DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

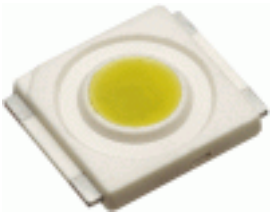
SPNova™

InGaN Yellow : NPZY-RHG

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.
- > 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; rated at 350 mA.
- > Low thermal resistance; Rth $_{(js)}$ = 10 K/W.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Superior corrosion resistance.
- > Excellent reliability with new state-of-the-art phosphor system.

Applications:

- > Automotive: Exterior 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 @ IF = 350mA (lm) Min.	Typ.	Max.
NPZY-RHG-Q3S2-1	InGaN Yellow	120	34.8	42.0	59.0

NOTE
1. Luminous flux is measured with an accuracy of ± 11%.
2. Luminous flux is measured with a 25 ms pulse.
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)
NPZY-RHG	2.9	3.2	3.7

Forward voltage are measure using a current pulse of 1 ms and with an accuracy of ± 0.1V.

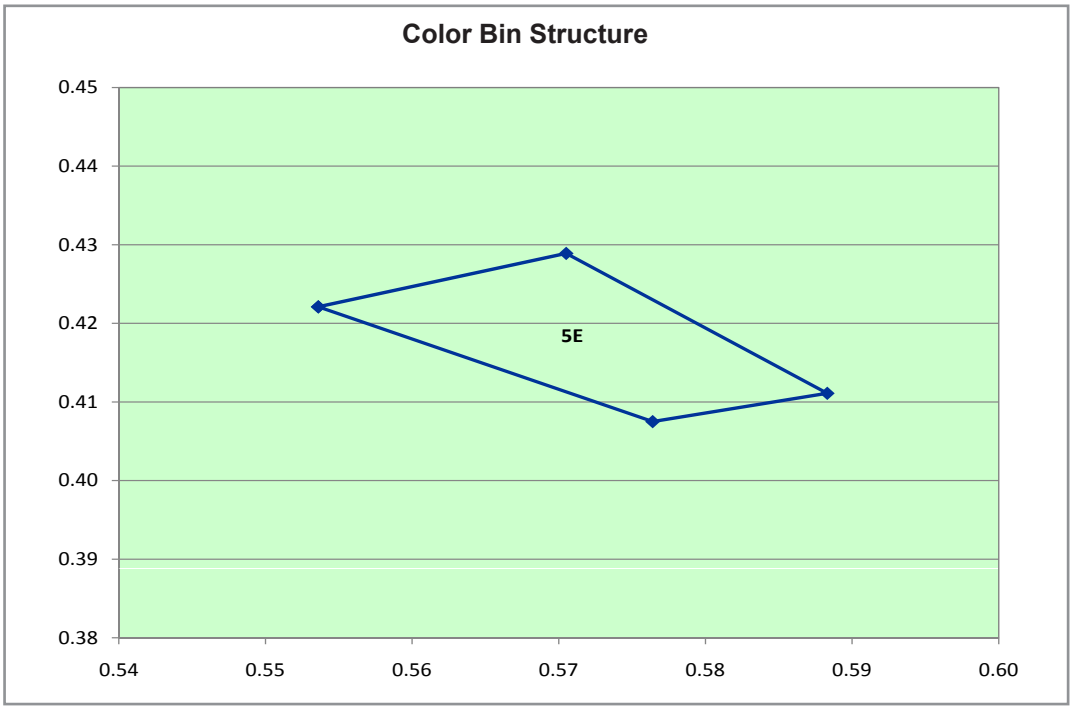
Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	350	mA
Peak pulse current	1000	mA
Reverse Voltage	Not designed for reverse bias	V
ESD threshold (HBM)	2000	V
LED junction temperature	135	˚C
Operating temperature	-40 … +125	˚C
Storage temperature	-40 … +125	˚C
Thermal resistance - Junction / ambient, $R_{th\ JA}$ - Junction / solder point, $R_{th\ JS}$ (Mounting on Dominant Standard MCPCB)	40 10	 K/W K/W

