

SPNovaLED[™]

Featuring a staggering brilliance and significant flux output, the SPNovaLED[™] 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 175 mA.
- > Low thermal resistance; $R_{th(jc)} = 20 \text{ K/W}$.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering and TTW 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

Part Ordering Number	Chip Technology / Color	Viewing Angle°	Luminous Intensity @ IF = 175mA (mcd)
NPR-SSS-WX2-1	AllnGaP	120	1124.0 - 2850.0
• NPR-SSS-W1	Red, 625		1124.0 - 1400.0
• NPR-SSS-W2			1400.0 - 1800.0
• NPR-SSS-X1			1800.0 - 2240.0
• NPR-SSS-X2			2240.0 - 2850.0
NPY-SSS-XY2-1	AllnGaP	120	1800.0 - 4500.0
• NPY-SSS-X1	Yellow, 587		1800.0 - 2240.0
• NPY-SSS-X2			2240.0 - 2850.0
• NPY-SSS-Y1			2850.0 - 3550.0
• NPY-SSS-Y2			3550.0 - 4500.0

NOTE

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

Wavelength Grouping

Color	Group	Wavelength distribution (nm)
NPR; Red	Full	620 - 630
NPY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

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

Electrical Characteristics at Ta=25°C

Part Number	Vf @ If = 175mA		Vr @ Ir = 100uA
	Typ. (V)	Max. (V)	Min. (V)
NPR	2.2	2.8	15
NPY	2.2	2.8	15

Forward voltages are measure using a current pulse of 1 ms and with an accuracy of $\pm 0.1V$.

Optical Characteristics at Ta=25°C, If=175mA, Rja=100K/W

Part Number	Total Flux @ If=175mA		Intensity @ If=175mA
	Min (mlm)	Typ. (mlm)	Typ. (mcd)
NPR-SSS-WX2	3500	5000	1800
NPY-SSS-XY2	3500	5500	2000

Vf Binning (Optional)

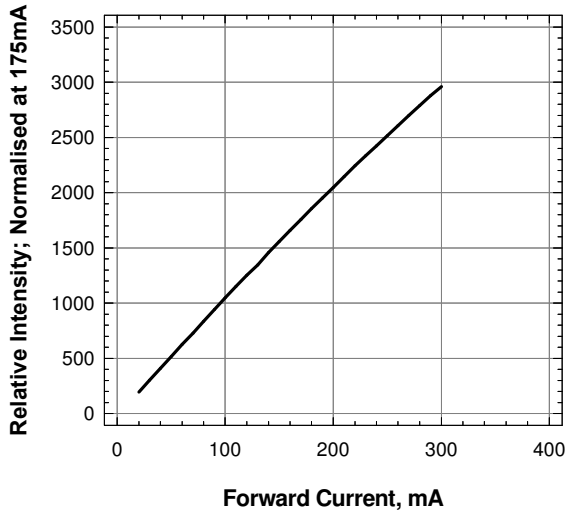
Vf Bin @ 175 mA	Forward Voltage (V)
Standard	1.9 ... 2.8
01	1.9 ... 2.2
02	2.2 ... 2.5
03	2.5 ... 2.8

Forward voltage, Vf is measured with an accuracy of ±0.1 V.
Please consult sales and marketing for special part number to incorporate Vf binning.

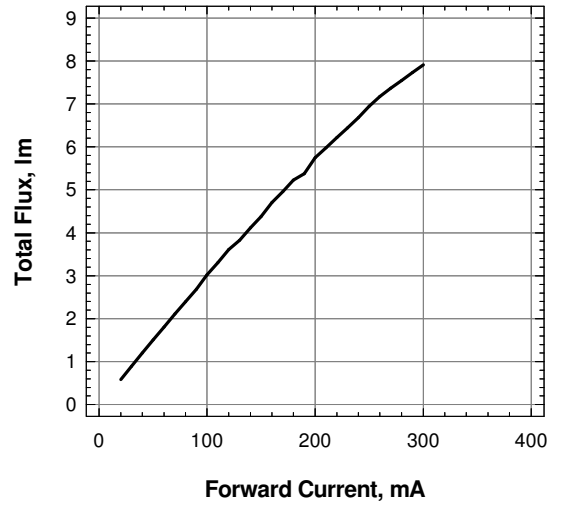
Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	175	mA
Reverse Voltage	15	V
ESD Threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	525	mW

