

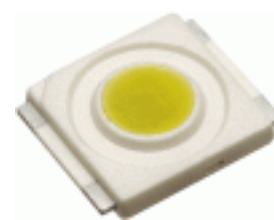
SPNovaLED[™]

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 60 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; $R_{th(jc)} = 18 \text{ K/W}$.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > SPNovaLED are Class 1M LED products. Do not view directly with optical instrument.



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 = 350mA (mcd)
NPW-TSD-ADE-1	InGaN	120	14000.0 - 22400.0
• NPW-TSD-AD			14000.0 - 18000.0
• NPW-TSD-AE			18000.0 - 22400.0

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 Ta=25°C

Part Number	Vf @ If = 350mA	
	Typ. (V)	Max. (V)
NPW-TSD	3.6	4.0

Forward voltages are measure using a current pulse of 1 ms and with an accuracy of ± 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	120	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C

Correlated Color Temperature (CCT)

Color Bin	Minimum CCT (K)	Maximum CCT (K)
Y3	4500	5000
Y2	5000	5500
Y1	5500	6000
X3	6000	7000
X2	7000	8000
X1	8000	10000

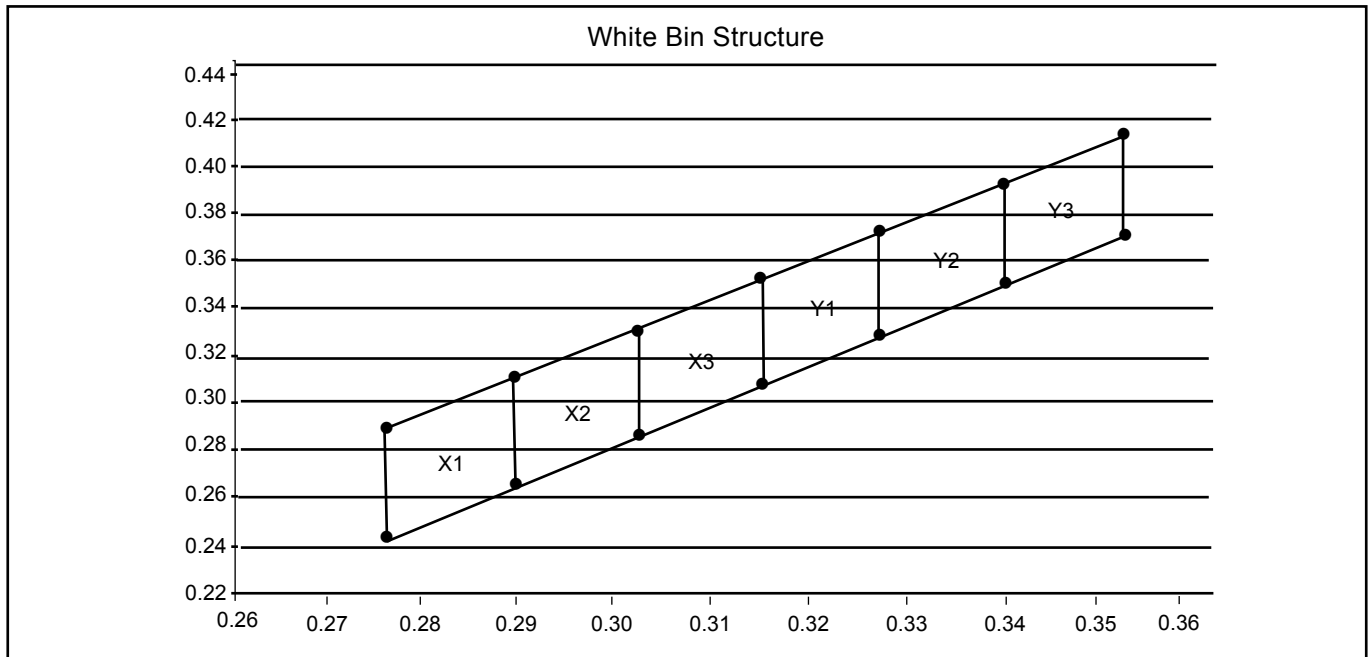
Note: CCT values provided for each of the color bins are an approximation based on correlation.

Correlation Between Luminous Intensity And Luminous Flux

IV Bin	Luminous Intensity (mcd)		Luminous Flux (lm)	
	Min	Max	Min	Max
AD	14000	18000	40.0	55.0
AE	18000	22400	55.0	70.0

Note: Data provided above is an approximation base on statistical correlation.

