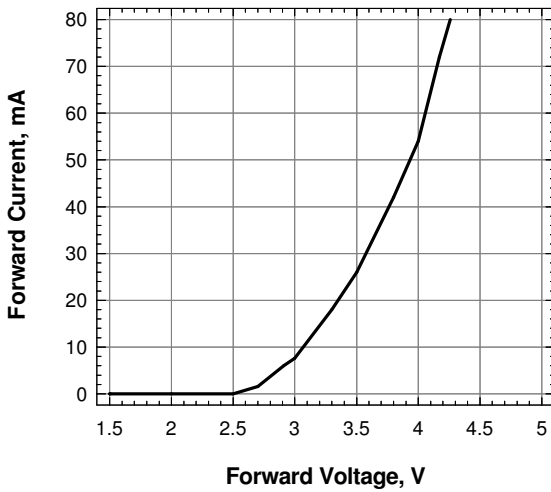
Relative Luminous Intensity Vs Forward Current



Relative Luminous Flux Vs Forward Current



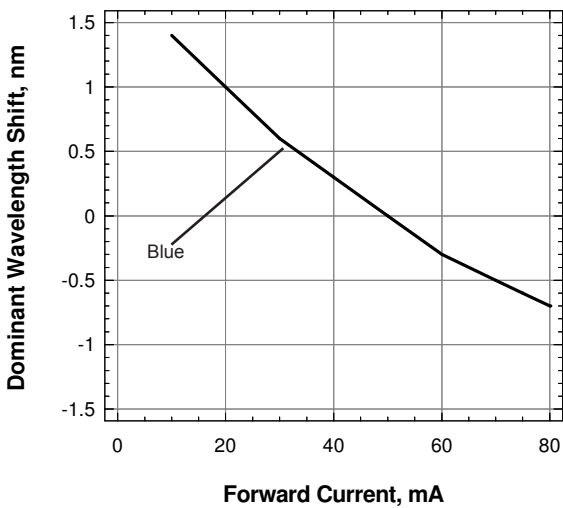
Forward Current Vs Forward Voltage



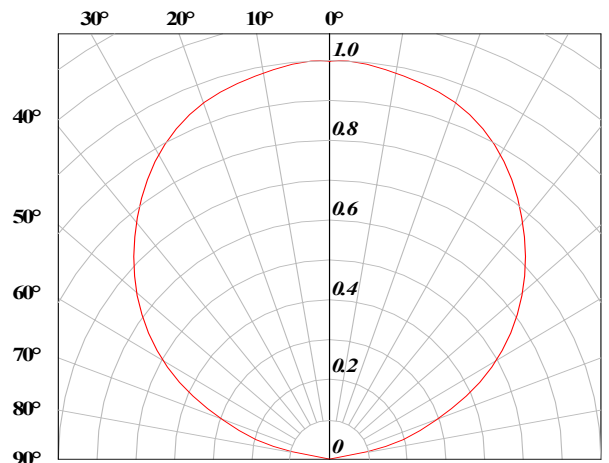
Dominant Wavelength Shift Vs Forward Current