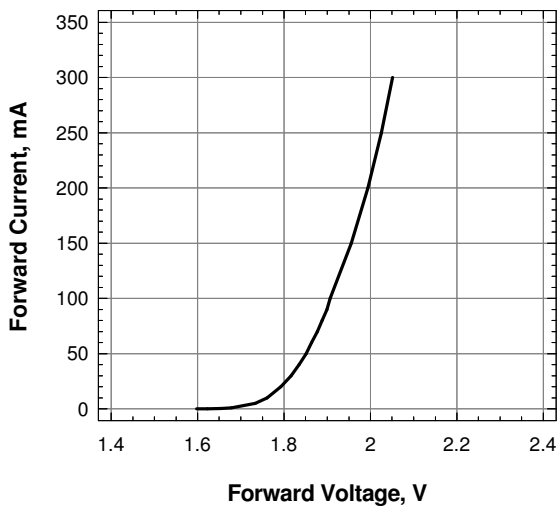
Relative Intensity Vs Forward Current



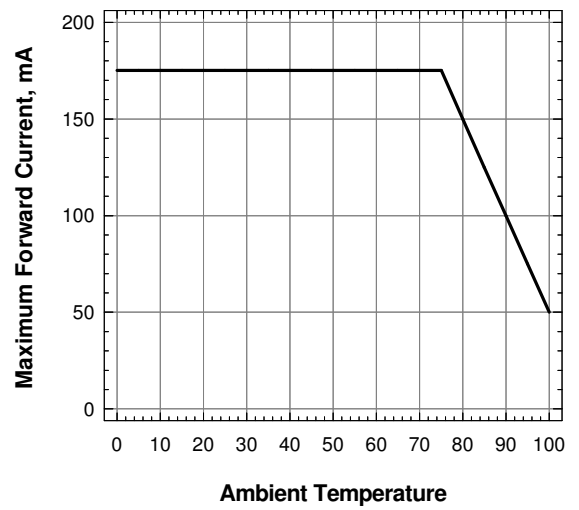
Total Flux Vs Forward Current



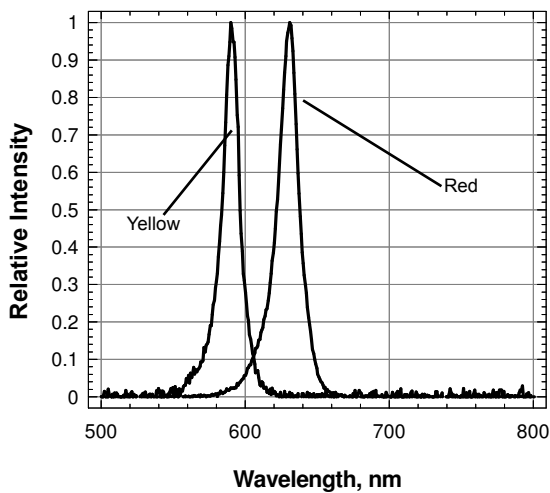
Forward Current Vs Forward Voltage



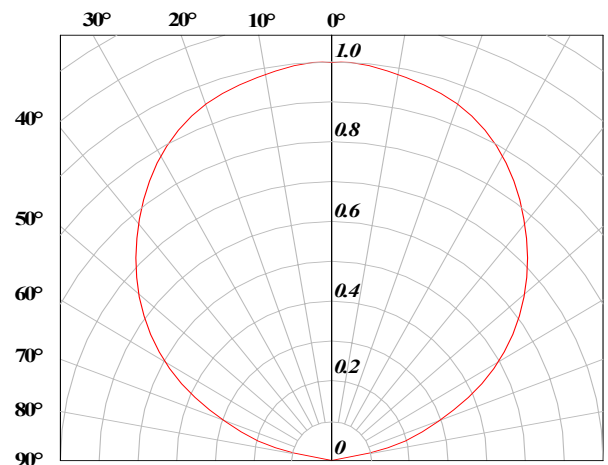
Maximum Forward Current Vs. Ambient Temperature



