DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

SPNova™

InGaN White : NPW-RS7

Product NPW-RS7 will be discontinued.
Product Discontinuation Notice Issued on 12 Jun 2013

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; typical 90 lumens.
> 70° viewing angle.
> Compact package outline (LxW) of 7.0 x 6.0 mm.
> Designed for high current drive; Maximum 350 mA.
> Low thermal resistance; Rth $_{(js)}$ = 18 K/W.
> Qualified according to JEDEC moisture sensitivity Level 2.
> Compatible to IR reflow soldering.
> Environmental friendly; RoHS compliance.

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	Color	Viewing Angle˚	Luminous Flux @ 350mA (lm) Typ.	Luminous Intensity @ 350mA (cd) Min.	Typ.	Max.
NPW-RS7-AJK-1	White	70	90.0	45.0	54.0	71.5

NOTE
1. Luminous intensity is measured with an accuracy of ± 11%.
2. Color distribution may not be uniform across the entire viewing angle. Spectrum is more yellowish at the edges compared to the central axis.
3. 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

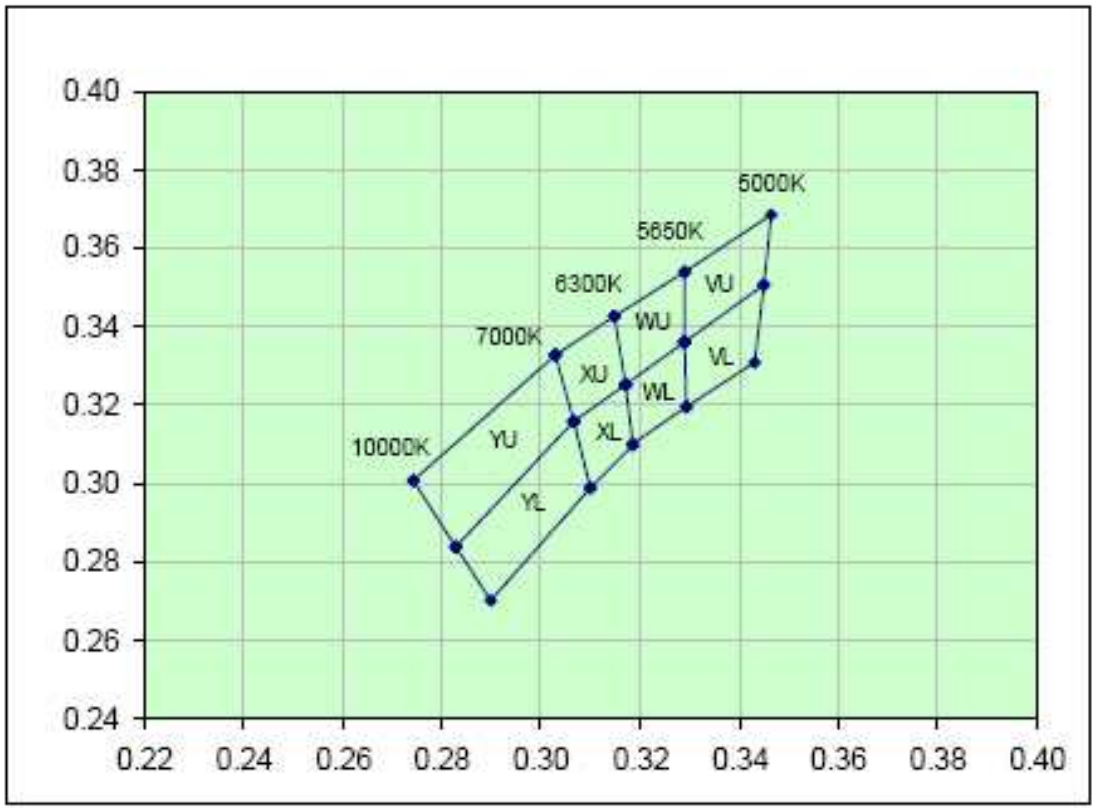
Part Number	Vf @ If = 350mA Min. (V)	Typ. (V)	Max. (V)
NPW-RS7	3.0	3.5	4.0

Forward voltage 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
Peak pulse current	500	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 - White



