

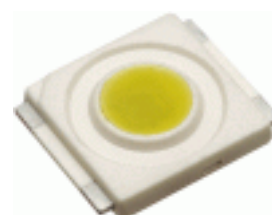
SPNovaLED™

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; typical 75 lumens
- > 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; $R_{th(j-s)} = 18 \text{ K/W}$.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > SPNovaLED are Class 2 LED products. Do not view directly with optical instrument.



Applications:

- > Lighting: garden light, architecture lighting, general lighting. etc
- > Backlighting (TFT LCD display), flash light, architectural lighting.



Optical Characteristics at Tj=25°C

Part Ordering Number	Chip Technology / Color	Viewing Angle°	Luminous Flux @ IF = 350mA (lm)
NPW-TSD-ST-1	InGaN	120	51.7 - 87.4
• NPW-TSD-S2	White		51.7 - 59.0
• NPW-TSD-S3			59.0 - 67.2
• NPW-TSD-T2			67.2 - 76.5
• NPW-TSD-T3			76.5 - 87.4

NOTE

1. Luminous flux is measured with an accuracy of $\pm 11\%$.
2. Luminous flux is measured with a 25 ms pulse.
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	Min. (V)	Vf @ If = 350mA	
		Typ. (V)	Max. (V)
NPW-TSD	3.0	3.5	4.0

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

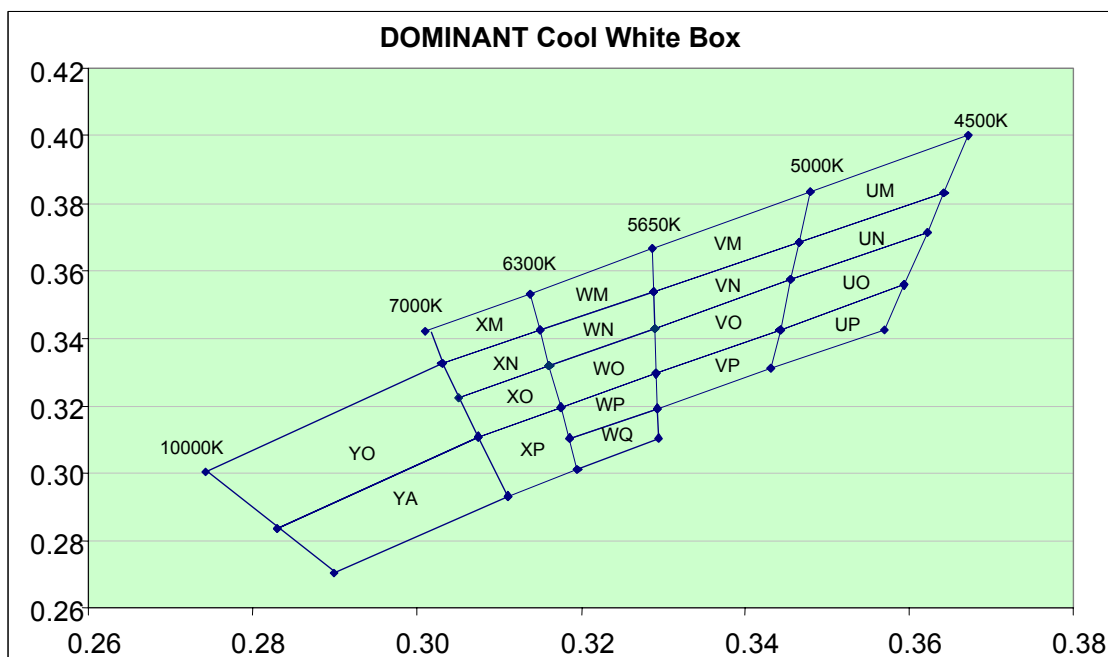
Material

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	350	mA
Peak pulse current	1000	mA
Reverse Voltage	Not designed for reverse bias	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C