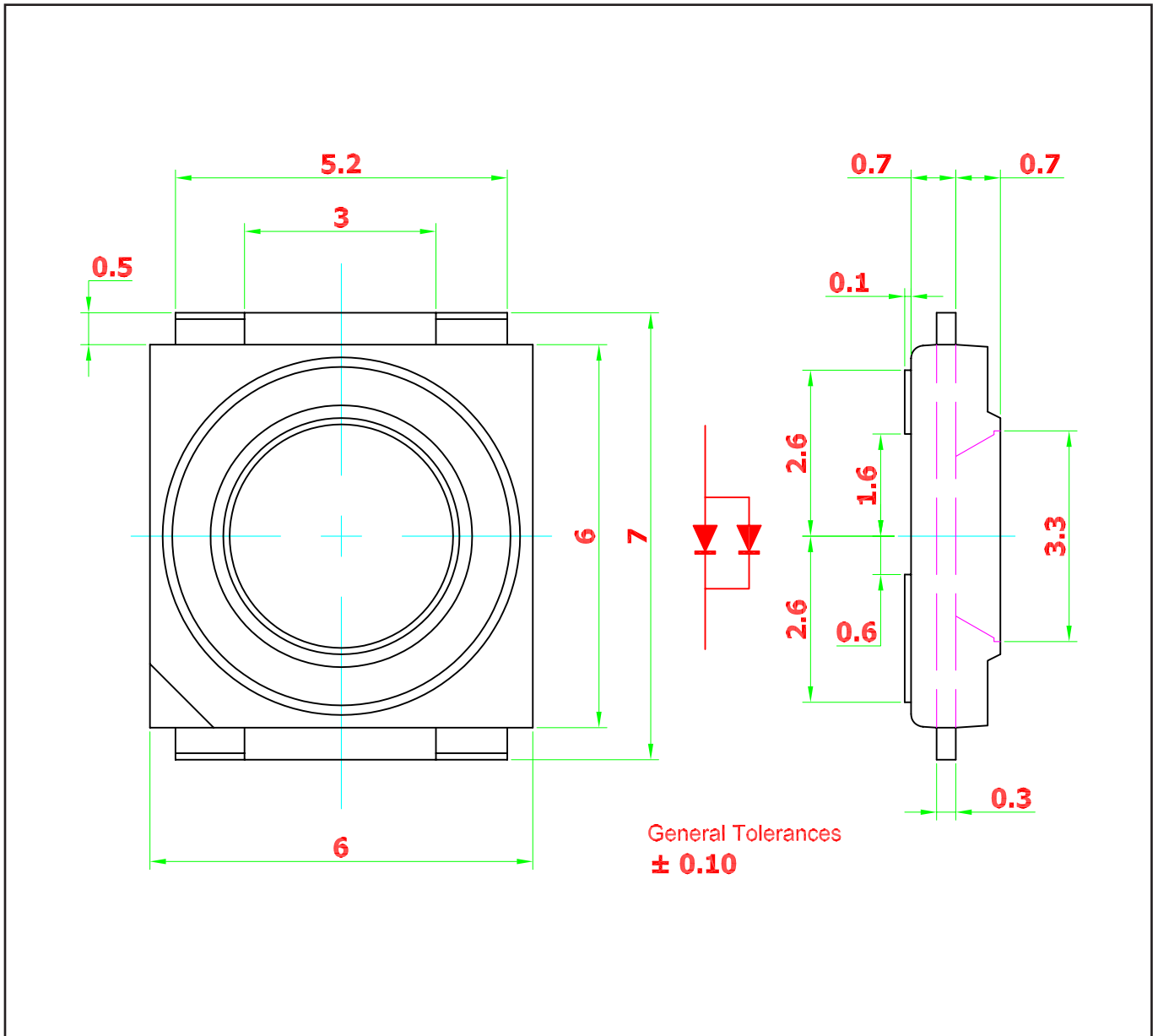
Dominant Wavelength Shift Vs Forward Current