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of V_F (typ) I_F = 350mA; 0 ˚C <= T <= 85˚C	TC_V	NPZY-RHG	-2.10	mV / K
Temperature coefficient of total flux (typ) I_F = 350mA; 0 ˚C <= T <= 85 ˚C	TC_{IV}	NPZY-RHG	-0.18	% / K
Temperature coefficient of Cx (typ) I_F = 350mA; 0 ˚C <= T <= 85 ˚C	TC_{Cx}	NPZY-RHG	-0.00002	/ K
Temperature coefficient of Cy (typ) I_F = 350mA; 0 ˚C <= T <= 85 ˚C	TC_{Cy}	NPZY-RHG	-0.00002	/ K

NPZY-RHG, Color Grouping



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

Bin		1	2	3	4
5E	Cx	0.5536	0.5705	0.5883	0.5764
	Cy	0.4221	0.4289	0.4111	0.4075

Dominant color coordinate is measured with an accuracy of ± 0.01.

Luminous Flux Group at Tj=25˚C

Brightness Group	Luminous Flux (lm)
Q3	34.8 ... 39.8
R2	39.8 ... 45.2
R3	45.2 ... 51.7
S2	51.7 ... 59.0

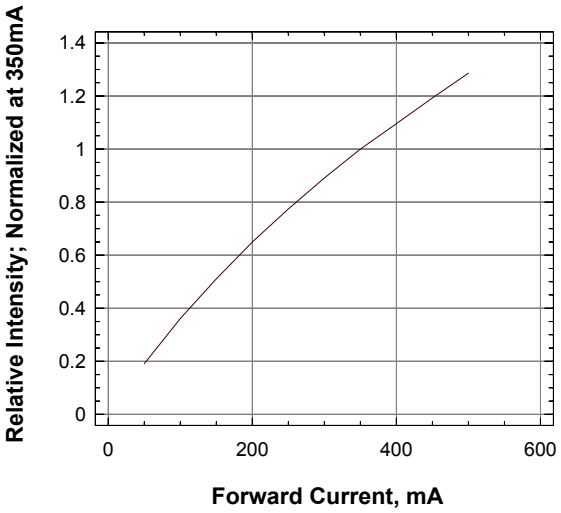
Luminous flux is measured with an accuracy of ± 11%.

Vf Binning (Optional)

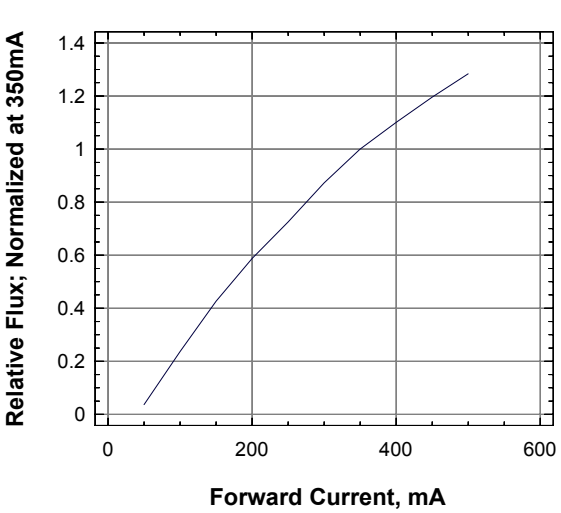
Vf Bin @ 350mA	Forward Voltage (V)
V1	2.90 ... 3.00
V2	3.00 ... 3.10
V3	3.10 ... 3.20
V4	3.20 ... 3.30
V5	3.30 ... 3.40
V6	3.40 ... 3.50
V7	3.50 ... 3.60
V8	3.60 ... 3.70

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.