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

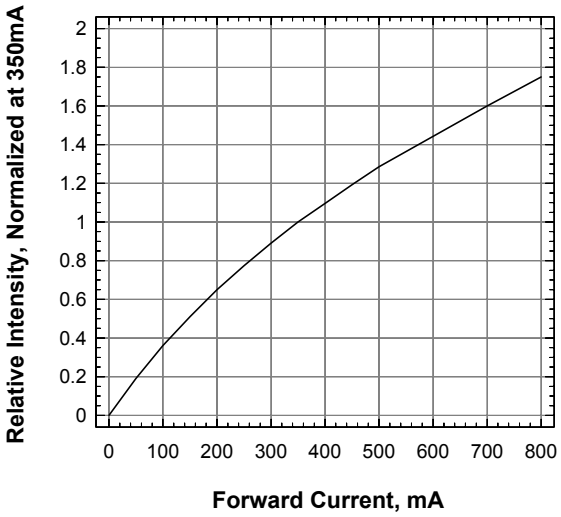
Bin		1	2	3	4
YU	Cx	0.274	0.283	0.307	0.303
	Cy	0.301	0.284	0.316	0.333
YL	Cx	0.283	0.290	0.310	0.307
	Cy	0.284	0.270	0.299	0.316
XU	Cx	0.303	0.307	0.317	0.315
	Cy	0.333	0.316	0.325	0.343
XL	Cx	0.307	0.310	0.319	0.317
	Cy	0.316	0.299	0.310	0.325
WU	Cx	0.315	0.317	0.329	0.329
	Cy	0.343	0.325	0.336	0.354
WL	Cx	0.317	0.319	0.329	0.329
	Cy	0.325	0.310	0.319	0.336
VU	Cx	0.329	0.329	0.345	0.347
	Cy	0.354	0.336	0.350	0.368
VL	Cx	0.329	0.329	0.343	0.345
	Cy	0.336	0.319	0.331	0.350

Luminous Intensity Group at Tj=25˚C

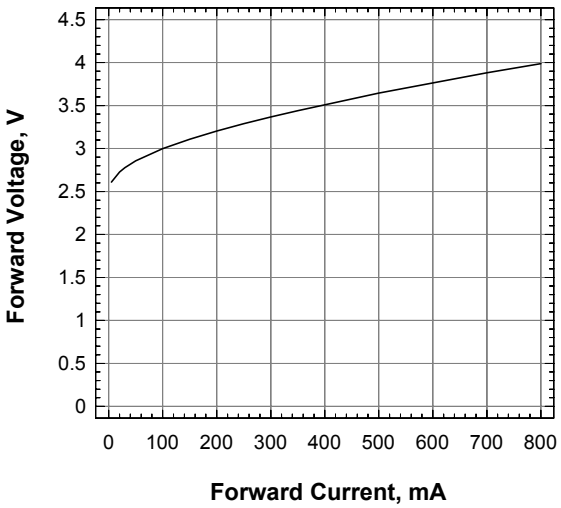
Brightness Group	Luminous Intensity @ 350mA (cd)
AJ	45.0...56.0
AK	56.0...71.5

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

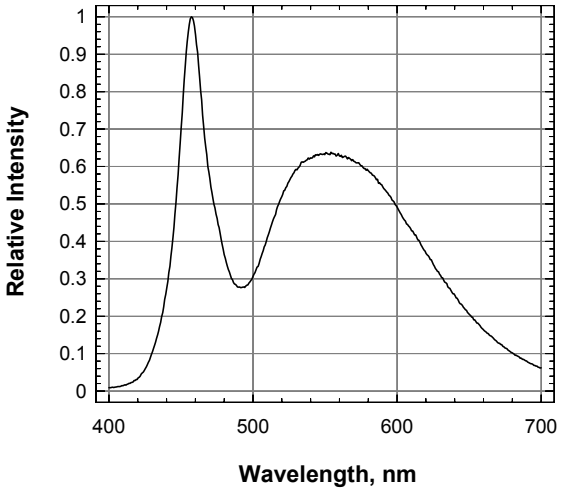
Relative Luminous Intensity Vs Forward Current