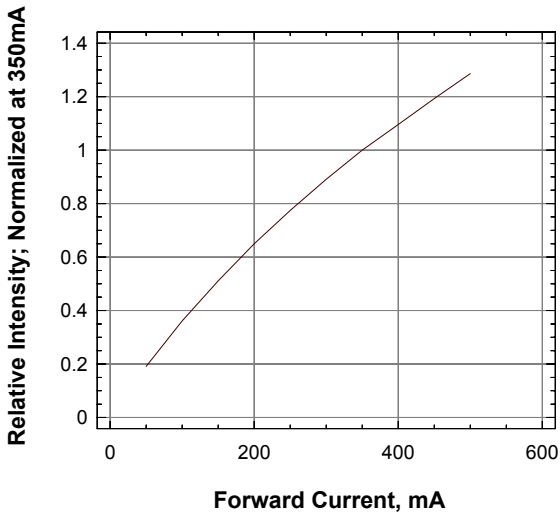
Color Bin



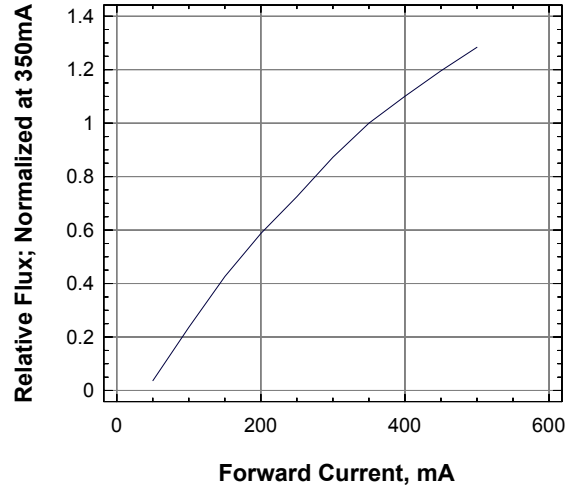
Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
X1	Cx	0.278	0.290	0.290	0.278
	Cy	0.243	0.265	0.310	0.288
X2	Cx	0.290	0.303	0.303	0.290
	Cy	0.265	0.286	0.331	0.310
X3	Cx	0.303	0.315	0.315	0.303
	Cy	0.286	0.308	0.353	0.331
Y1	Cx	0.315	0.328	0.328	0.315
	Cy	0.308	0.330	0.375	0.353
Y2	Cx	0.328	0.340	0.340	0.328
	Cy	0.330	0.351	0.396	0.375
Y3	Cx	0.340	0.353	0.353	0.340
	Cy	0.351	0.373	0.418	0.396