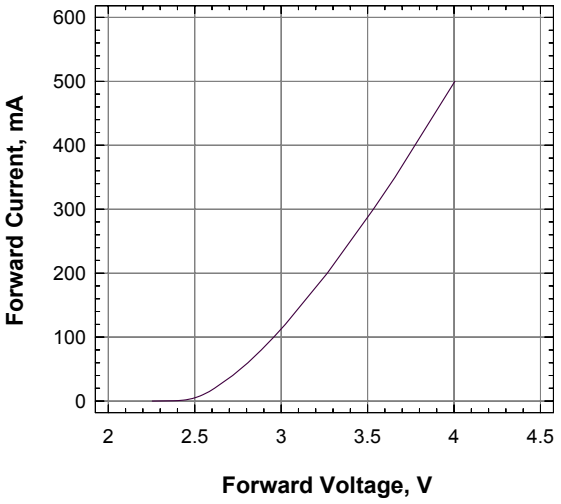
Relative Intensity Vs Forward Current



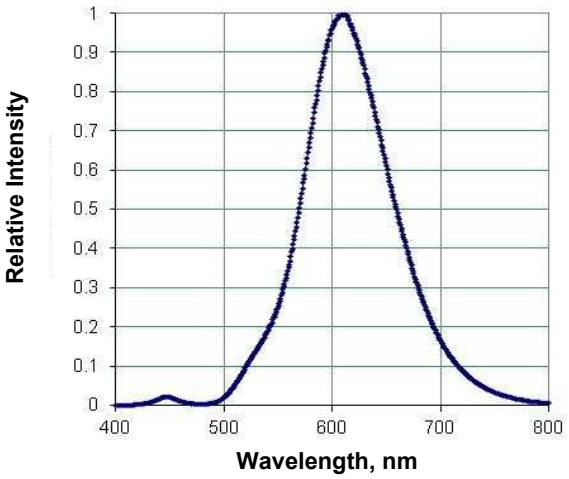
Relative Flux Vs Forward Current



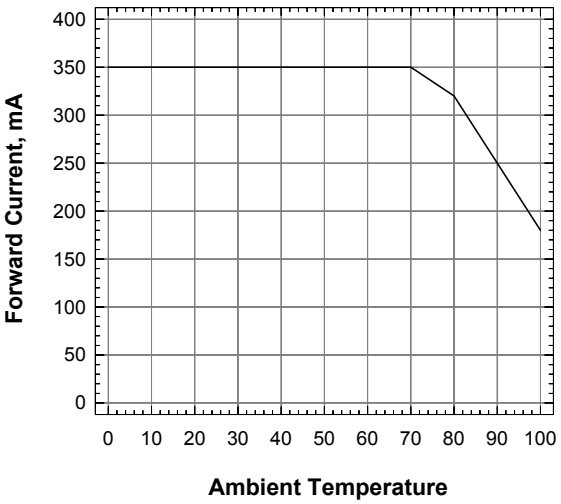
Forward Current Vs Forward Voltage



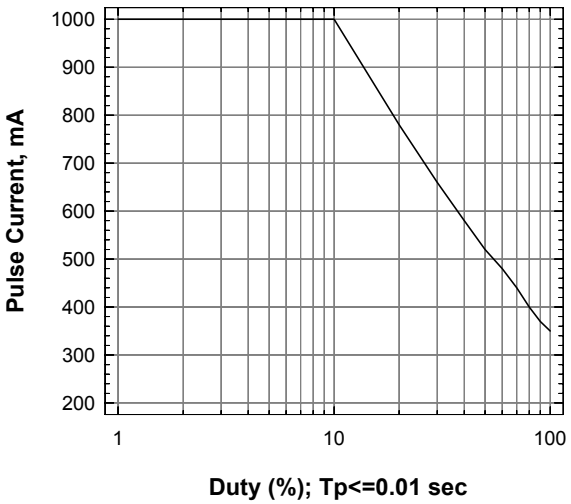
Relative Spectral Emission



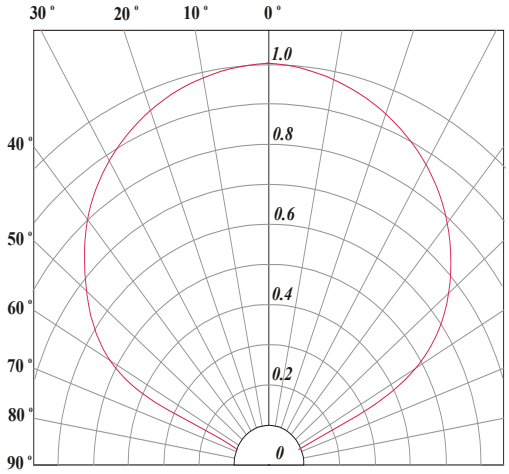
Forward Current Vs Ambient Temperature (Rja=40K/W)