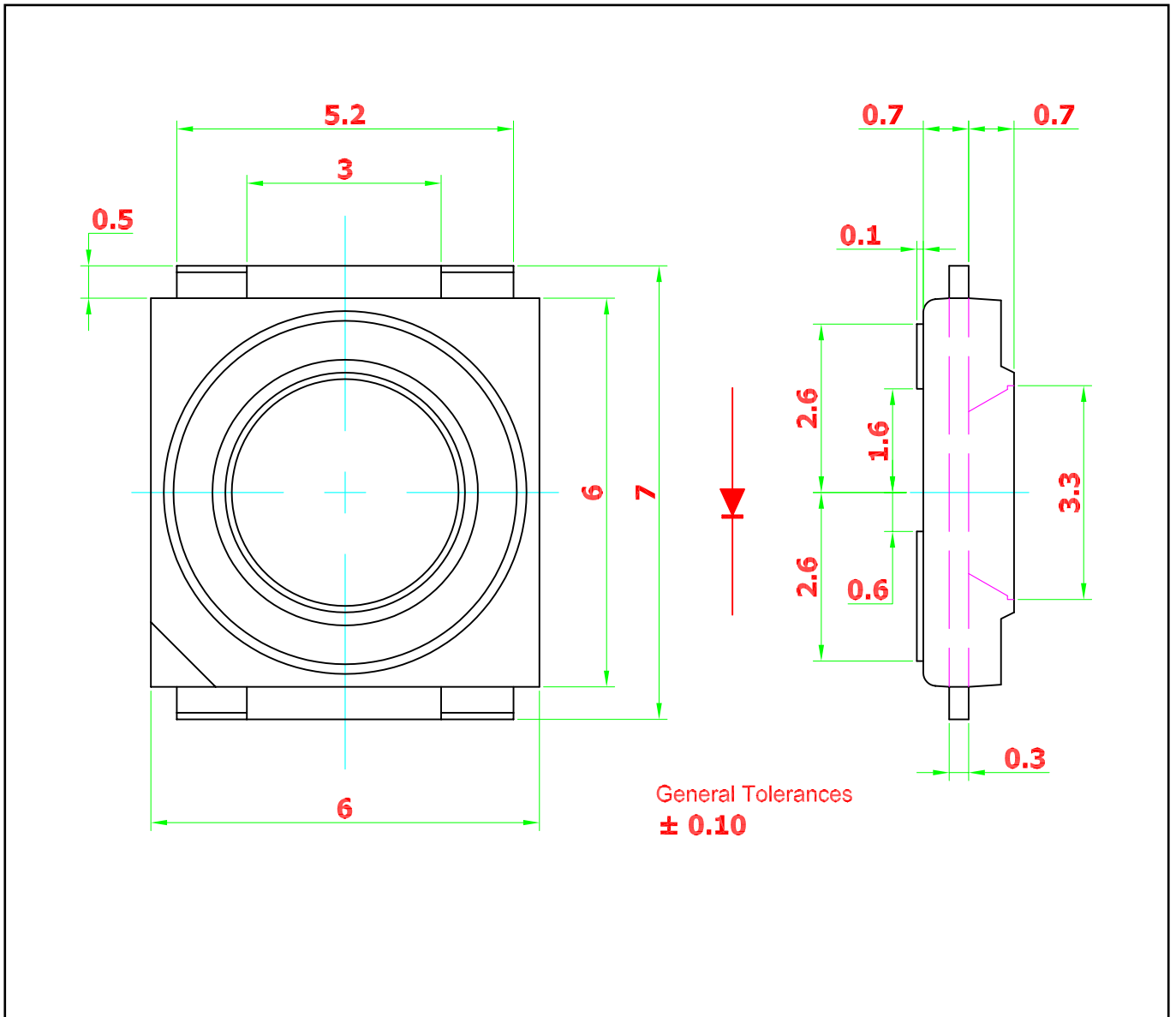
Relative Intensity Vs Wavelength



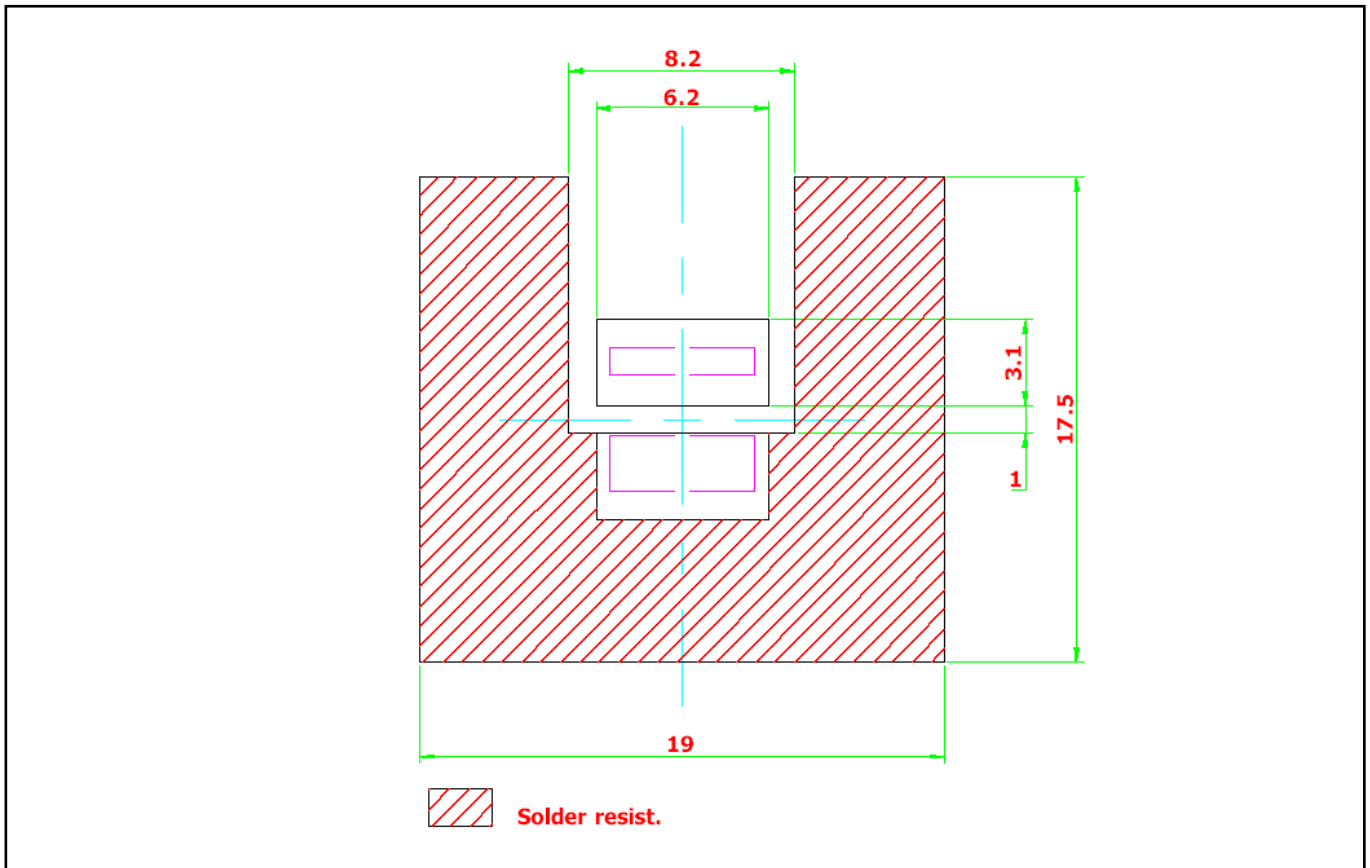