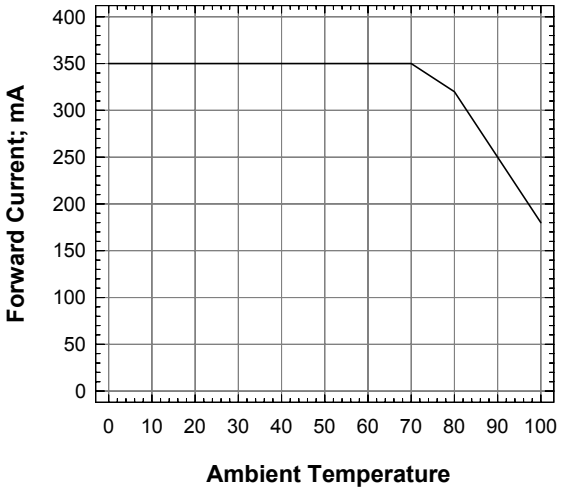
Forward Voltage Vs Forward Current



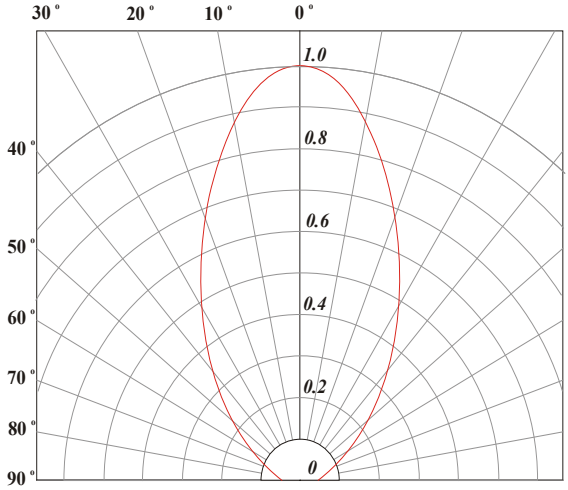
Relative Intensity Vs Wavelength



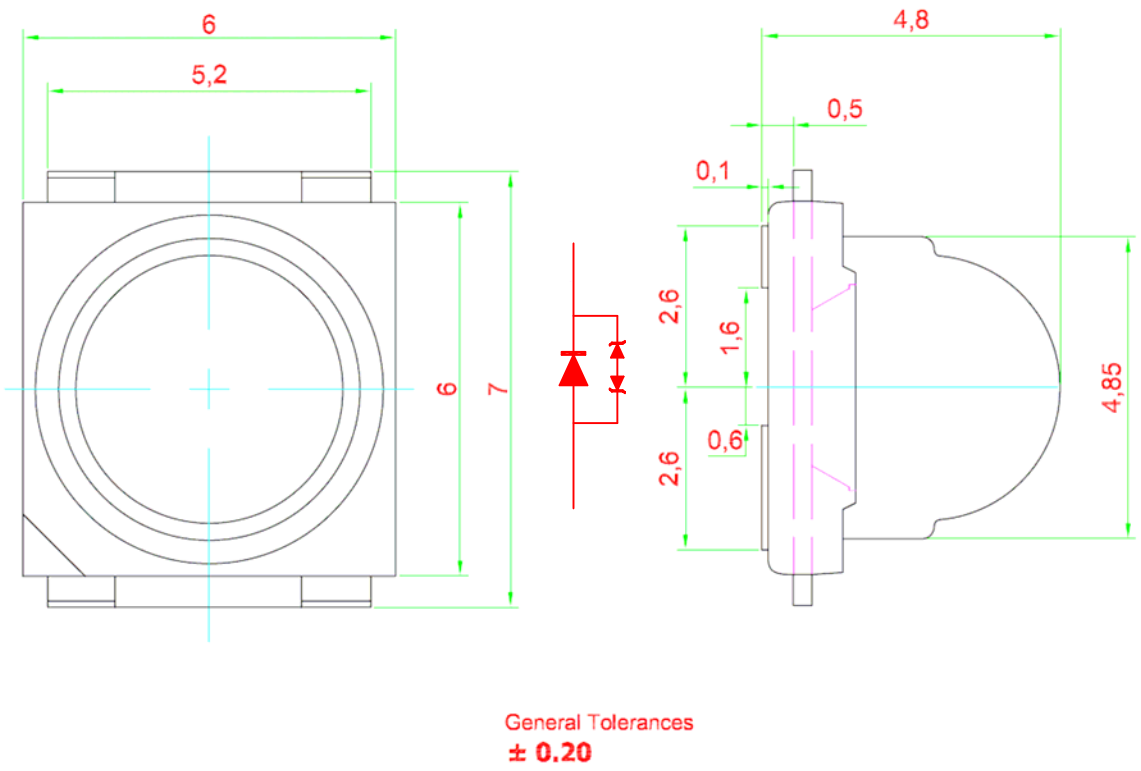
Forward Current Vs Ambient Temperature (Rja=40 K/W)