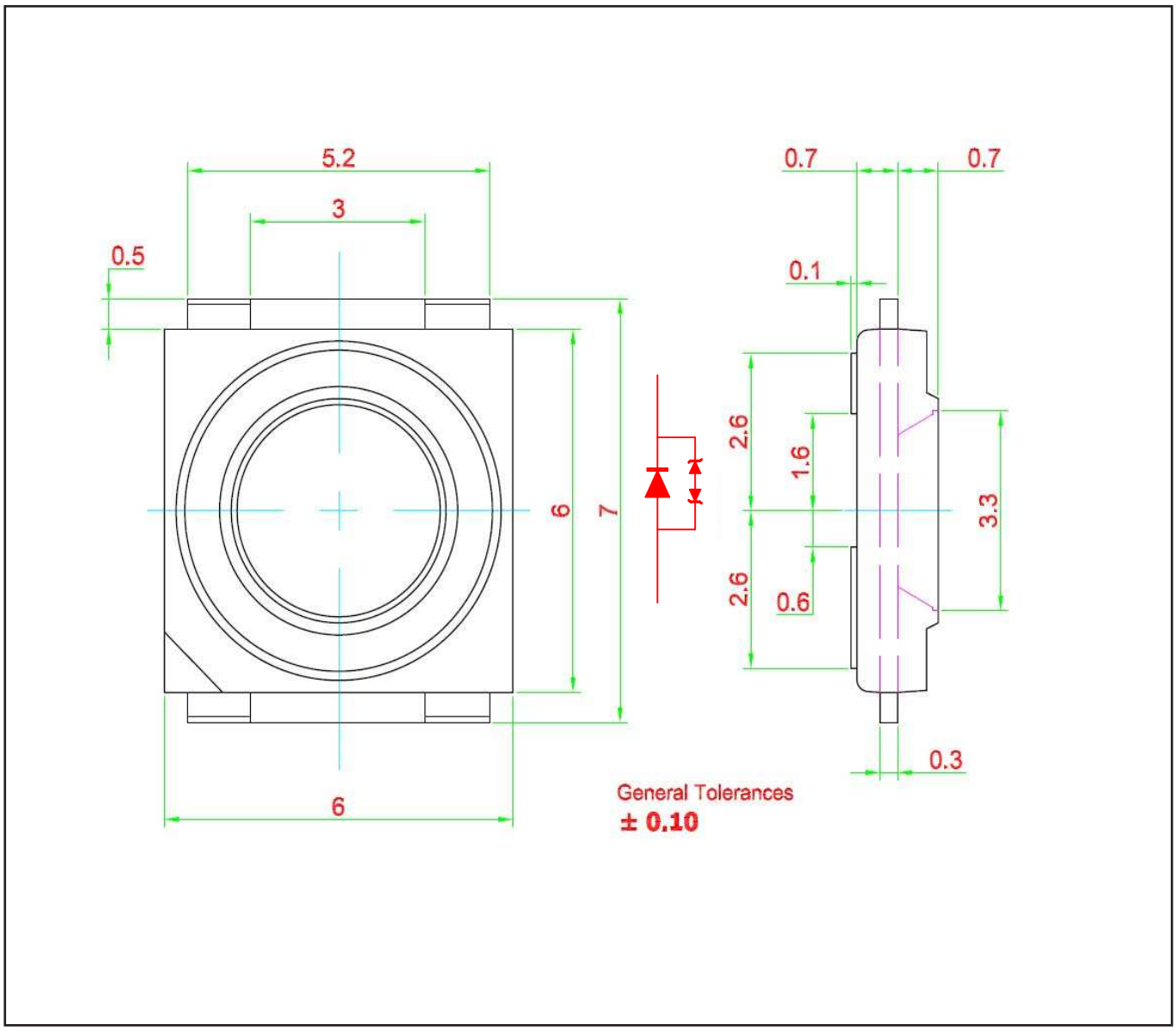
Maximum Permissible Pulse Current



Radiation Pattern



SPNova™ • InGaN Yellow : NPZY-RHG Package Outlines