Color Bin

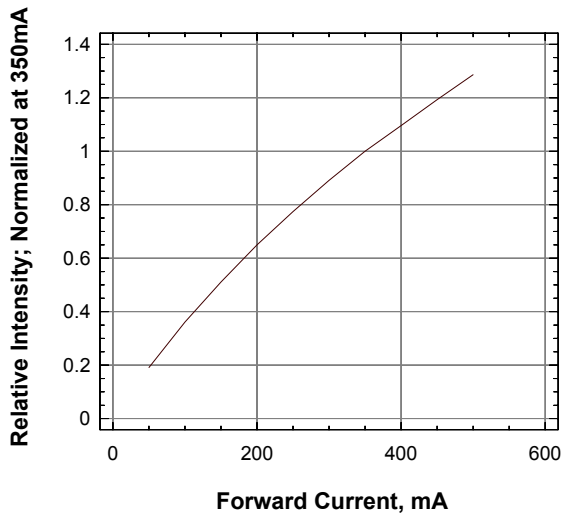


Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

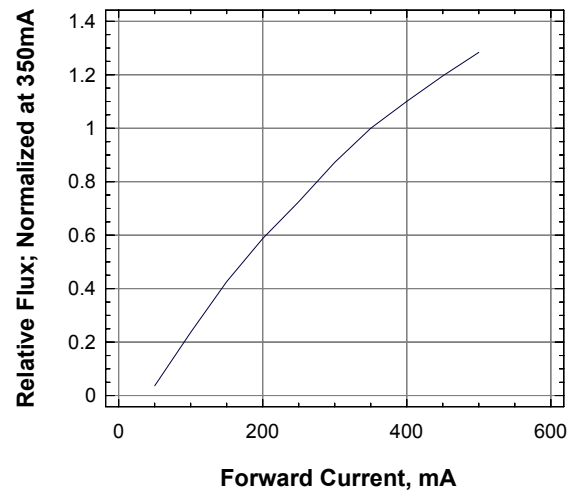
Bin		1	2	3	4
YO	Cx	0.274	0.303	0.308	0.283
	Cy	0.301	0.333	0.311	0.284
YA	Cx	0.283	0.308	0.311	0.290
	Cy	0.284	0.311	0.293	0.270
XM	Cx	0.301	0.314	0.315	0.303
	Cy	0.342	0.353	0.343	0.333
XN	Cx	0.303	0.315	0.316	0.305
	Cy	0.333	0.343	0.332	0.322
XO	Cx	0.305	0.316	0.318	0.308
	Cy	0.322	0.332	0.319	0.311
XP	Cx	0.308	0.318	0.320	0.311
	Cy	0.311	0.319	0.301	0.293
WM	Cx	0.314	0.329	0.329	0.315
	Cy	0.353	0.366	0.354	0.343
WN	Cx	0.315	0.329	0.329	0.316
	Cy	0.343	0.354	0.343	0.332
WO	Cx	0.316	0.329	0.329	0.318
	Cy	0.332	0.343	0.330	0.319
WP	Cx	0.318	0.329	0.329	0.319
	Cy	0.319	0.330	0.319	0.310
WQ	Cx	0.319	0.329	0.330	0.320
	Cy	0.310	0.319	0.311	0.301
VM	Cx	0.329	0.348	0.347	0.329
	Cy	0.366	0.383	0.368	0.354

Bin		1	2	3	4
VN	Cx	0.329	0.347	0.346	0.329
	Cy	0.354	0.368	0.357	0.343
VO	Cx	0.329	0.346	0.344	0.329
	Cy	0.343	0.357	0.343	0.330
VP	Cx	0.329	0.344	0.343	0.329
	Cy	0.330	0.343	0.331	0.319
UM	Cx	0.348	0.367	0.364	0.347
	Cy	0.383	0.400	0.383	0.368
UN	Cx	0.347	0.364	0.362	0.346
	Cy	0.368	0.383	0.372	0.357
UO	Cx	0.346	0.362	0.359	0.344
	Cy	0.357	0.372	0.356	0.343
UP	Cx	0.344	0.359	0.357	0.343
	Cy	0.343	0.356	0.343	0.331