Radiation Pattern



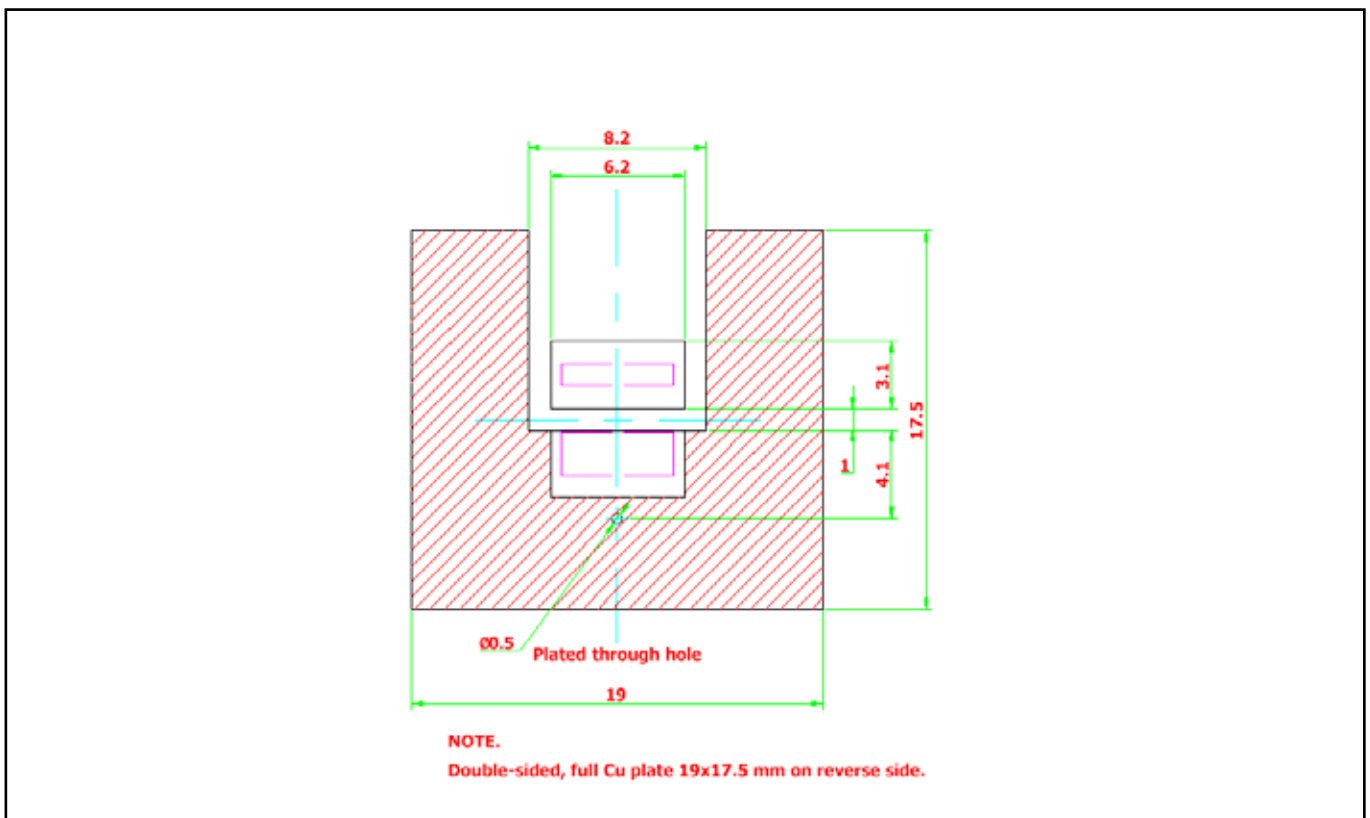
SPNovaLED™ • AllnGaP : SPNovaLED-175 Package Outlines