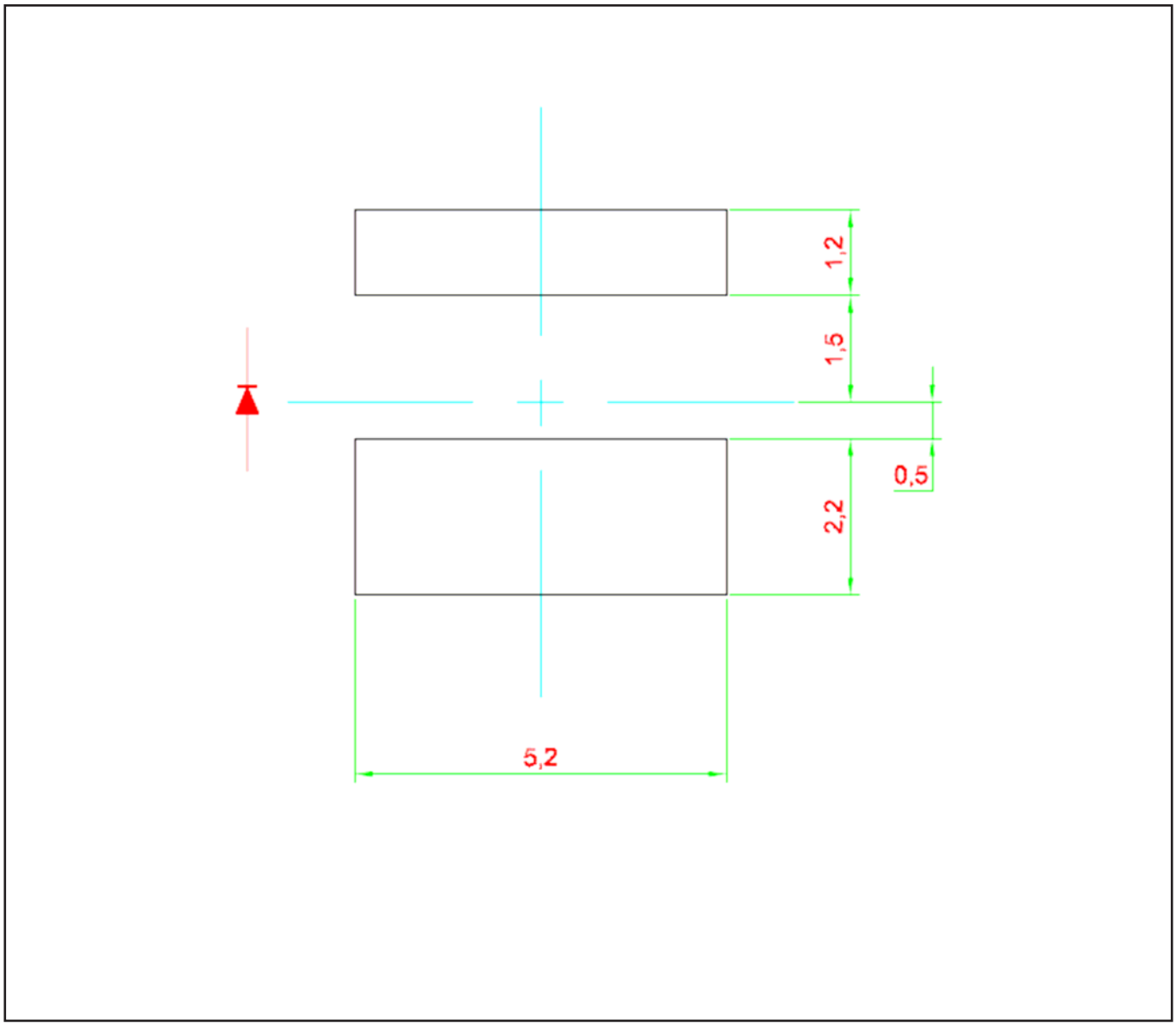


Material

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