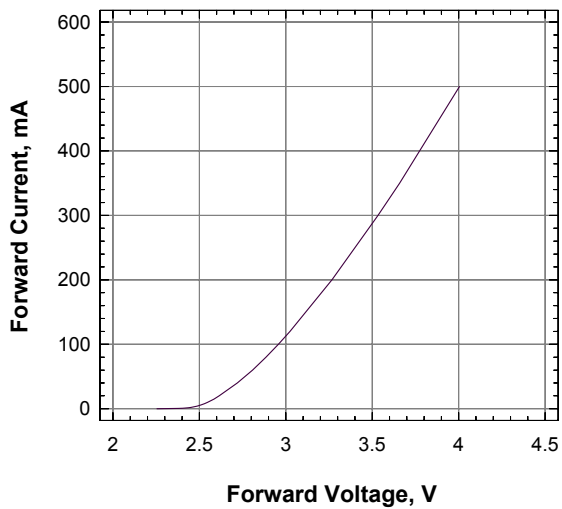
Relative Intensity Vs Forward Current



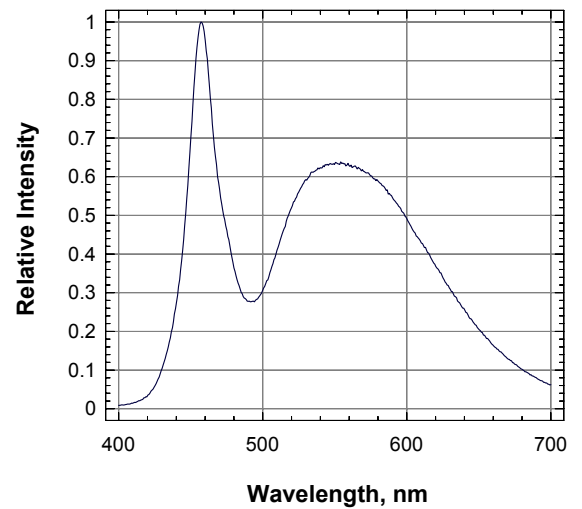
Relative Flux Vs Forward Current



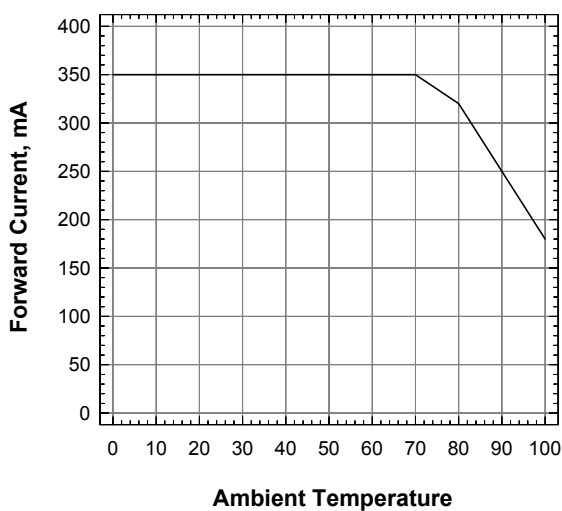
Forward Current Vs Forward Voltage



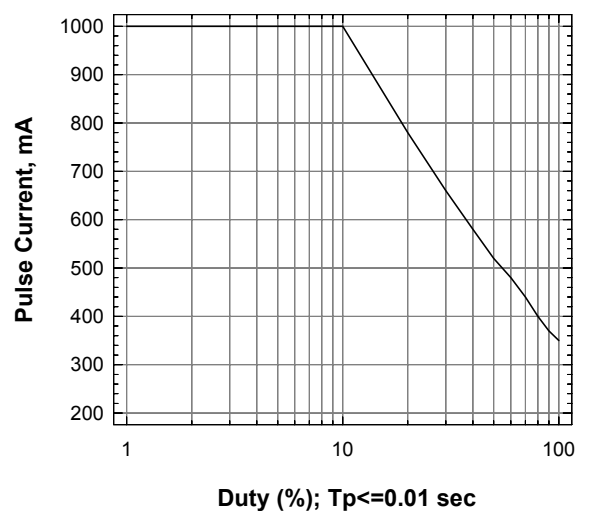
Relative Spectral Emission



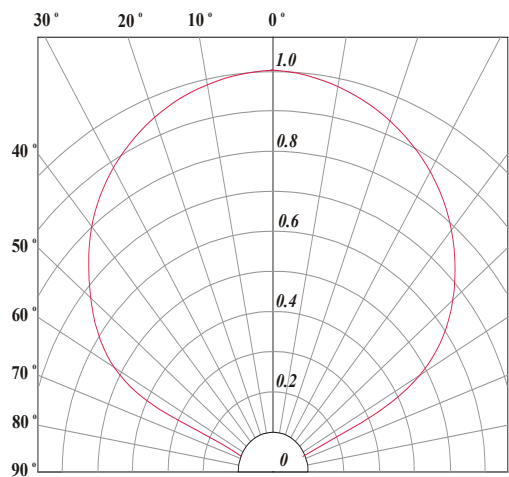
Forward Current Vs Ambient Temperature (Rja=40K/W)