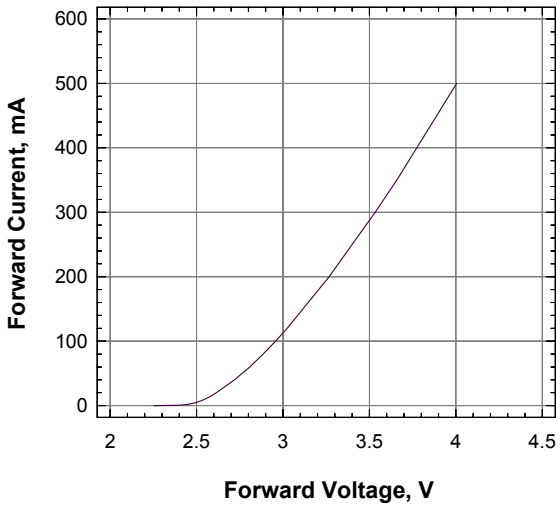
Relative Intensity Vs Forward Current



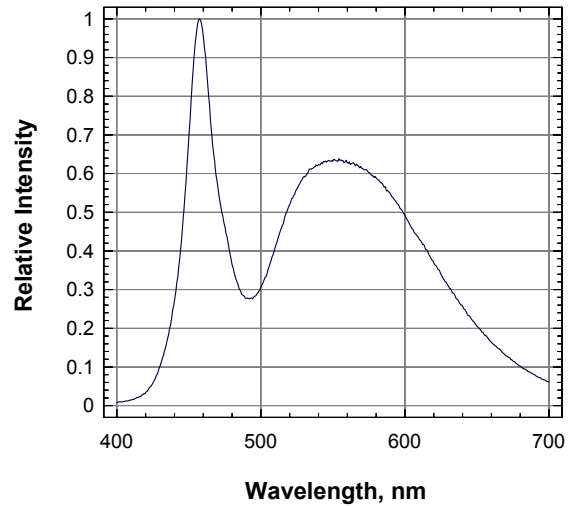
Relative Flux Vs Forward Current



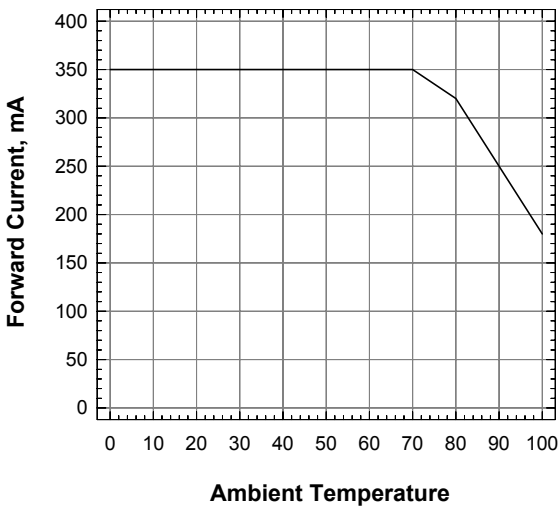
Forward Current Vs Forward Voltage



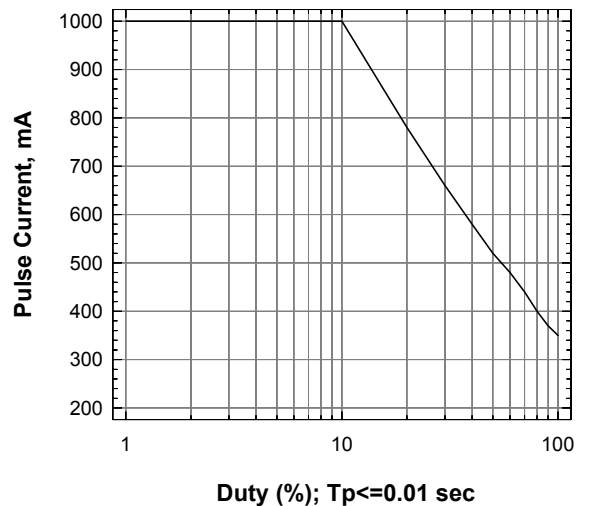
Relative Spectral Emission



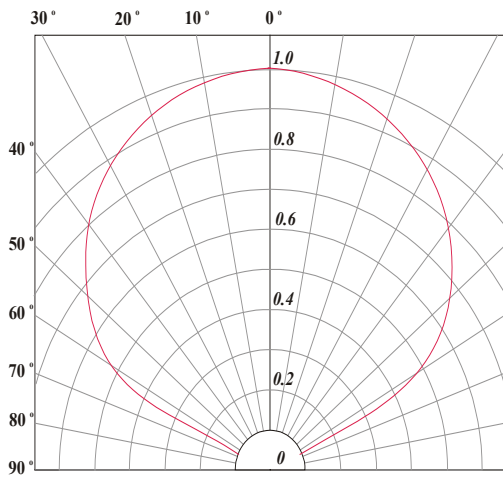
Forward Current Vs Ambient Temperature (Rja=40K/W)



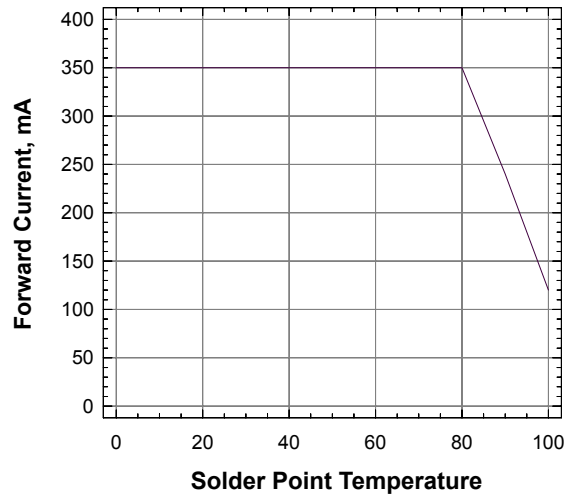
Maximum Permissible Pulse Current, Ta=25 °C