Radiation Pattern



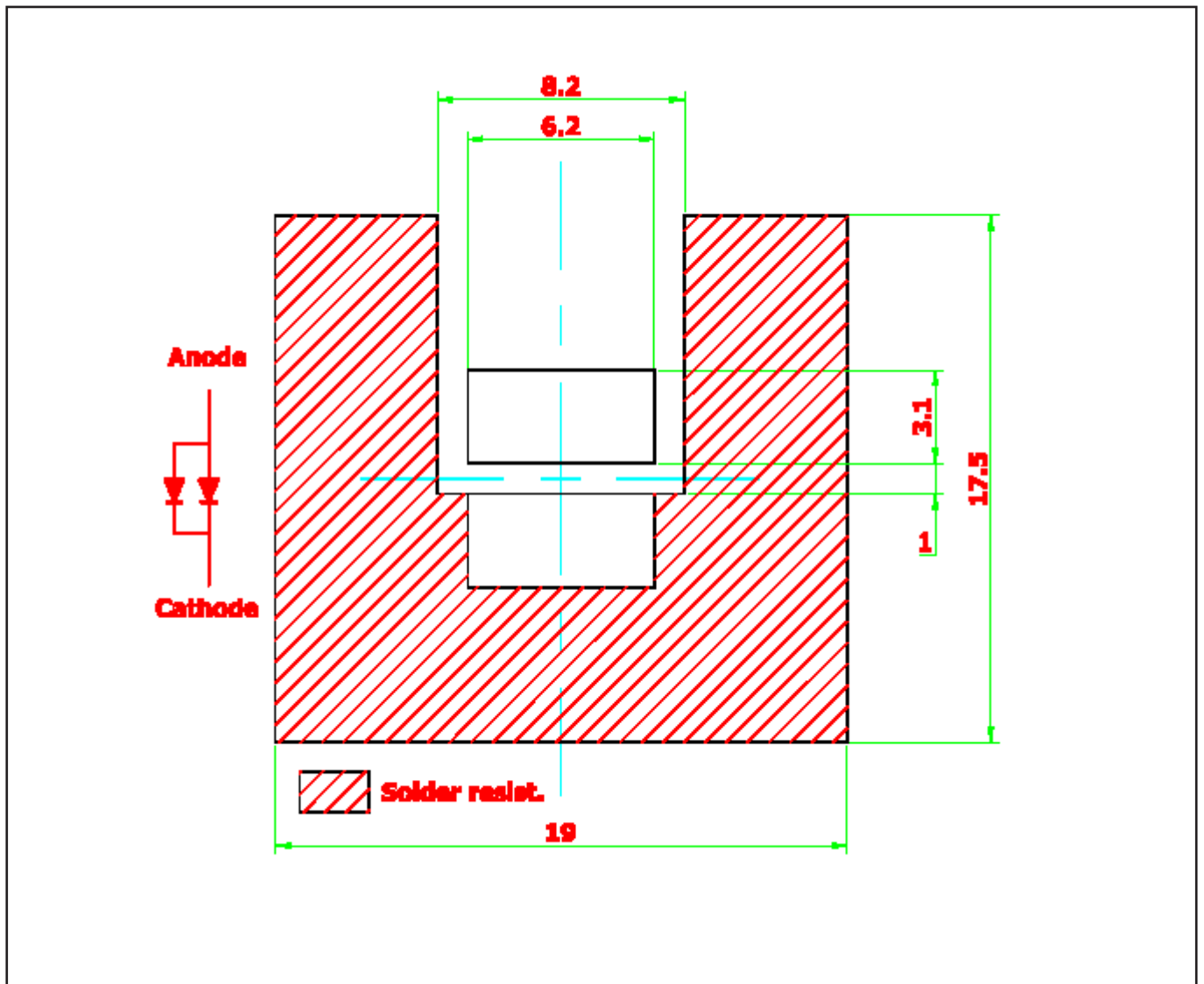
SPNova™ • InGaN : 50mA Package Outlines