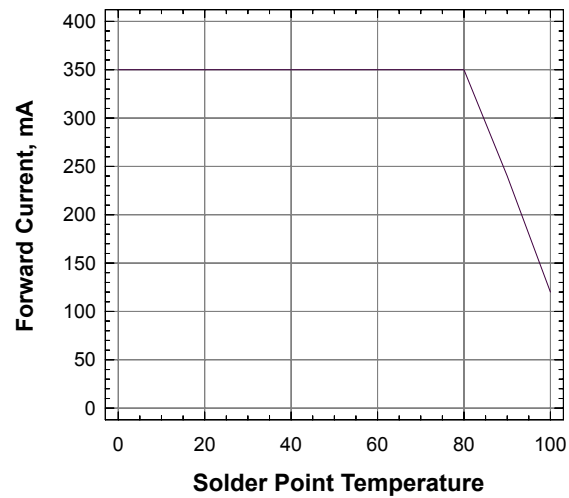
Maximum Permissible Pulse Current



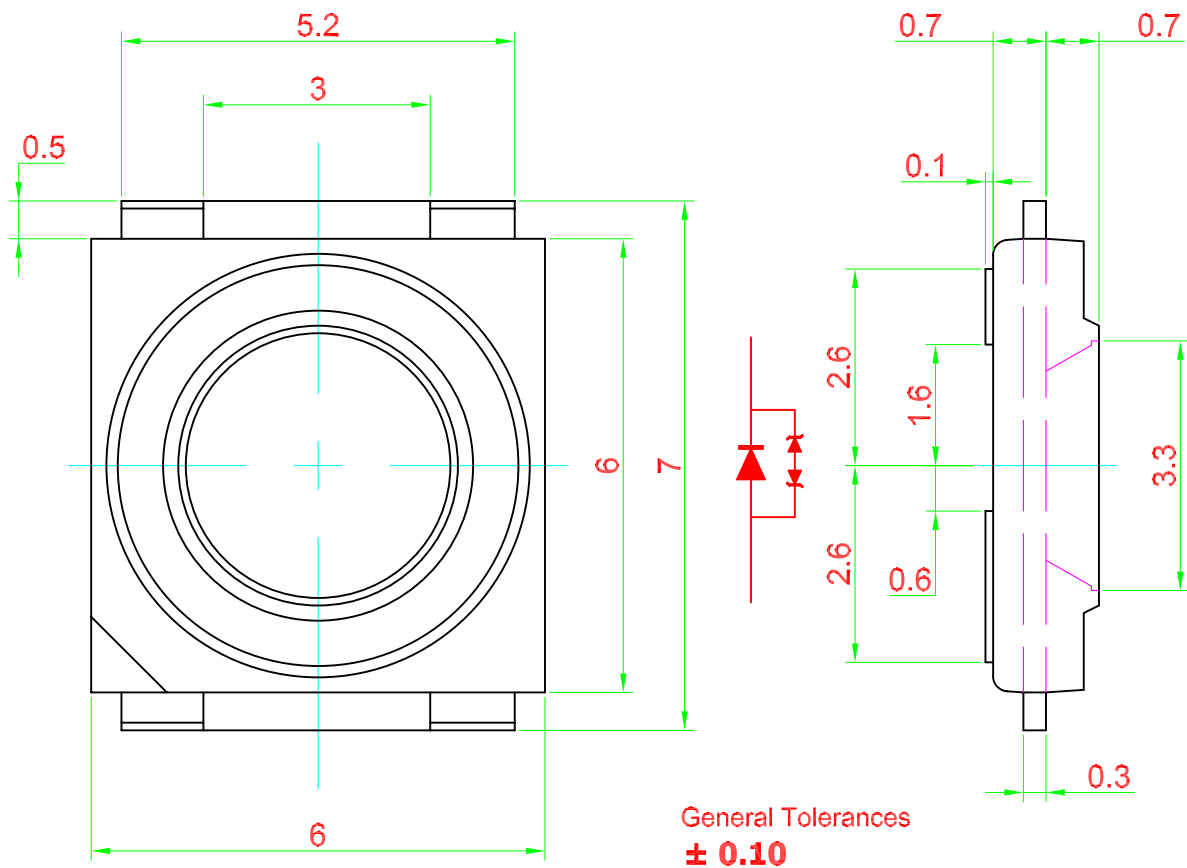
Radiation Pattern



Forward Current Vs Solder Point Temperature

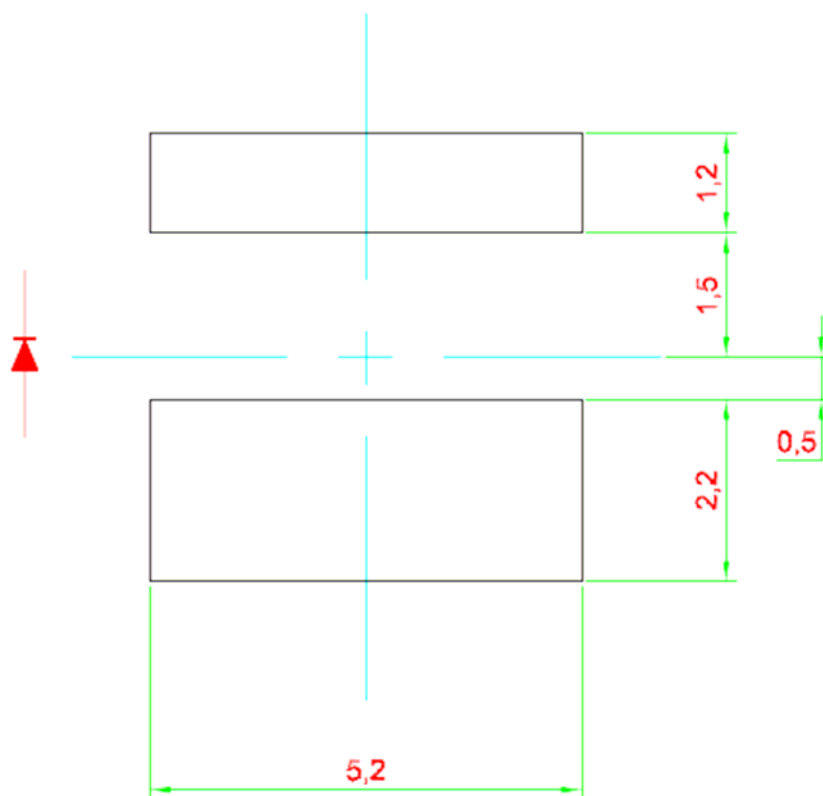