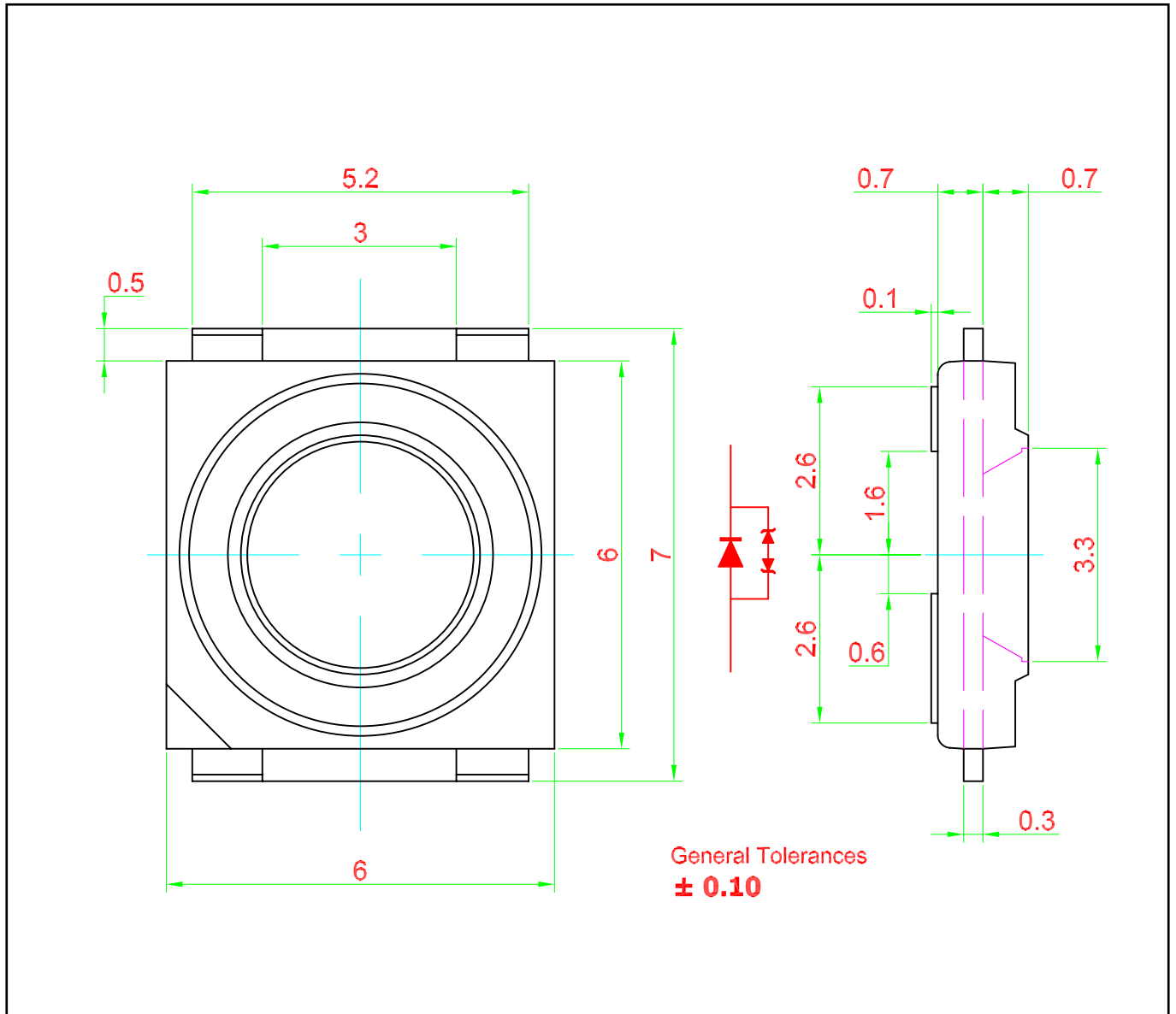
Radiation Pattern



Forward Current Vs Solder Point Temperature

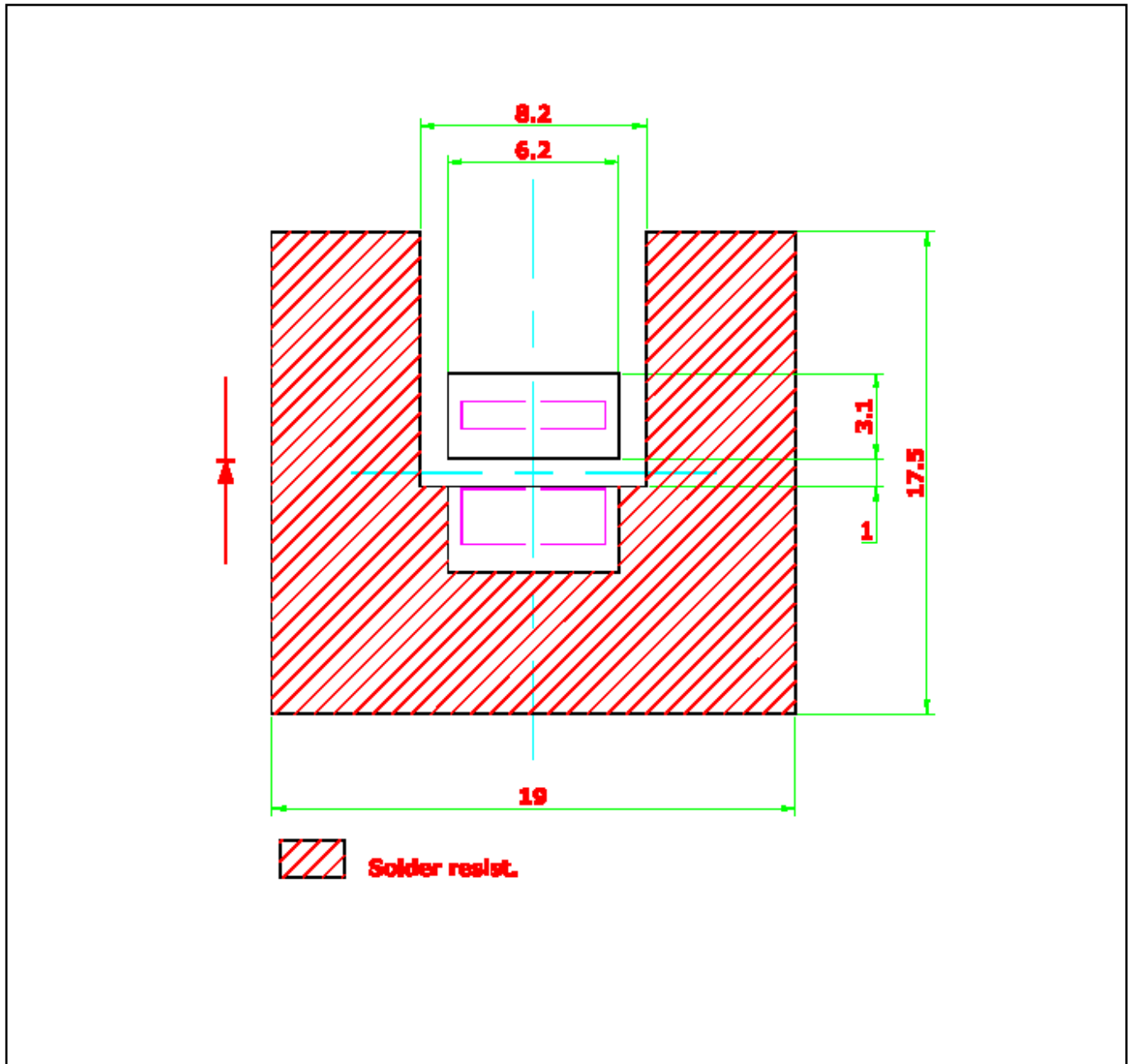


SPNovaLED™ • InGaN White High