Solder Pad Design

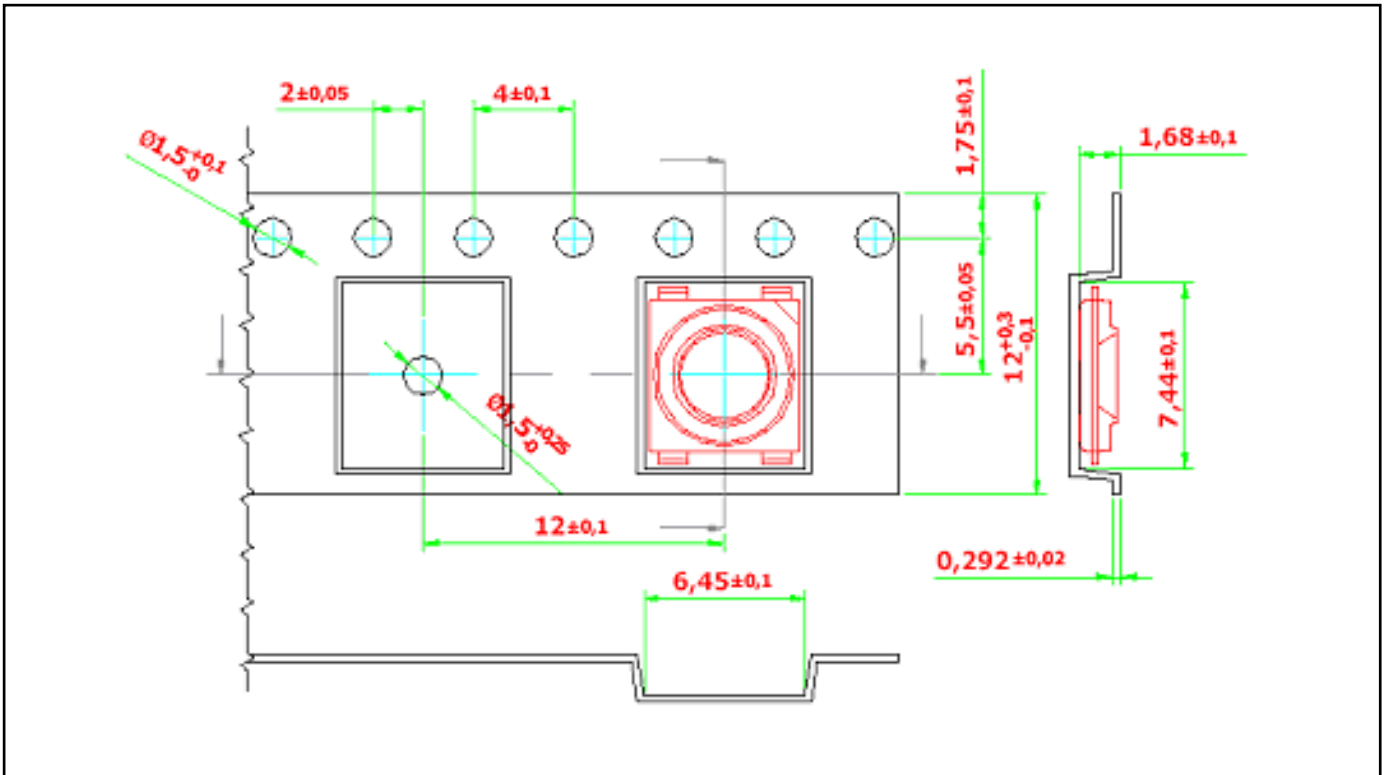


Recommended Solder Pad Design For Better Heat Dissipation

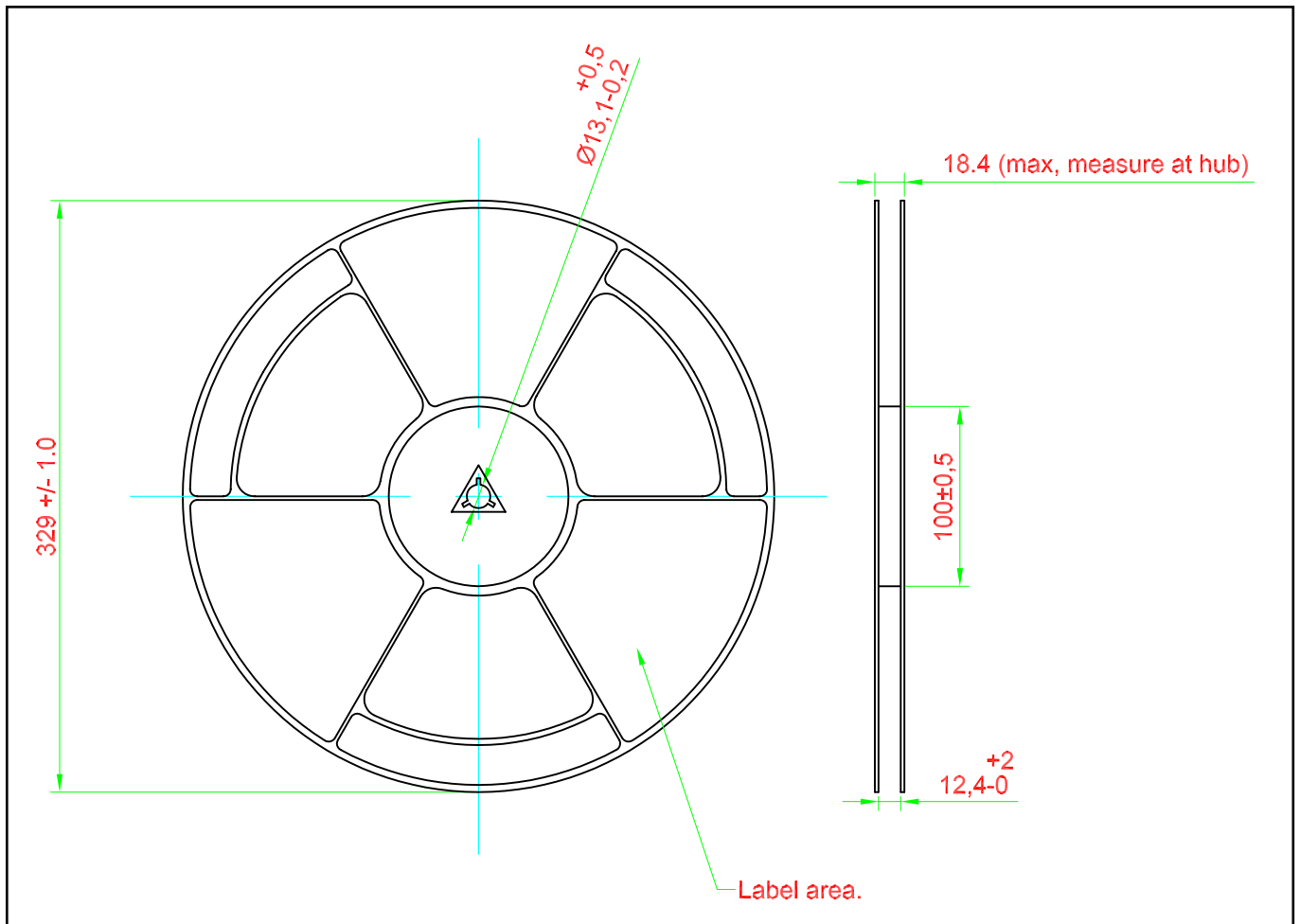