Material

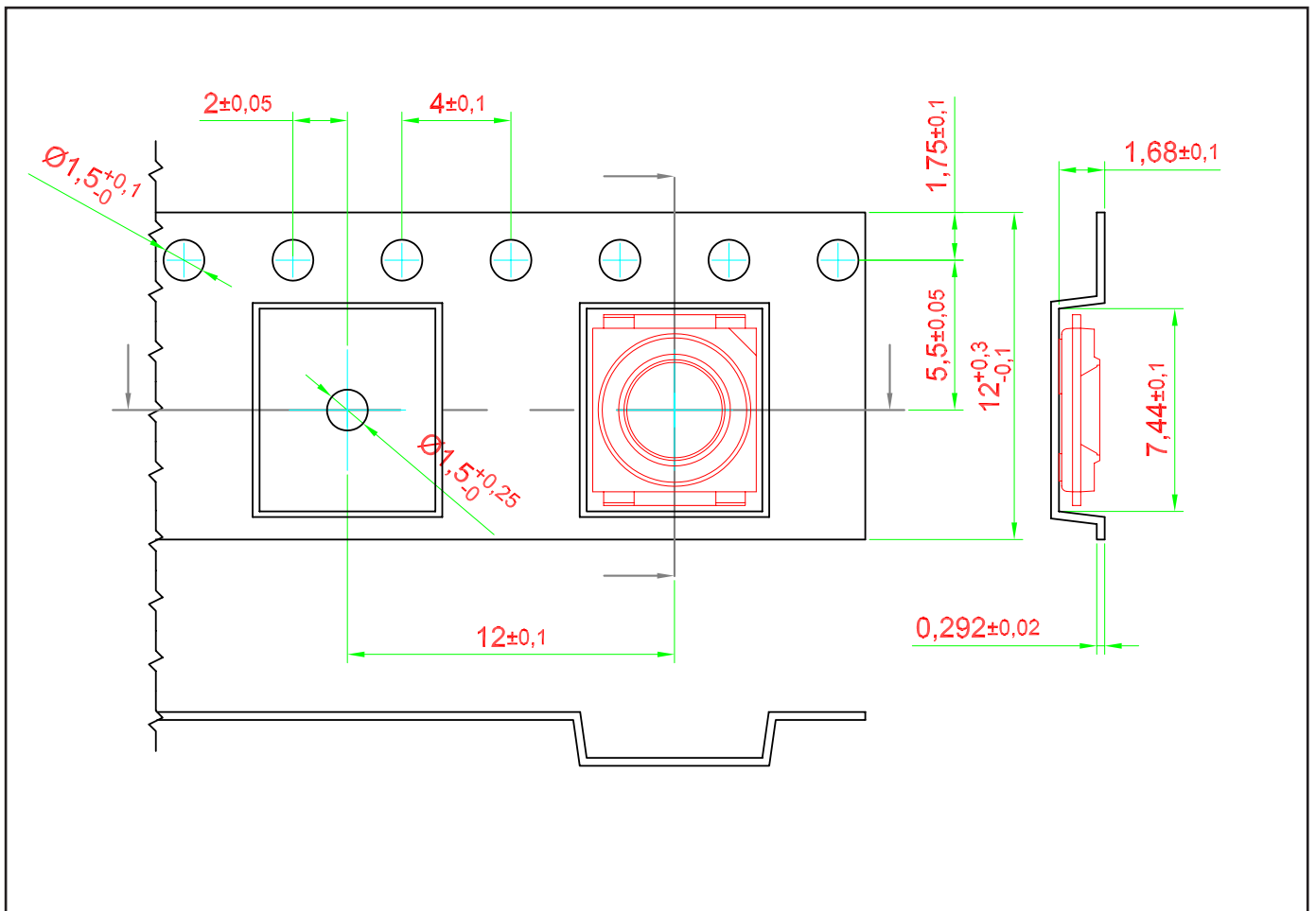
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn Plating