Lumens : 350 mA Package Outlines



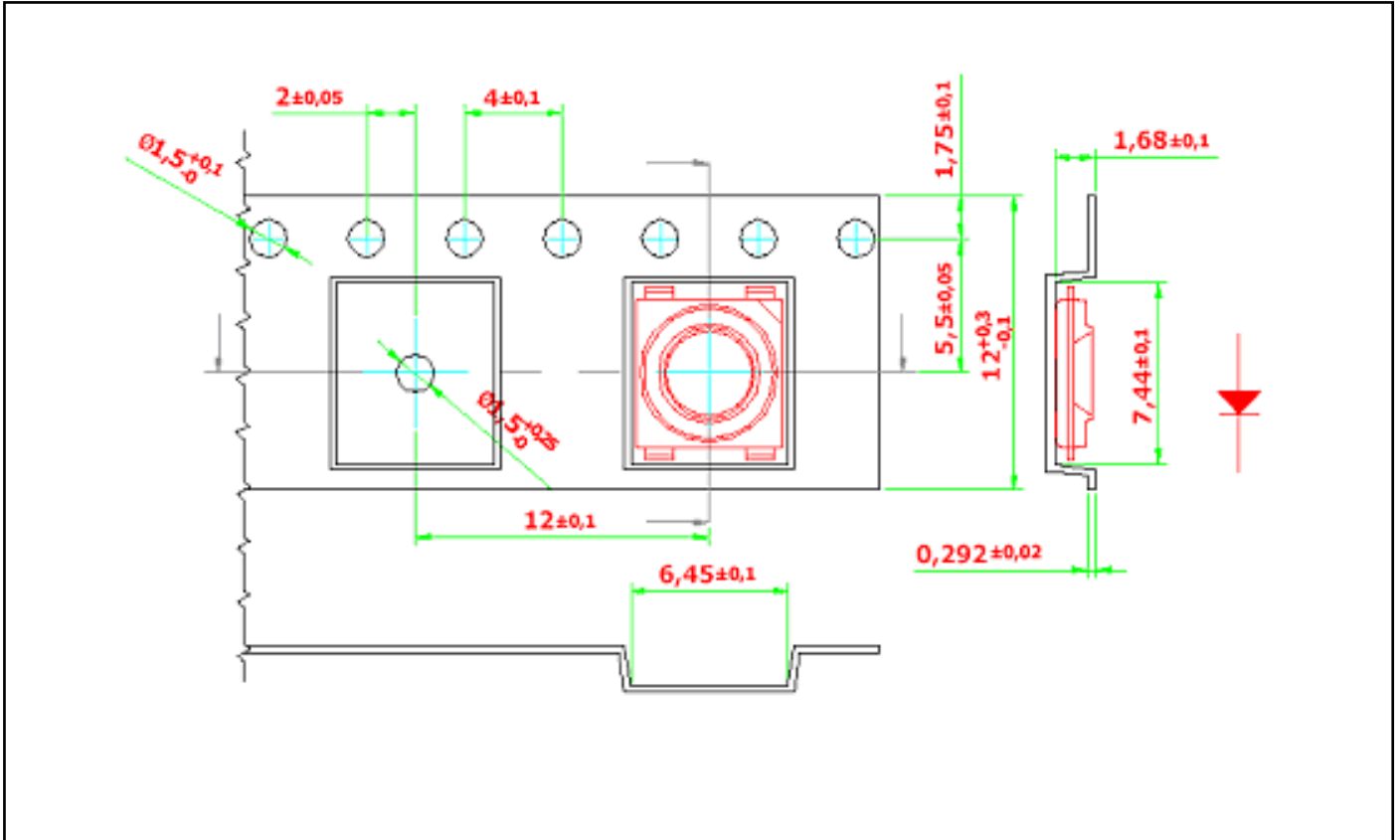
Solder Pad Design

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

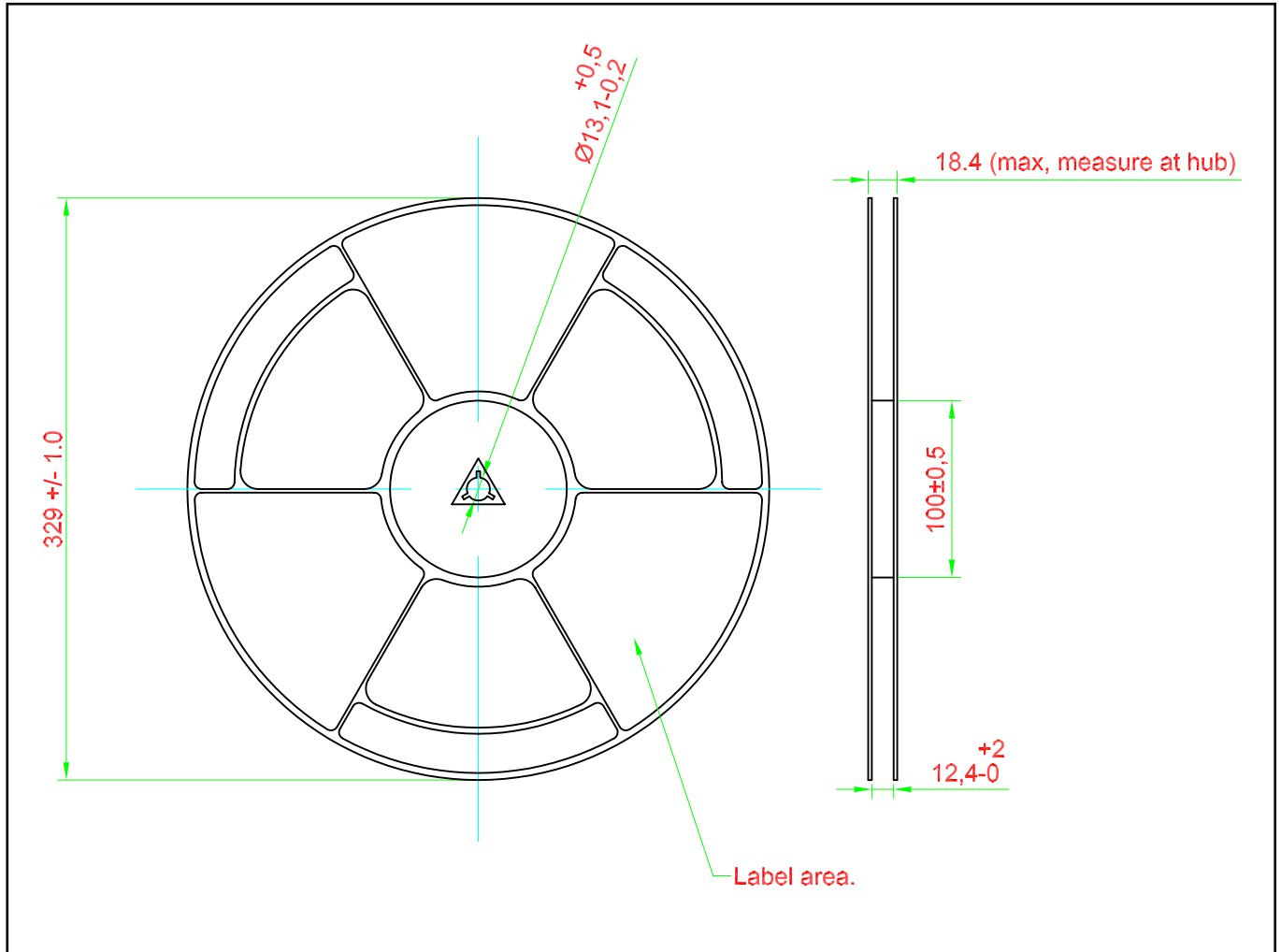