Radiation Pattern



SPNova™ • InGaN White : NPW-RS7 Package Outlines

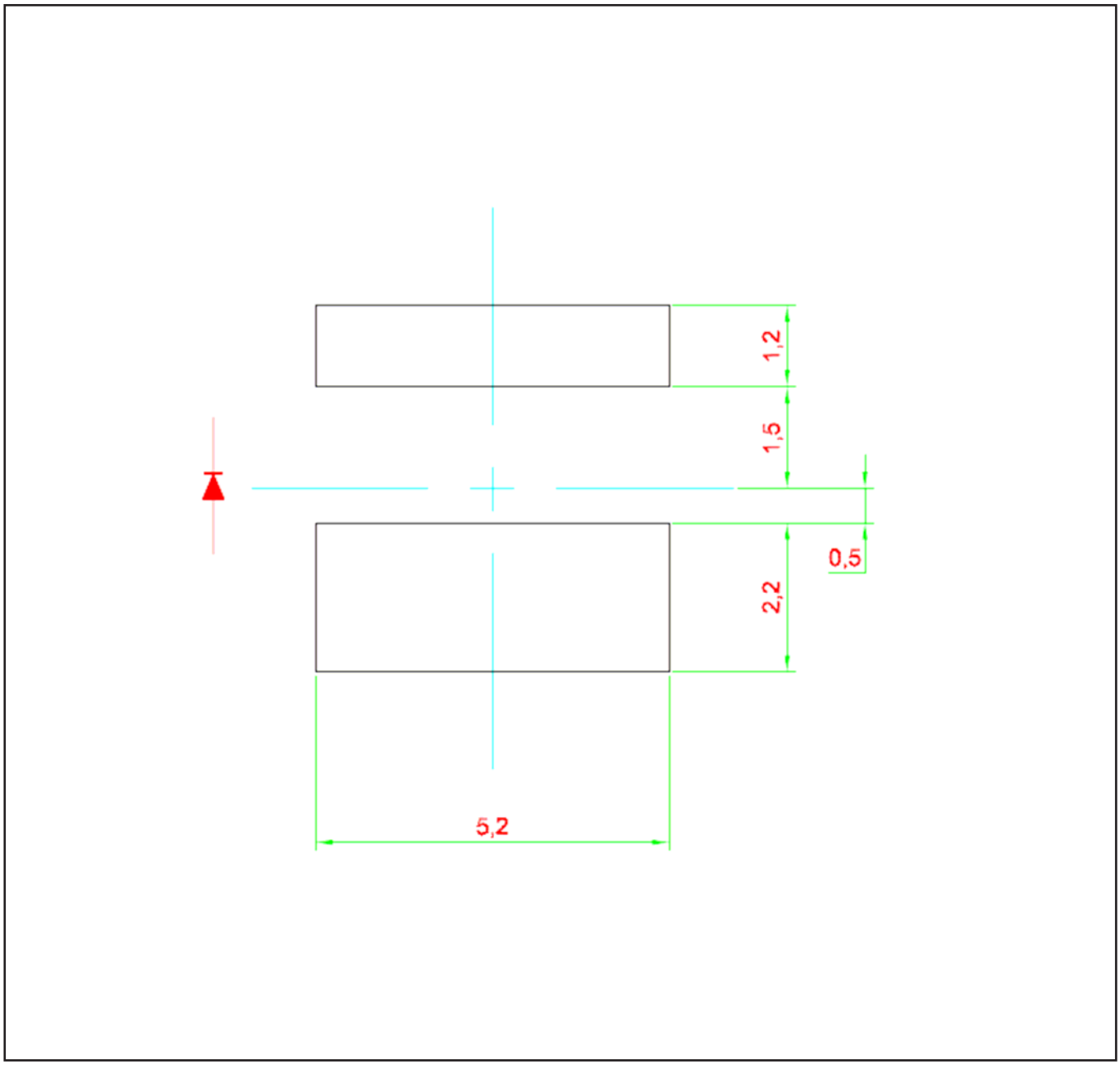


Material

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