Recommended Solder Pad

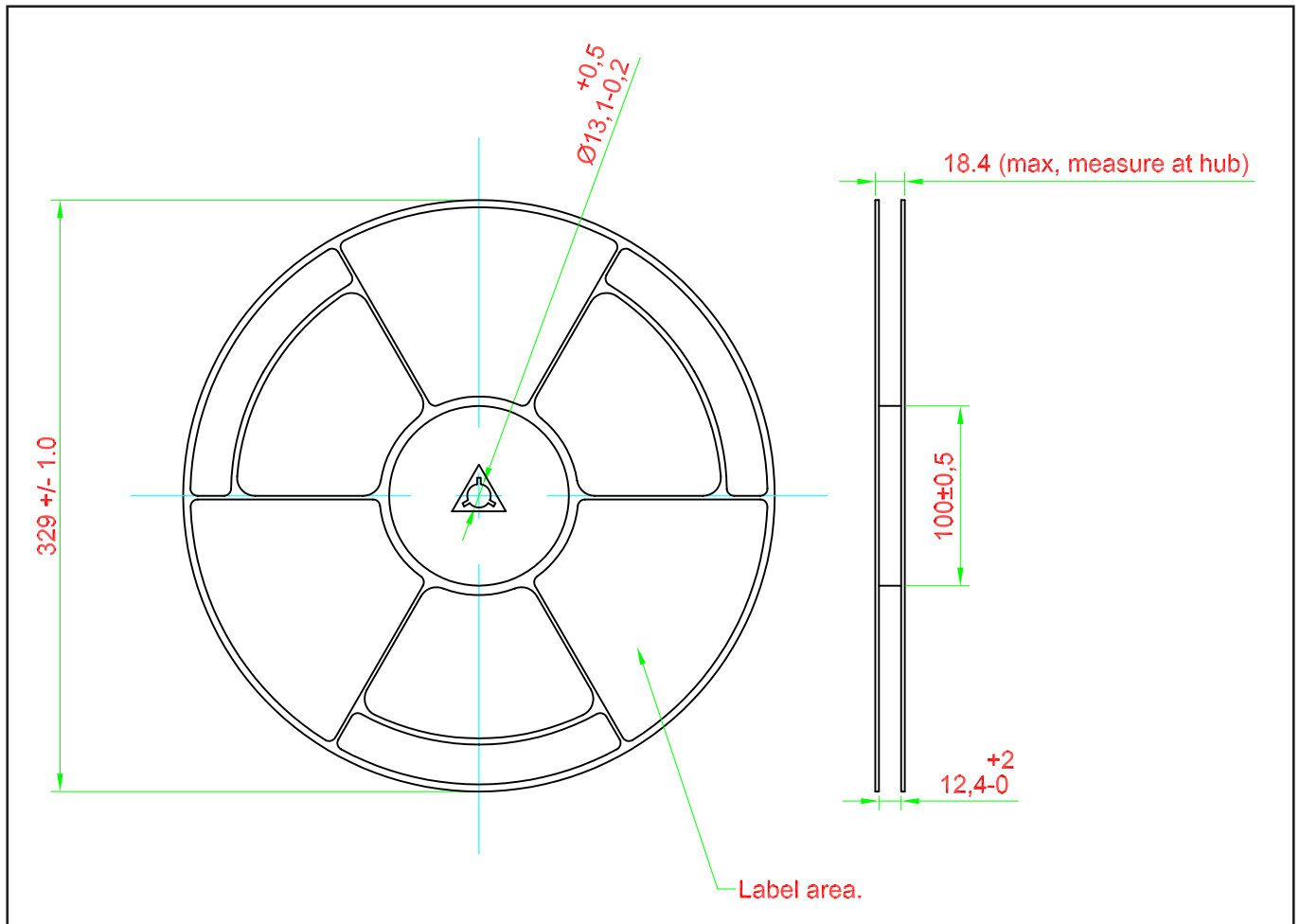


Taping and orientation

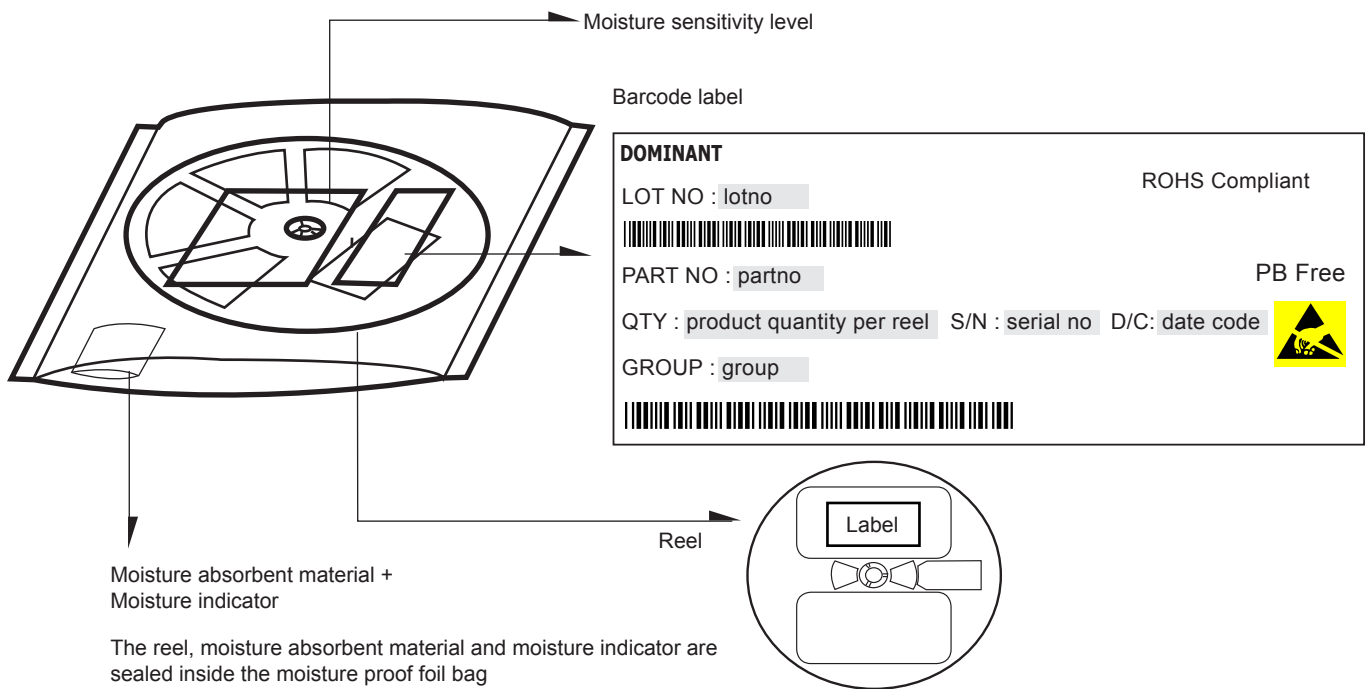
- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