SPNovaLED™ • InGaN White High Lumens : NPW-TSD Package Outlines



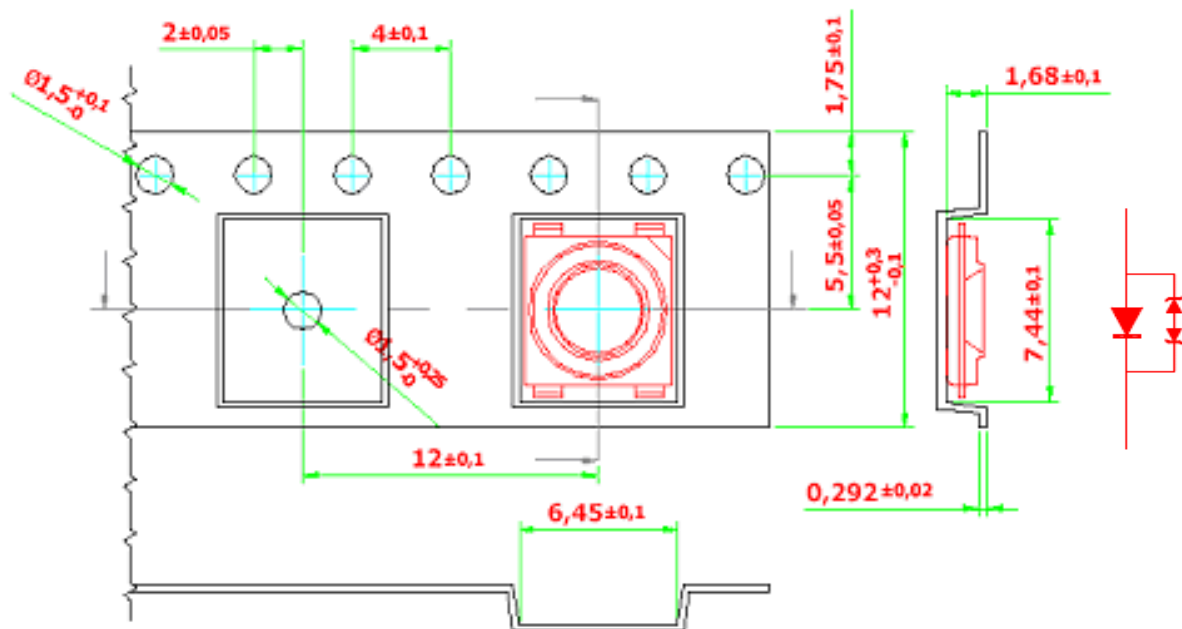
Solder Pad Design

Note: Metal core circuit board (MCPCB) is highly recommended for applications.
Please consult sales and marketing for additional information.