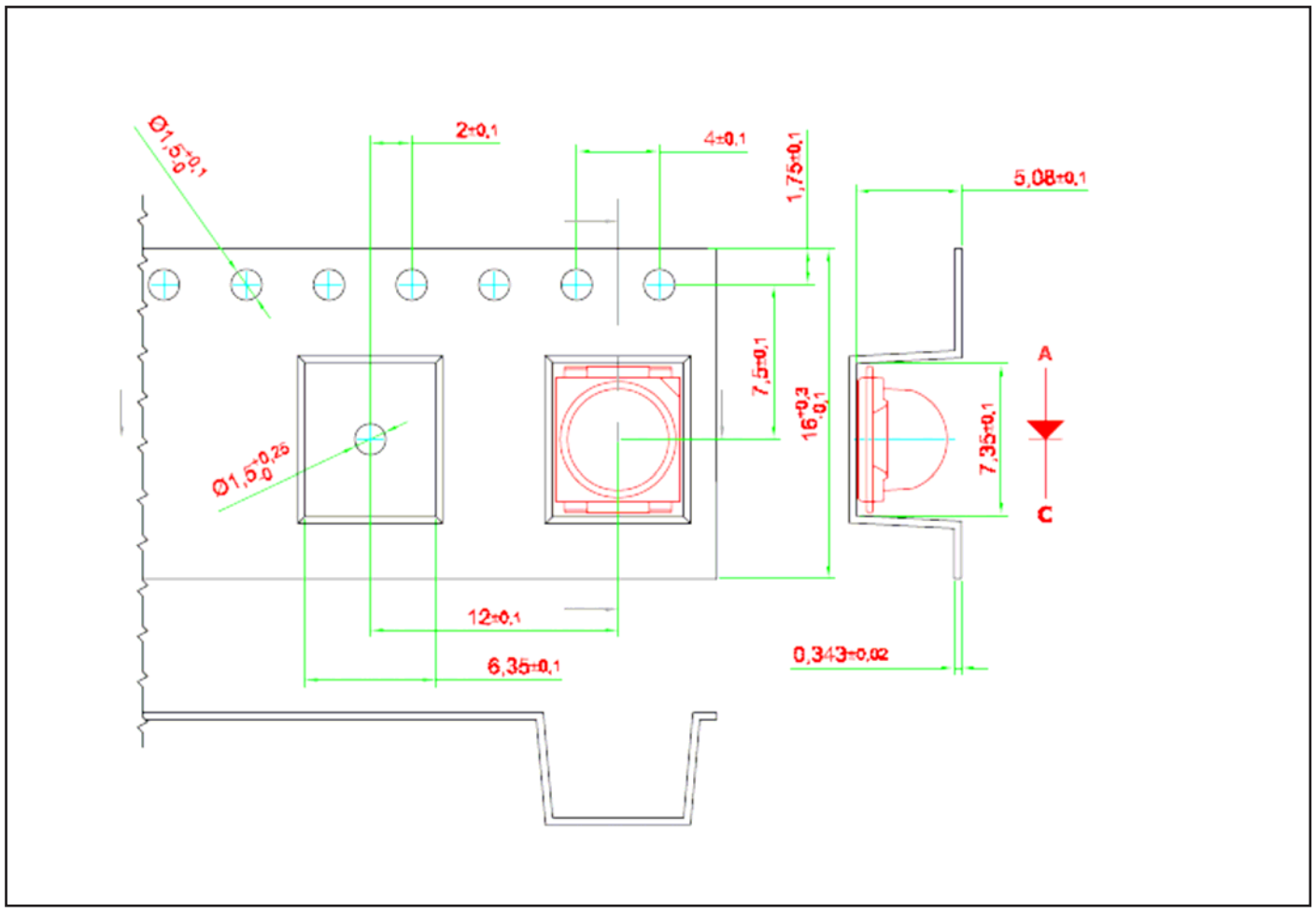
Solder Pad Design

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