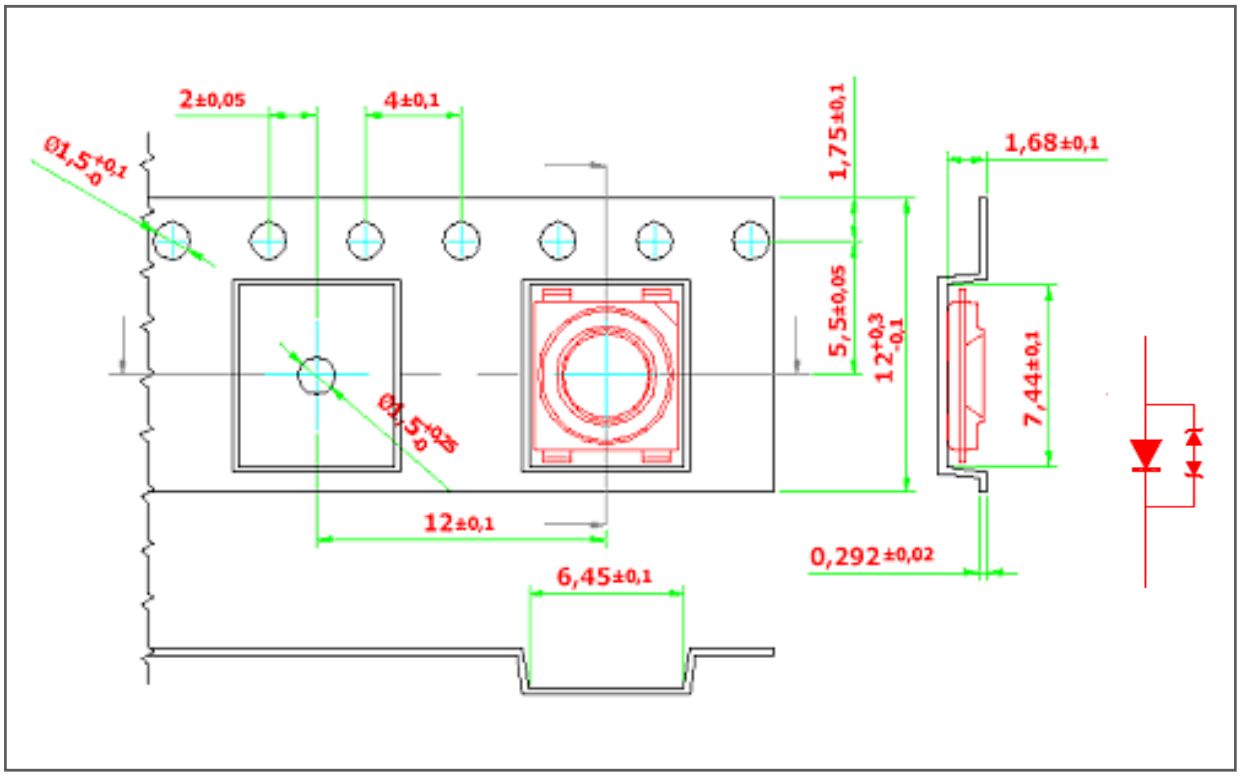
Solder Pad Design

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

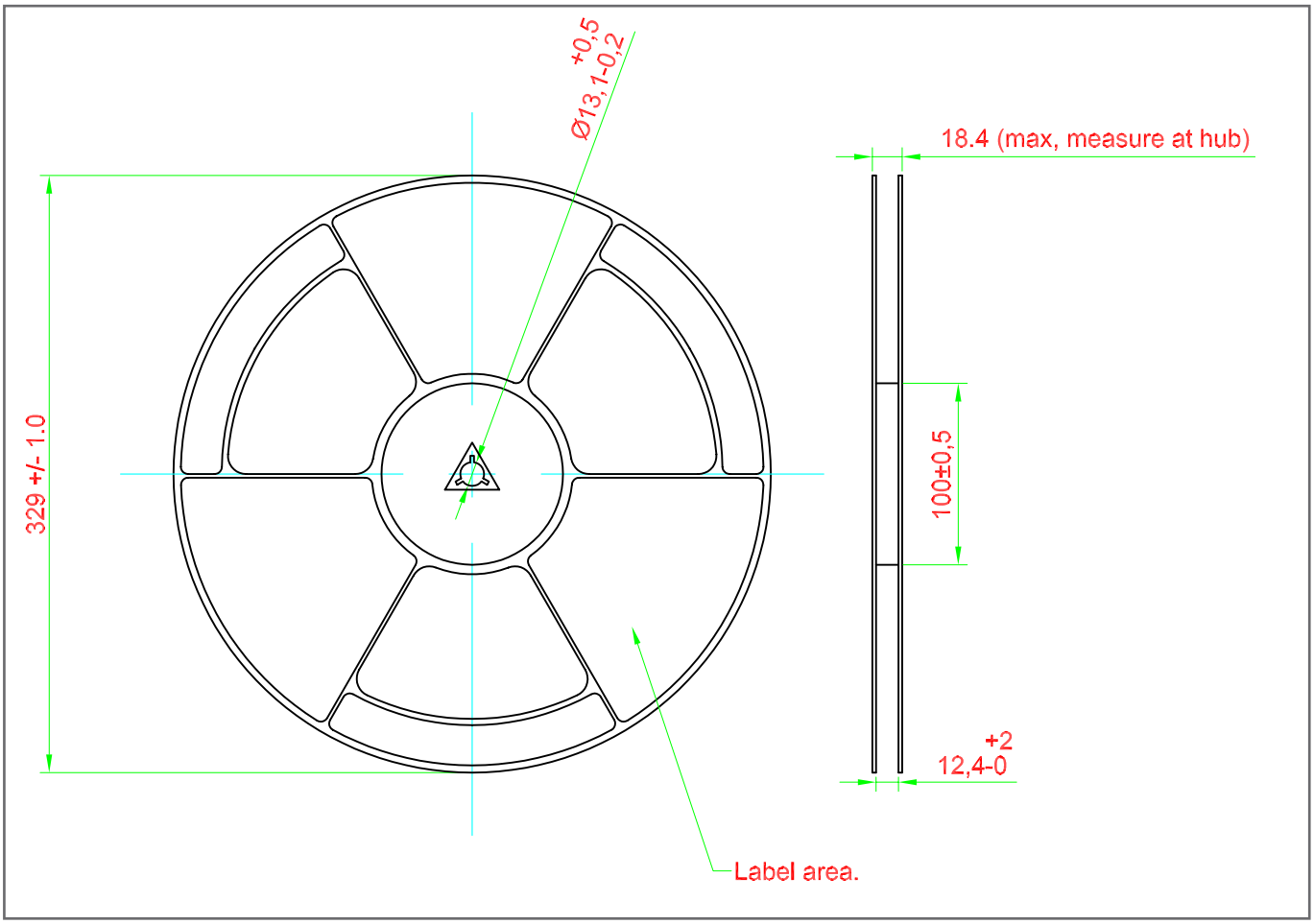