Taping and orientation

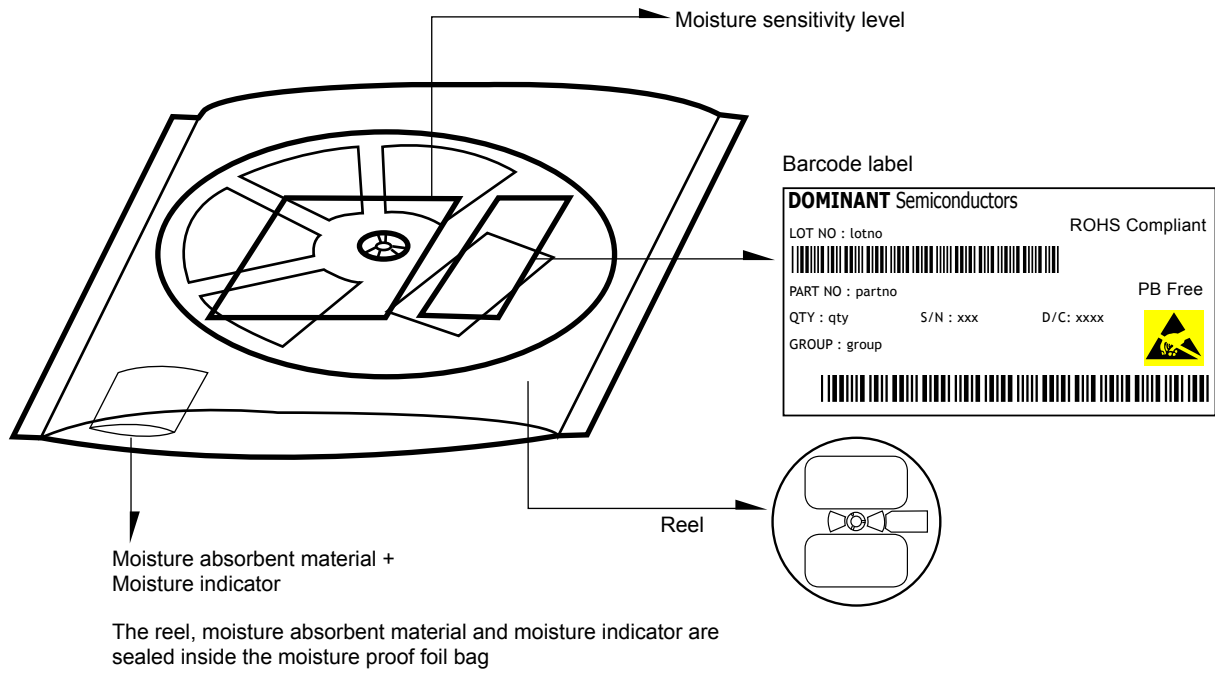
- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



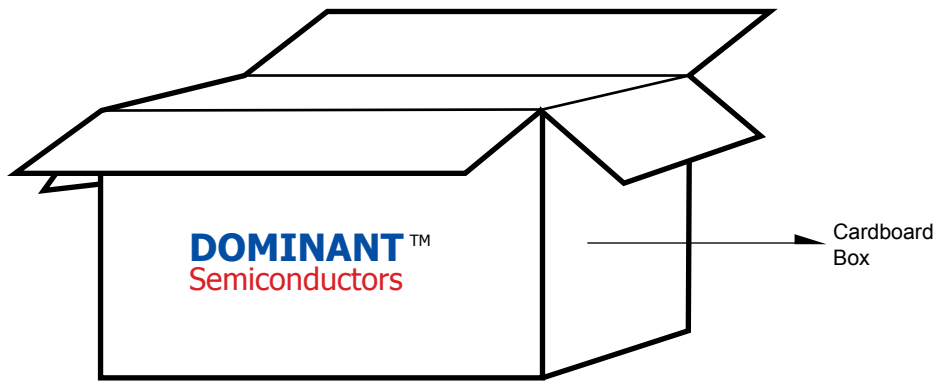