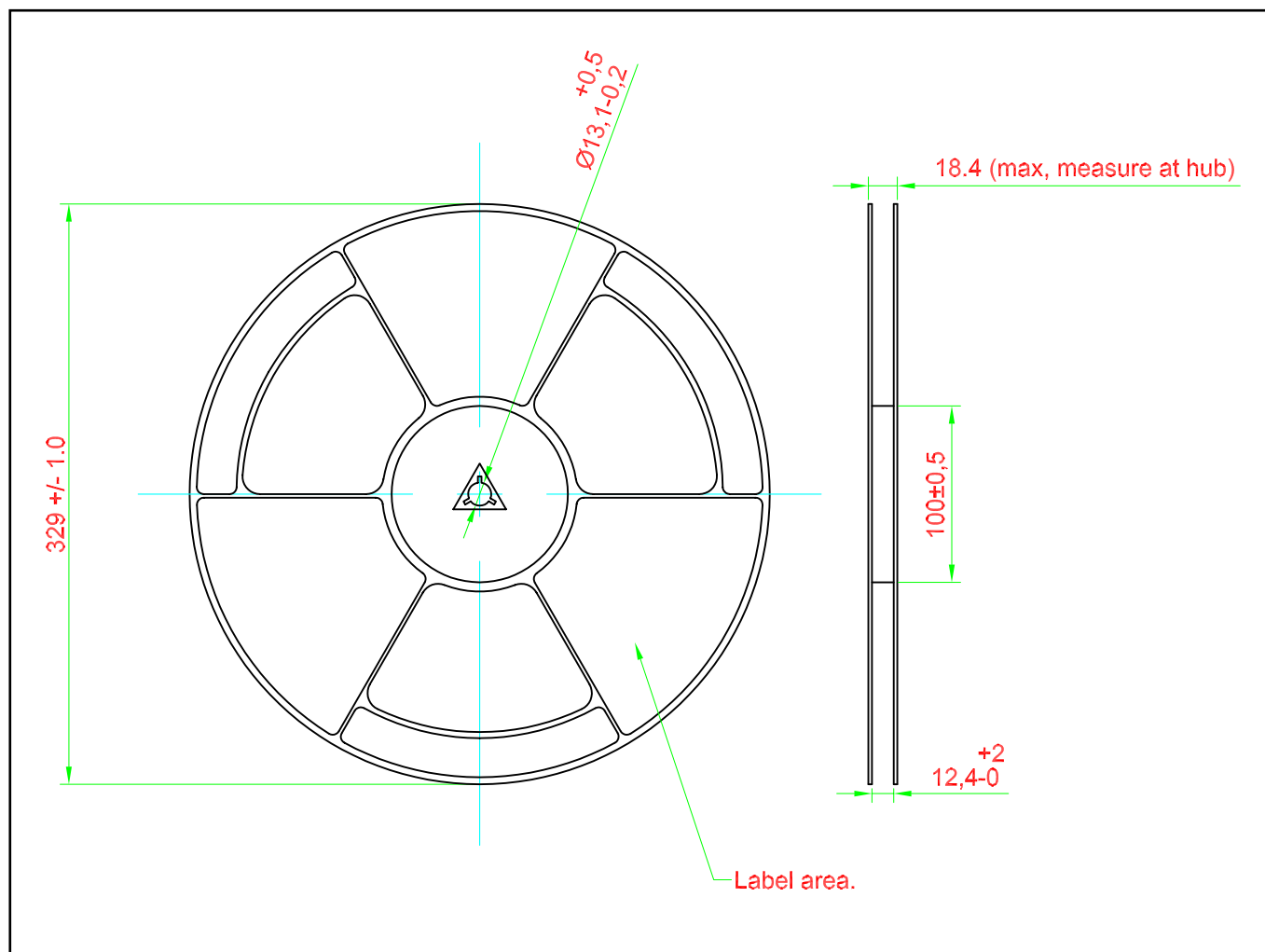


Taping and orientation

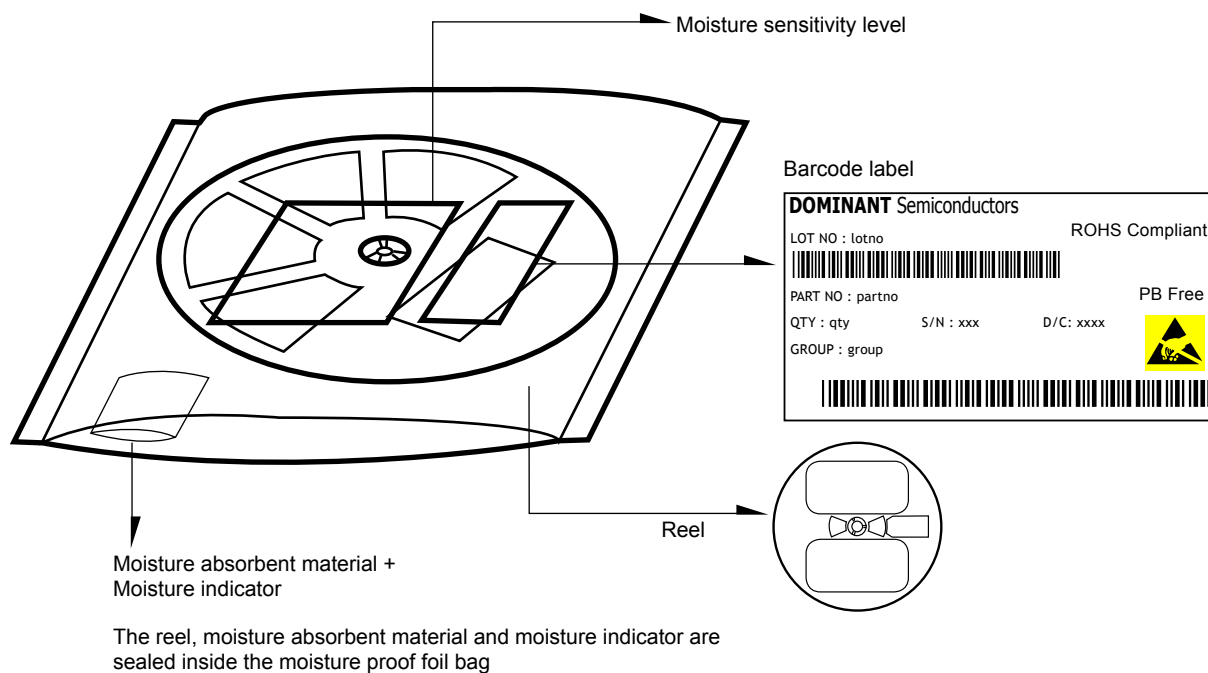
- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