Taping and orientation

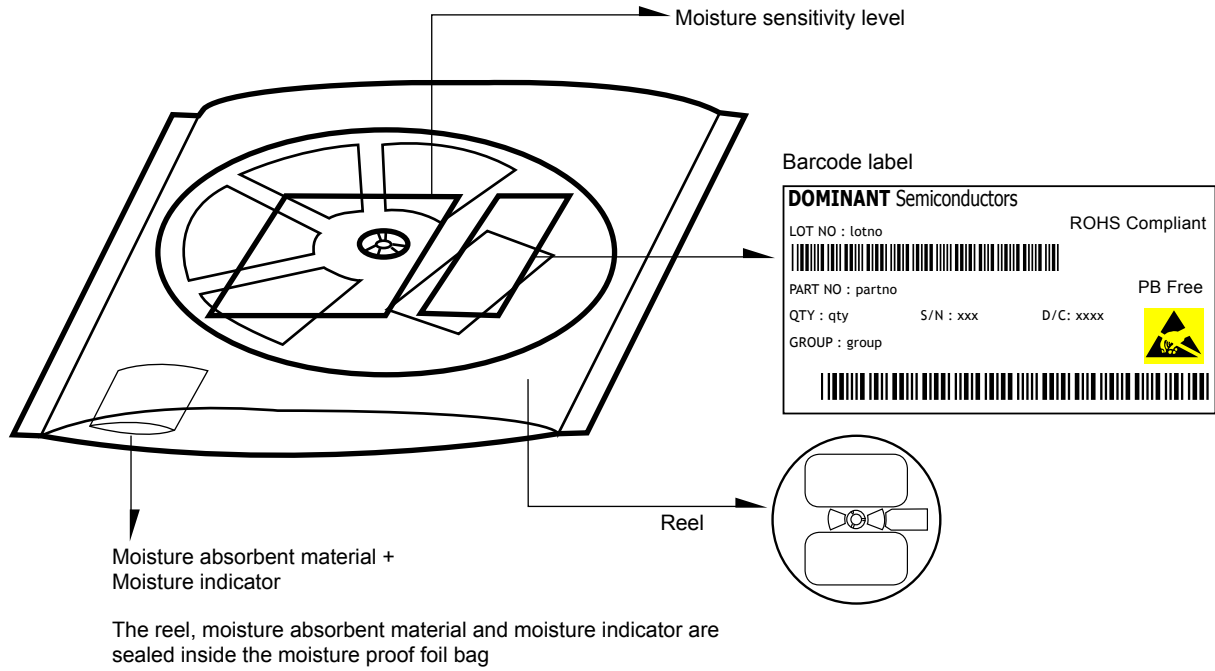
- Reels come in quantity of 2000 units.
- Reel diameter is 330 mm.



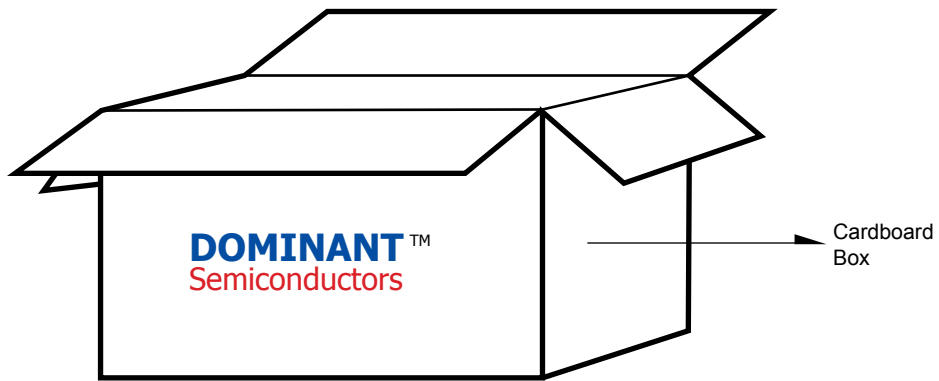