Taping and orientation

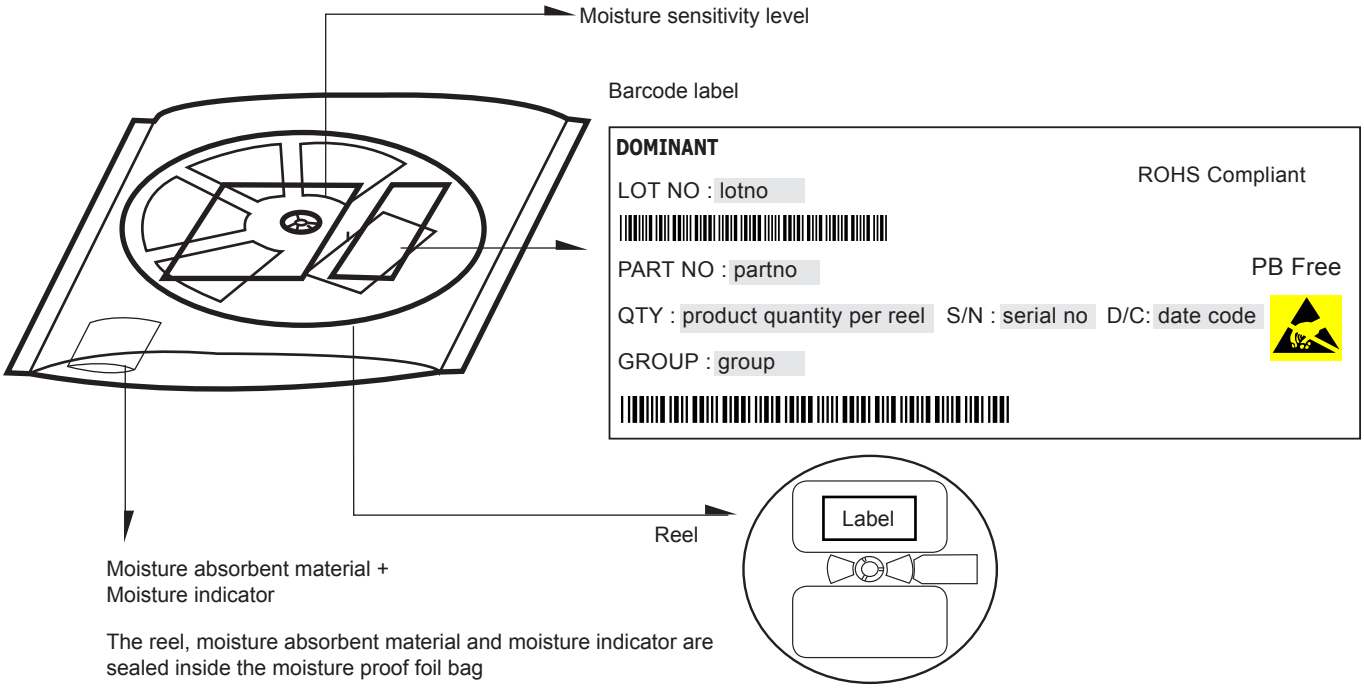
- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