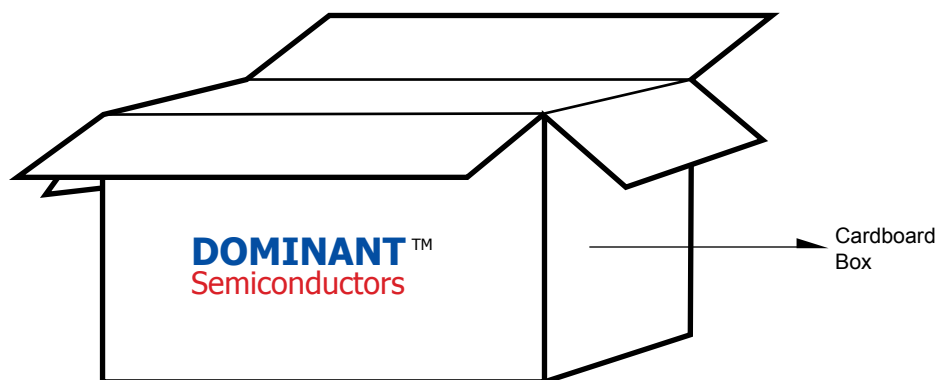
Packaging Specification



Packaging Specification



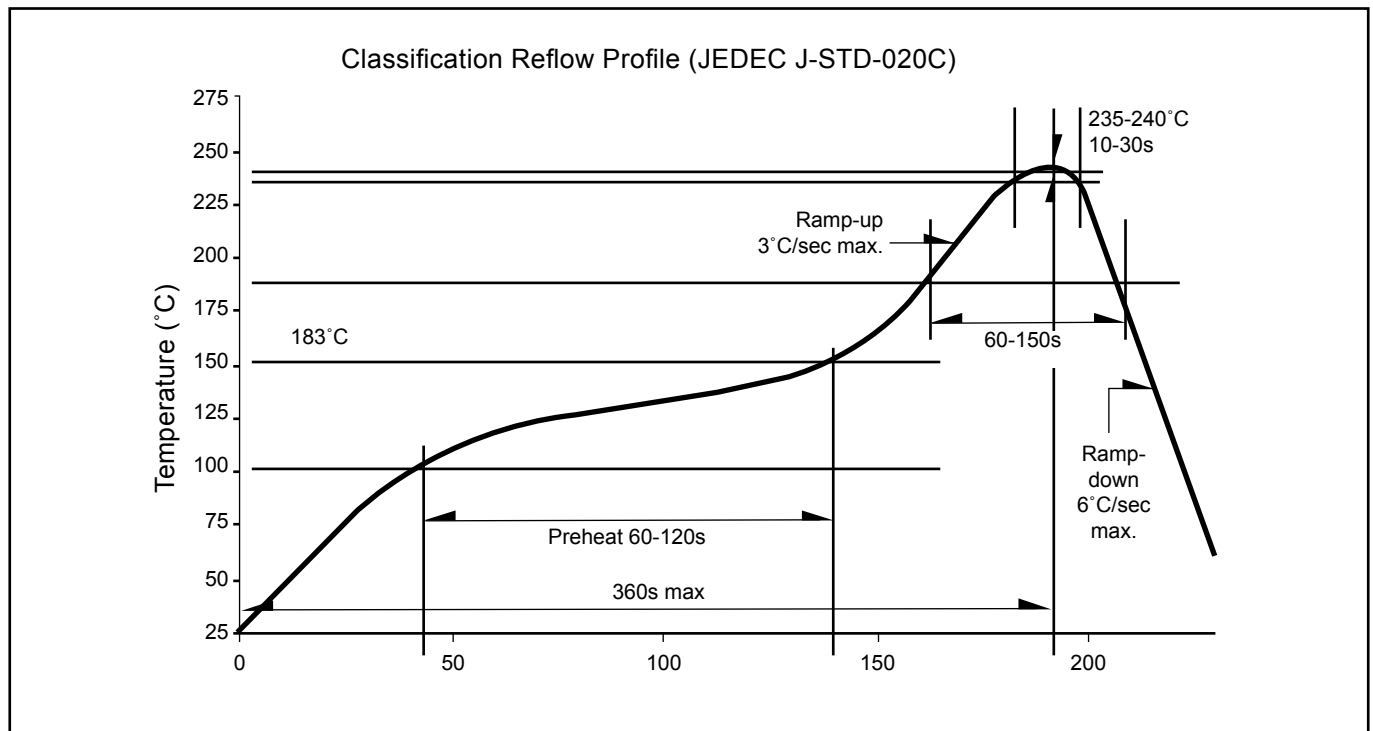
	Average 1pc SPNovaLED	1 completed bag (2000pcs)
Weight (gram)	0.188	800 ± 10