Packaging Specification



Packaging Specification



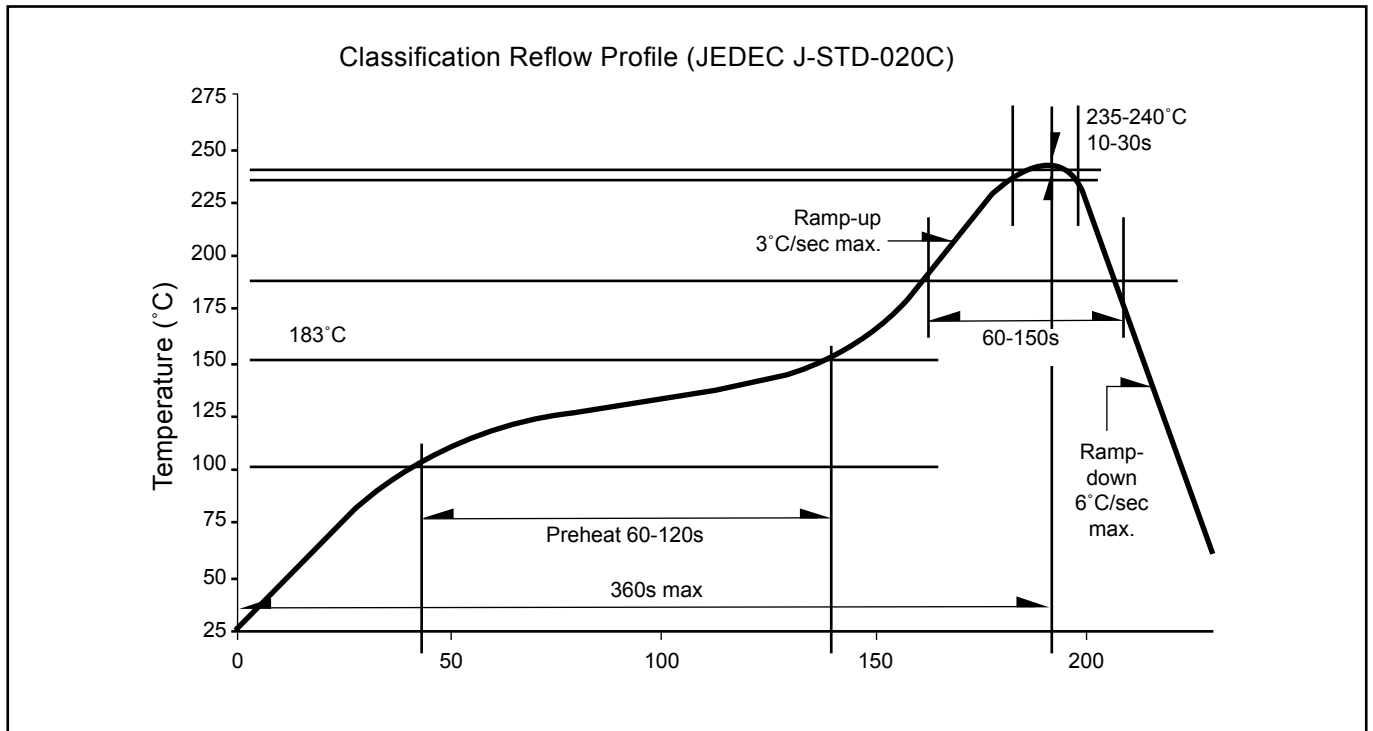
	Average 1pc SPNovaLED	1 completed bag (2000pcs)
Weight (gram)	0.188	800 ± 10