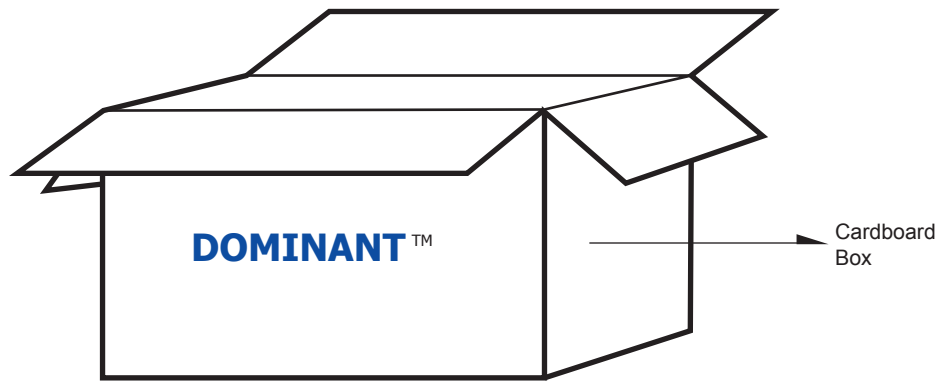
Packaging Specification



Packaging Specification



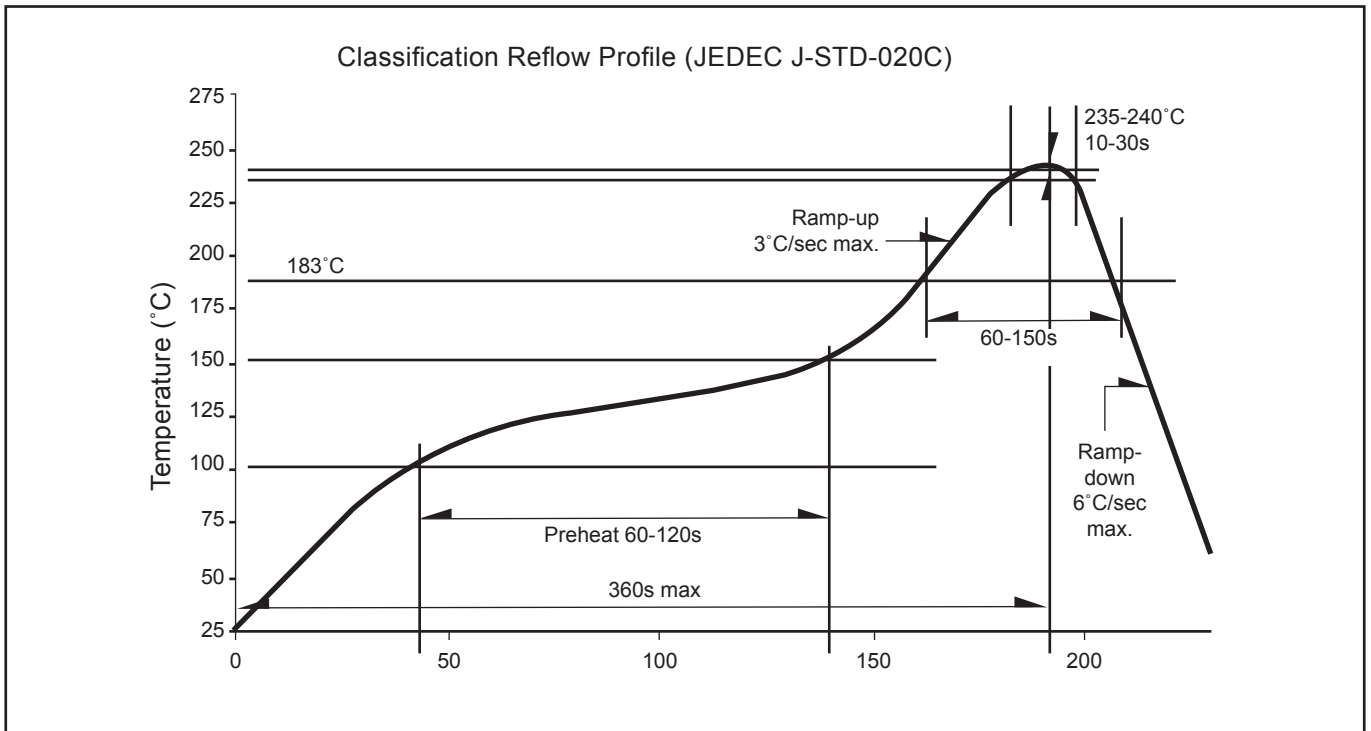
	Average 1pc SPNova	1 completed bag (2000pcs)
Weight (gram)	0.188	800 ± 10