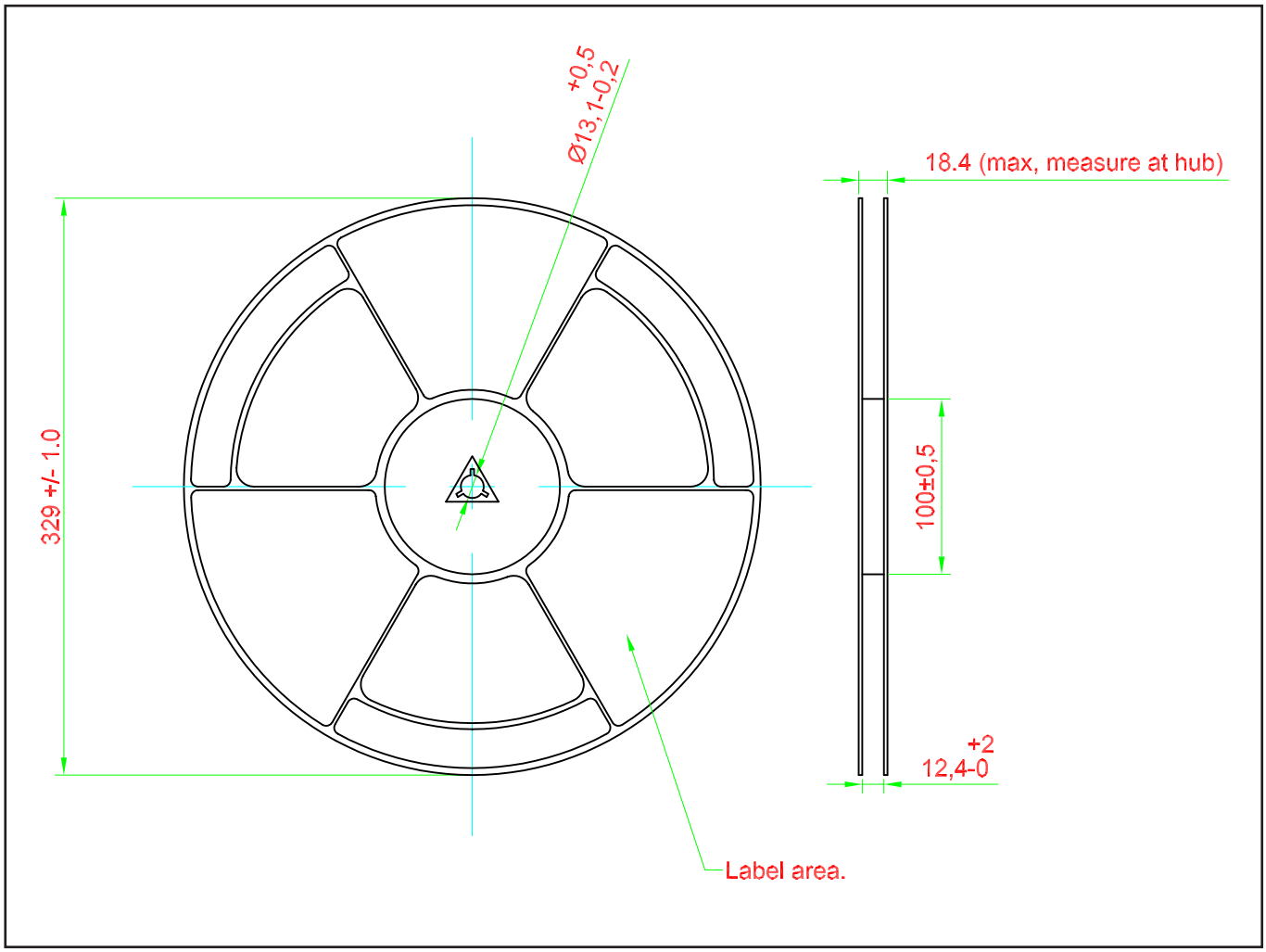


Taping and orientation

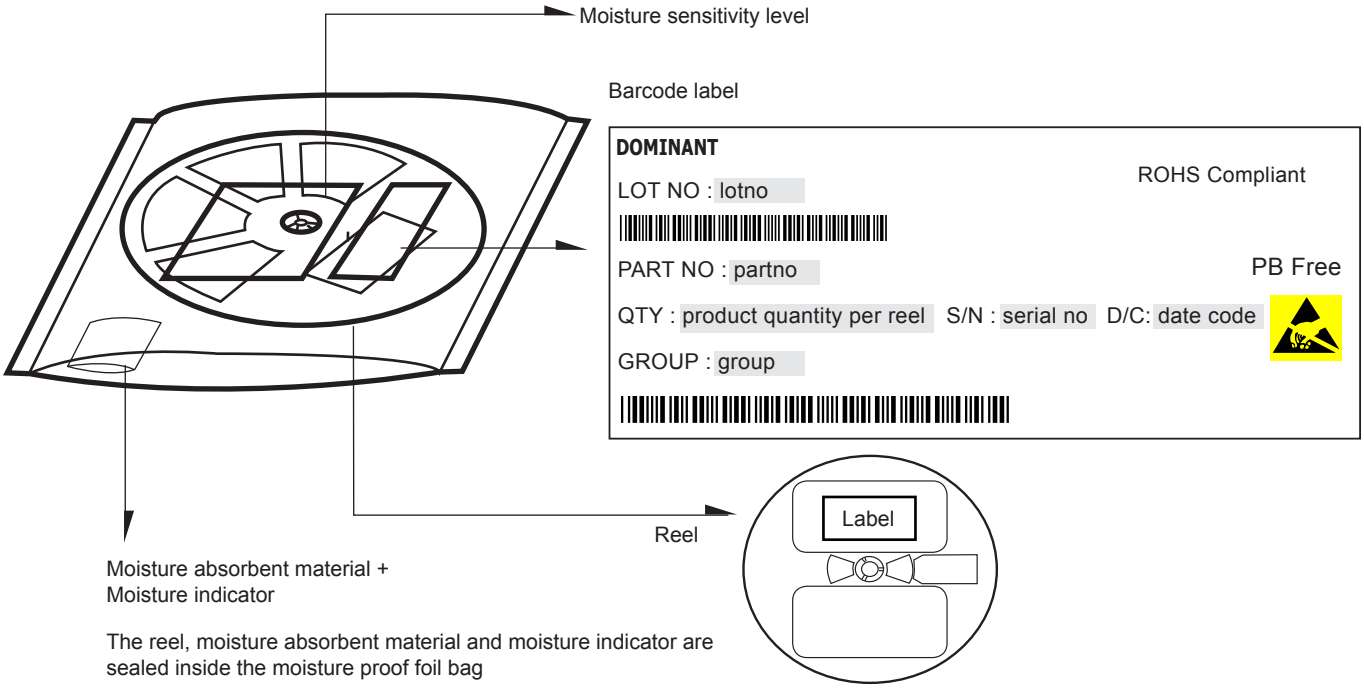
- Reels come in quantity of 1000 units.
- Reel diameter is 330 mm.