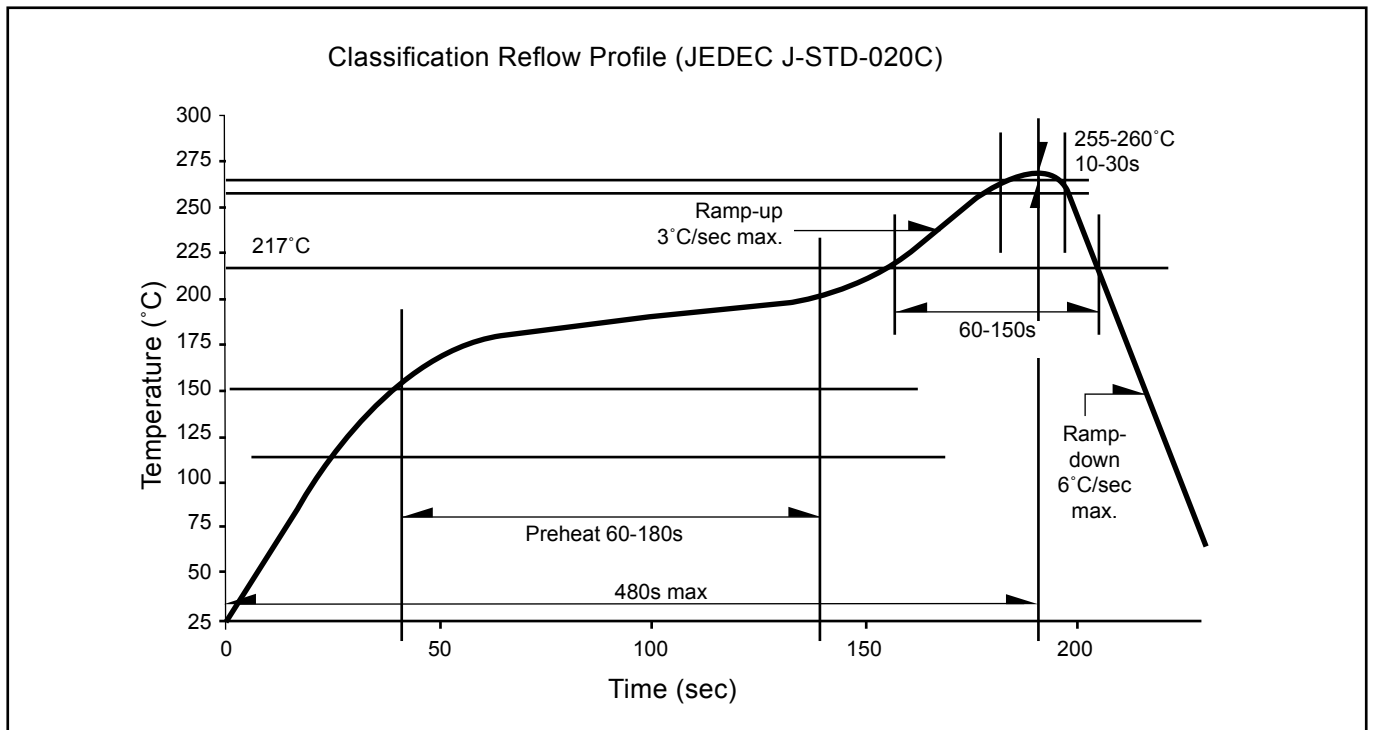
For SPNovaLED™

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

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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