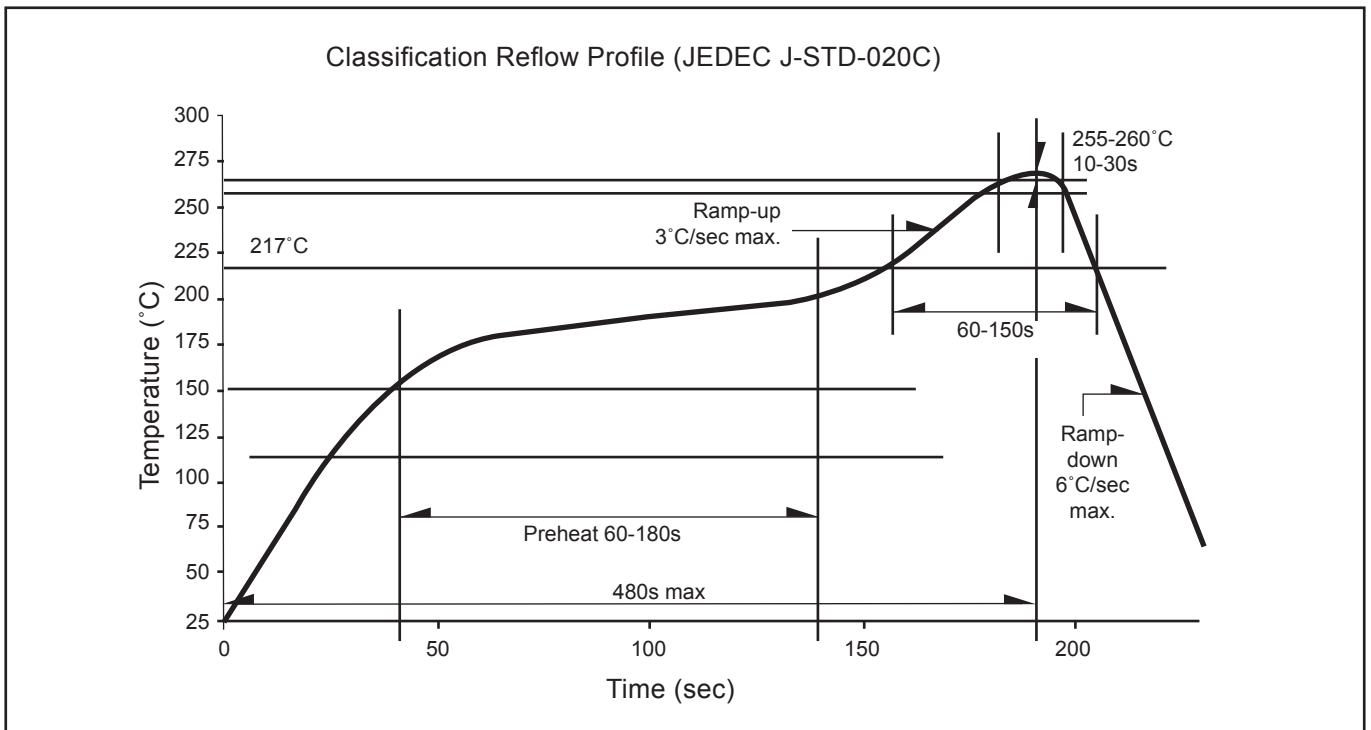
For SPNova™

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
-	New Format	27 Nov 2006
-	Update company name	05 Apr 2010
-	Correction on SPNova	07 Jul 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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