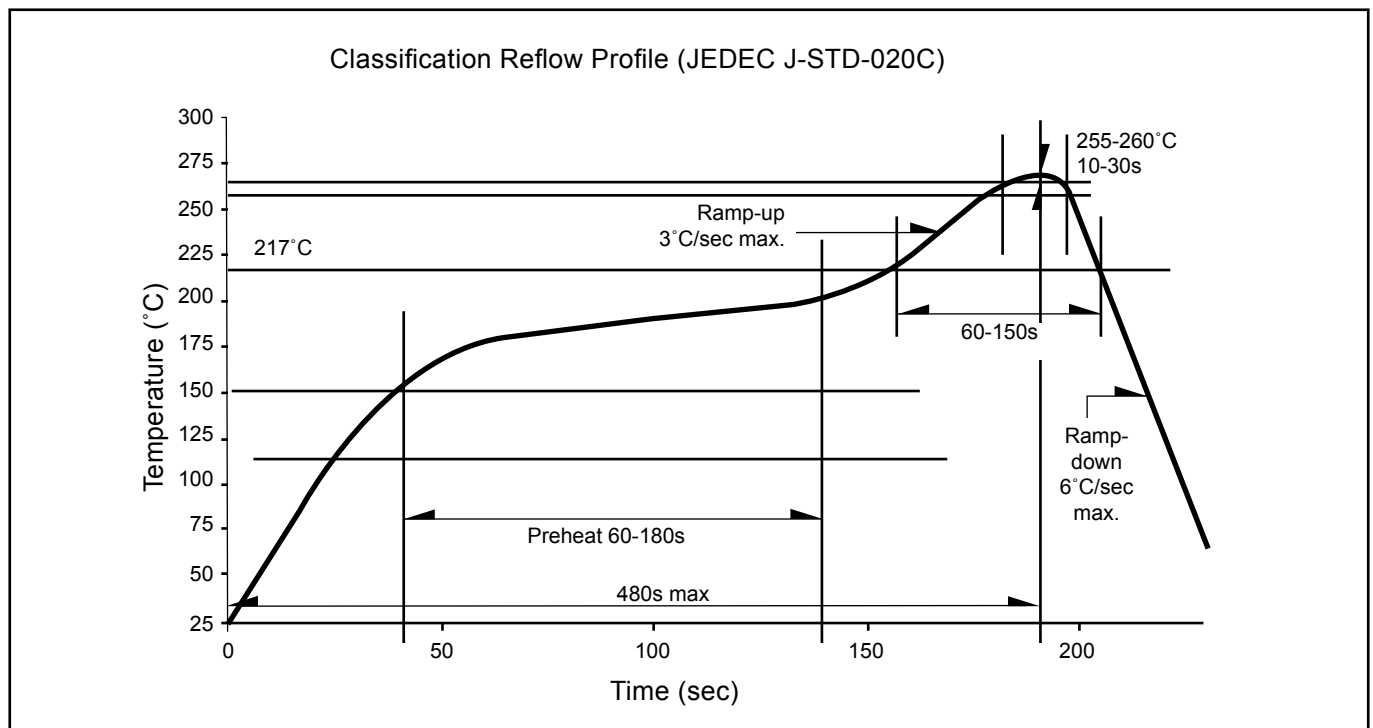
For SPNovaLED™

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



Revision History

Page	Subjects	Date of Modification
-	New Format & Add Maximum Permissible Pulse Current Graph	24 Aug 2006
7	Change package drawing	30 May 2007
1	Update typical flux output to 60lm	24 July 2007
3	Update IV Vs Flux correlation table	24 July 2007
2,4	- Update Luminous Intensity to Luminous Flux - Change color bin structure	14 Mar 2008

NOTE

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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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