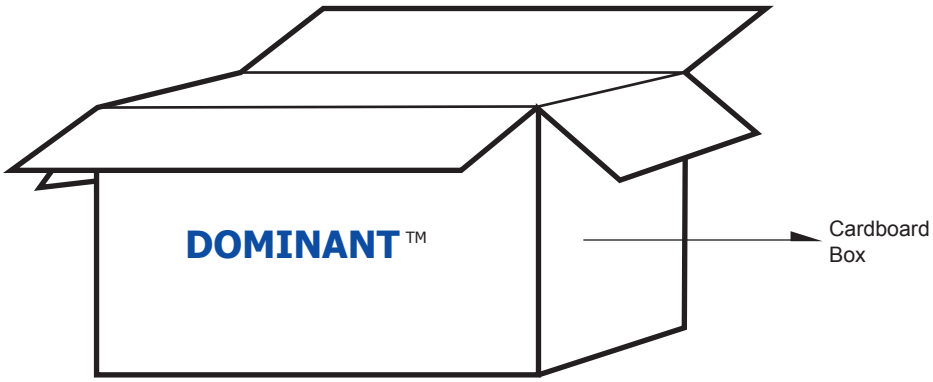
Packaging Specification



Packaging Specification



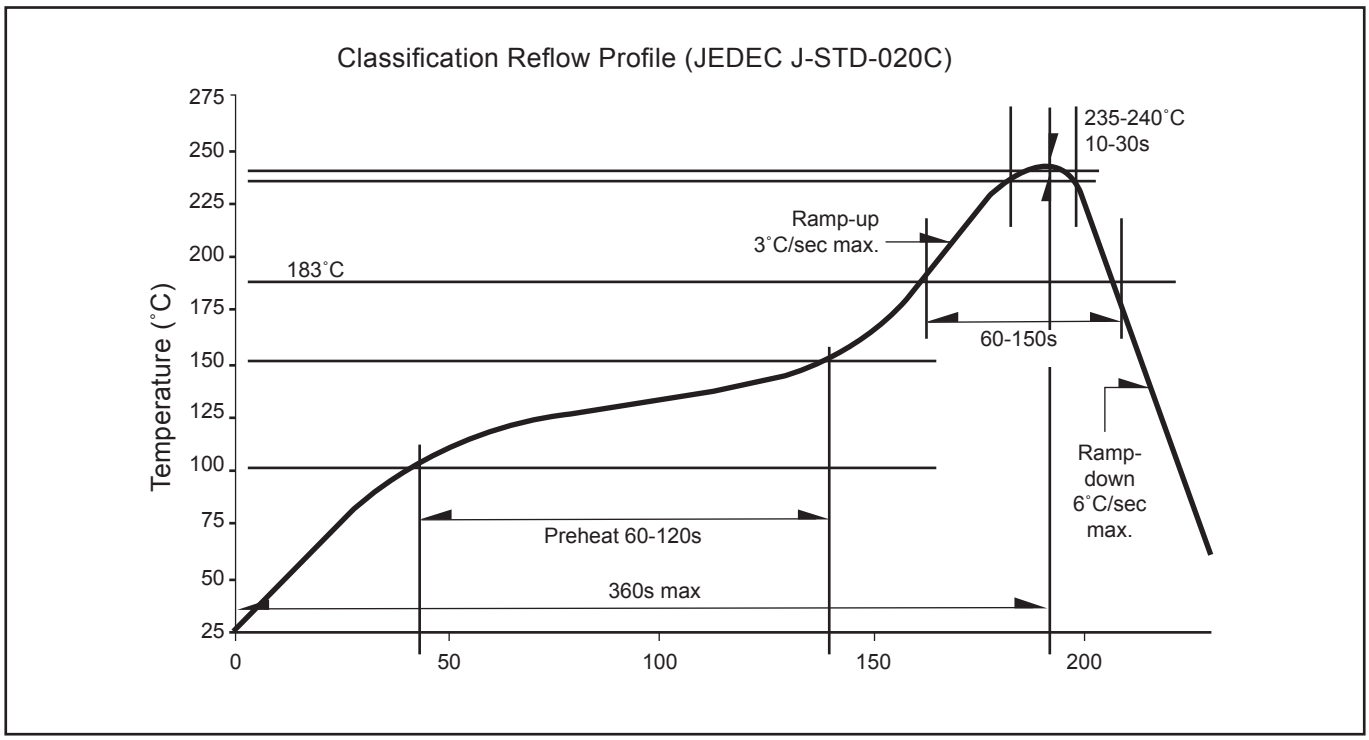
	Average 1pc SPNova	1 completed bag (1000pcs)
Weight (gram)	**0.188**	**800 ± 10**