Packaging Specification



Packaging Specification



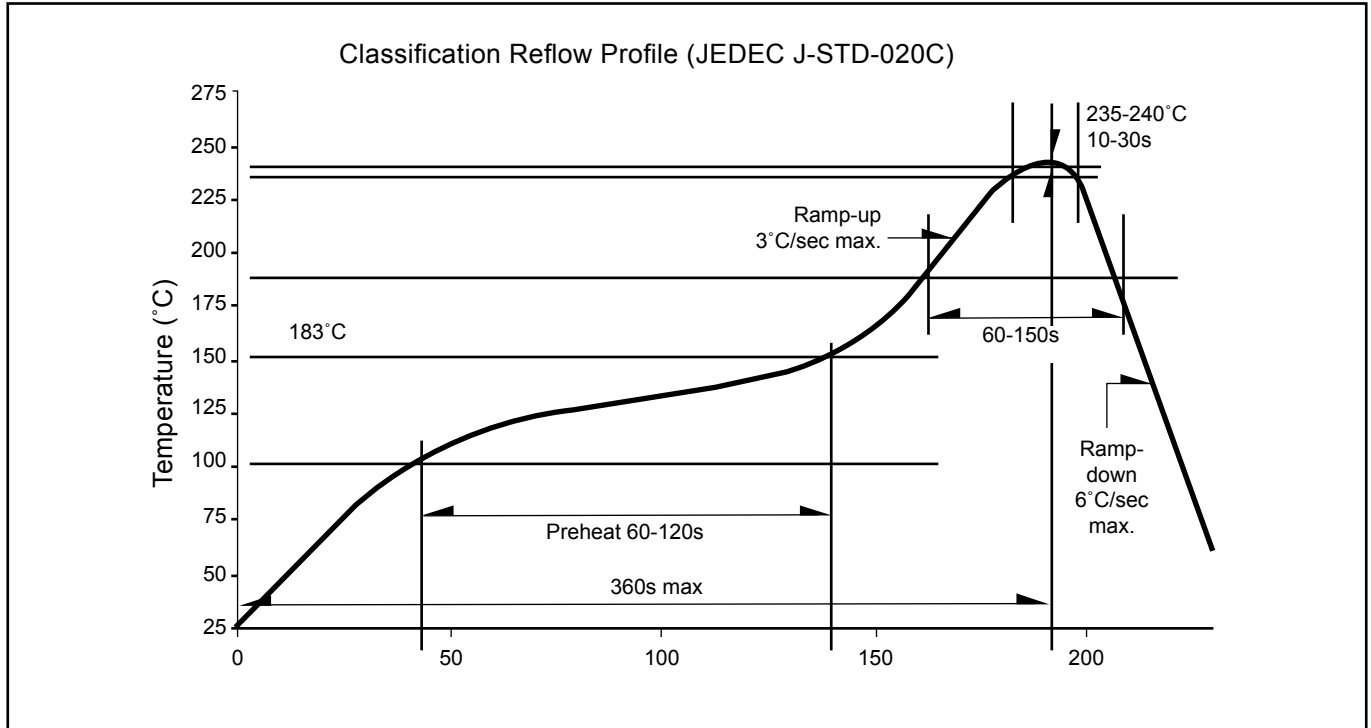
	Average 1pc SPNovaLED	1 completed bag (2000pcs)
Weight (gram)	0.188	800 ± 10