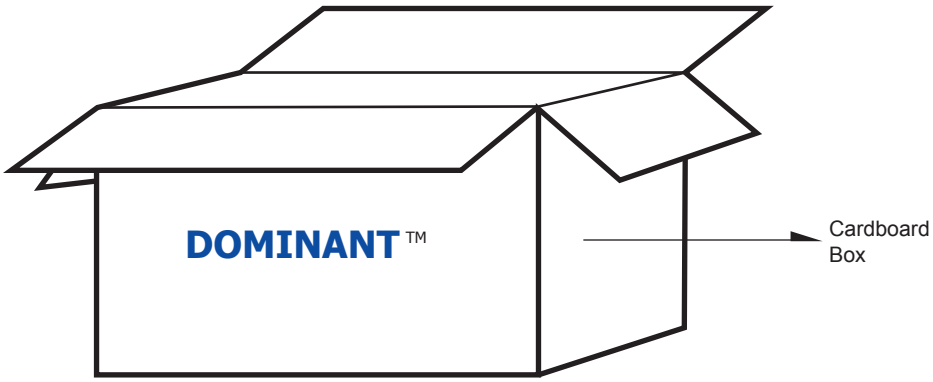
Packaging Specification



Packaging Specification



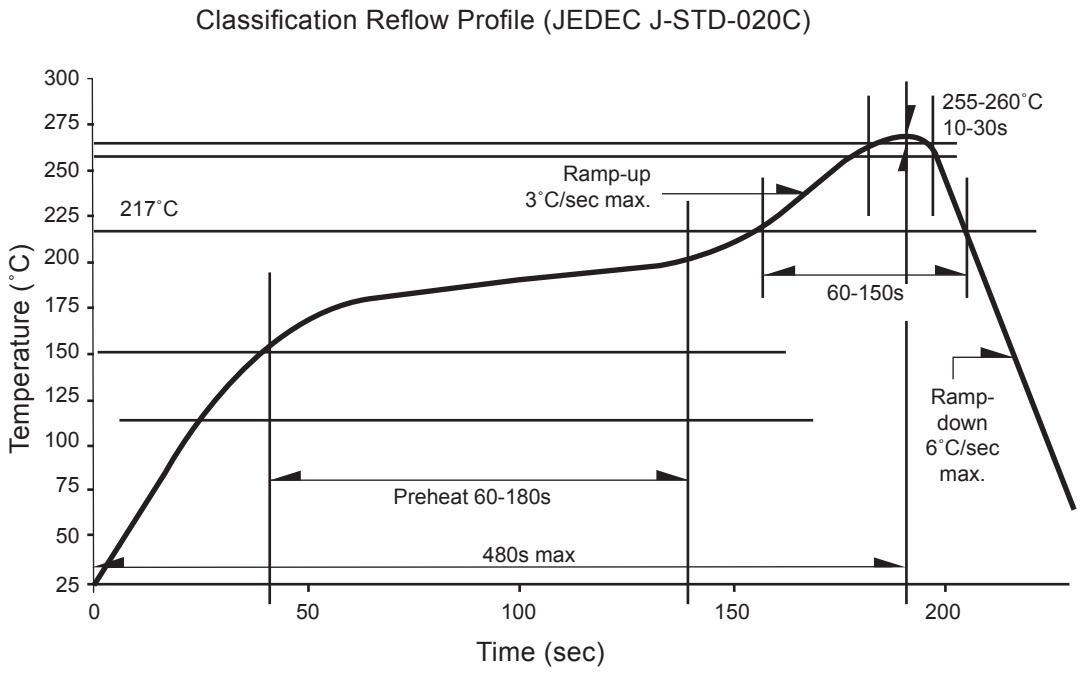
	Average 1pc SPNova	1 completed bag (2000pcs)
Weight (gram)	**0.188**	**800 ± 10**



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 Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	14 Jan 2013

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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