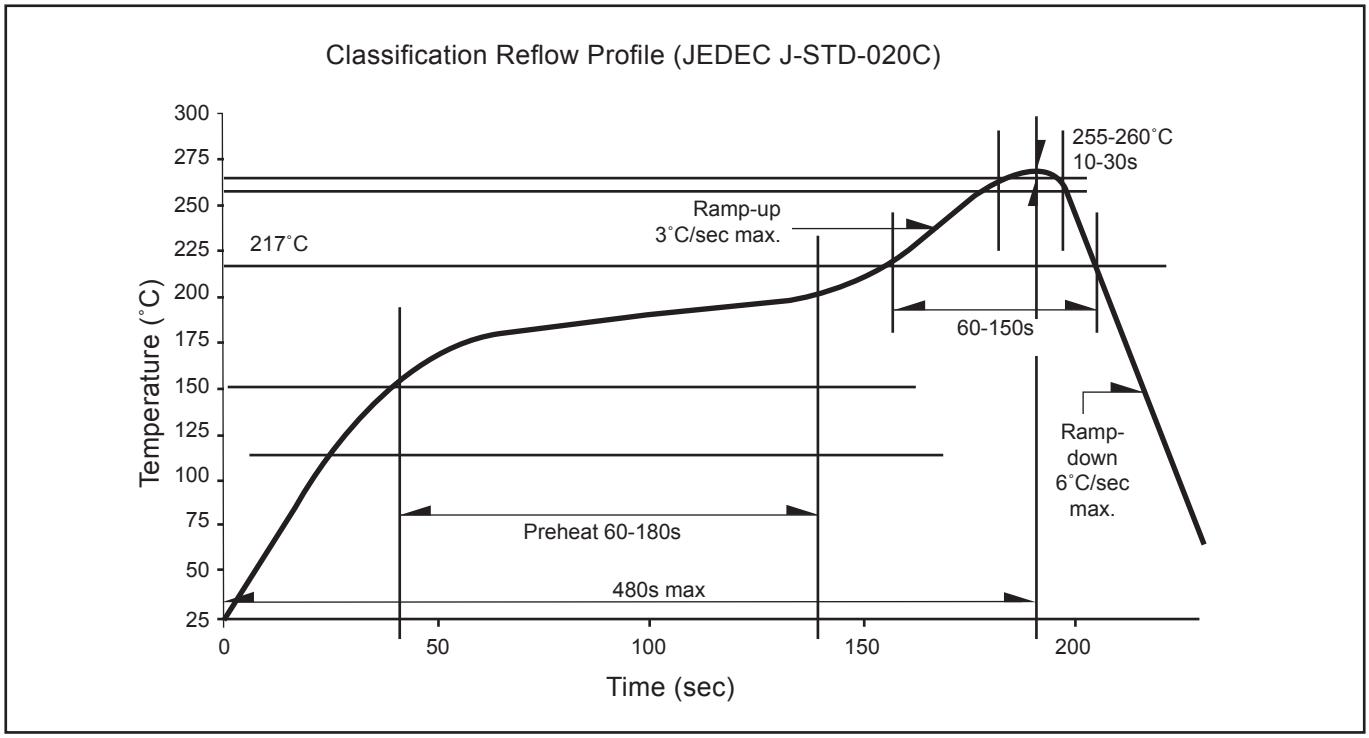
For SPNova™

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	20,000 MAX

Recommended Sn-Pb IR-Reflow Soldering Profile



Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	17 Dec 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.

Please contact us for more information:

Head Quarter

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

DOMINANT Opto Technologies Sdn. Bhd. Shanghai Representative Office

Room 305, No 1600 Zhong Shan Road (W), Shanghai, 200235 P. R. China
Tel: +86 21 6428 6428 Fax: +86 21 6428 6880
E-mail: sales_china@dominant-semi.com

DOMINANT Korea Sales Office

DOMINANT Semiconductors Korea Inc.
RM 211 SUNTEAK CITY APT. 513-15 Sangdaewon-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do, 462-725, Korea
Tel: +82-31-701-5203 Fax: +82-31-701-5204
E-mail: sales_korea@dominant-semi.com

DOMINANT U.S.A Sales Office

25 Rockaway Road, 08833 Lebanon, New Jersey, USA
Tel: (908) 439-9930 Cell: (908) 343-5810 Fax: (908) 439-9929
E-mail: don.wendel@dominant-semi.com

DOMINANT Europe Sales Office

DOMINANT Semiconductors Europe GmbH
Raiffeisenstr. 38, 74906 Bad Rappenau Germany
Tel: +49 (0) 7264-89010-10 / +49 (0) 7264-89010-11 Cell: +49 173-6907370 / +49 173-6907751
Fax: +49 (0) 7264-89010-29
E-mail: gerd.wachno@dominant-semi.eu; hartmut.wettengl@dominant-semi.eu

DOMINANT India Sales Office

C-11,Vasanth Business Centre #86, TTK Road, Alwarpet Chennai - 600 018, INDIA
Tel: 91-44-42030616 / 516 Cell: 91-9444920537 Fax: 91-9444920616
E-mail: pravat.behera@dominant-semi.com

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