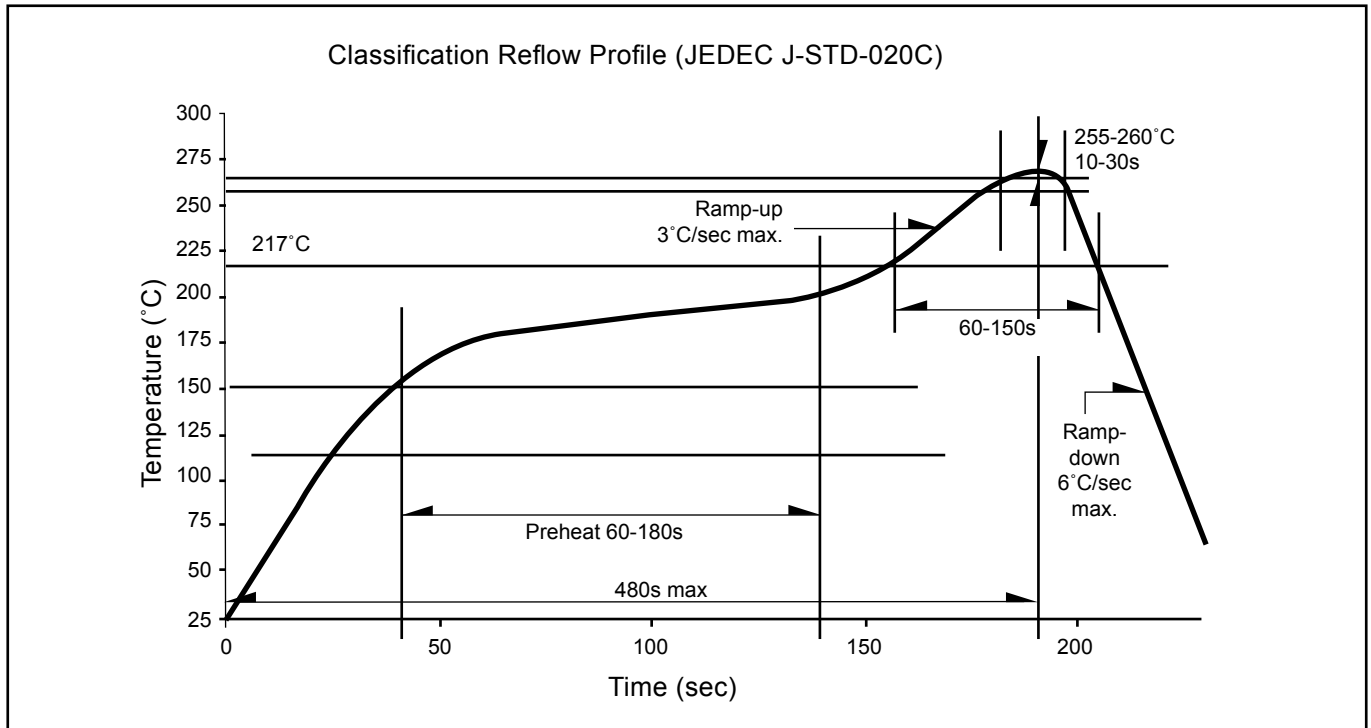
For SPNovaLED™

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



About Us

DOMINANT Semiconductors 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 Semiconductors can be found on the Internet at <http://www.dominant-semi.com>.

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