

Primax™

Synonymous with function and performance, enter the Primax, the new era of high intensity illumination in LED. With its high flux output and high luminous intensity, Primax transcends today LED lightings technology and how we perceive it. The small package outline (3.5 x 3.5 x 1.2 mm) and high intensity make it an ideal choice for backlighting, signage, exterior automotive lighting and decorative lighting.



Features:

- > Super high brightness surface mount LED
- > 120° viewing angle.
- > Compact package outline (LxW) of 3.5 x 3.5 mm.
- > Ultra low height profile - 1.2mm.
- > Low thermal resistance.
- > 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 @ IF = 150mA (lm)			Intensity @ IF = 150mA (cd)
			Min.	Typ.	Max.	Typ.
● NAB-FSG-HJ-1	Blue	120	4.9	6.0	8.2	2.2
NAB-FSG-JK-1	Blue	120	6.3	8.2	10.7	3.0
NAT-FSG-NP-1	True Green	120	18.1	22.0	30.6	8.1

● Not for new design

NOTE

1. Luminous flux is measured with an accuracy of $\pm 11\%$.

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	Vf @ If = 150 mA		
	Min. (V)	Typ. (V)	Max. (V)
NAB-FSG	3.0	3.4	3.9
NAT-FSG	3.0	3.4	3.9

Forward Voltages are tested using a current pulse of 1 ms and has an accuracy of ± 0.1 V.

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	180	mA
Peak pulse current (tp<=10ms, Duty cycle=0.10)	350	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

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 150\text{mA}$; $0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	$TC_{\lambda_{\text{dom}}}$ (typ)	NAB-FSG NAT-FSG	0.04 0.03	nm / K
Temperature coefficient of V_F (typ) $I_F = 150\text{mA}$; $0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	TC_V	NAB-FSG NAT-FSG	-2.3 -1.6	mV / K
Temperature coefficient of I_V (typ) $I_F = 150\text{mA}$; $0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	TC_{I_V}	NAB-FSG NAT-FSG	0.02 -0.08	% / K

Wavelength Grouping at $T_j=25^\circ\text{C}$

Color	Group	Wavelength distribution (nm)
NAT; True Green	Full	520 - 535
	A	520 - 525
	B	525 - 530
	C	530 - 535
NAB; Blue	Full	460 - 470
	A	460 - 465
	B	465 - 470

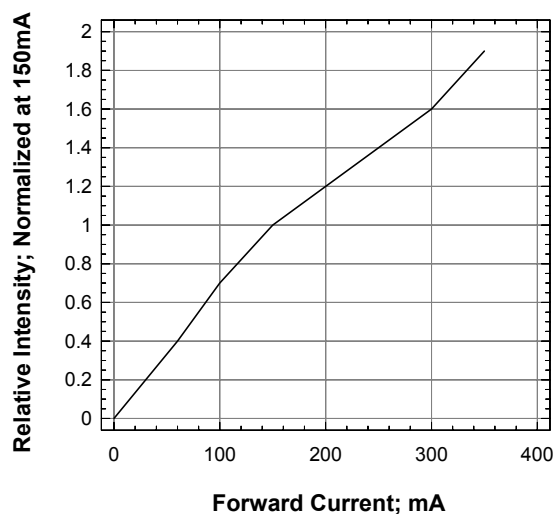
Dominant wavelength is measured with an accuracy of ± 1 nm at a drive current of 150mA

Luminous Flux at $T_j=25^\circ\text{C}$

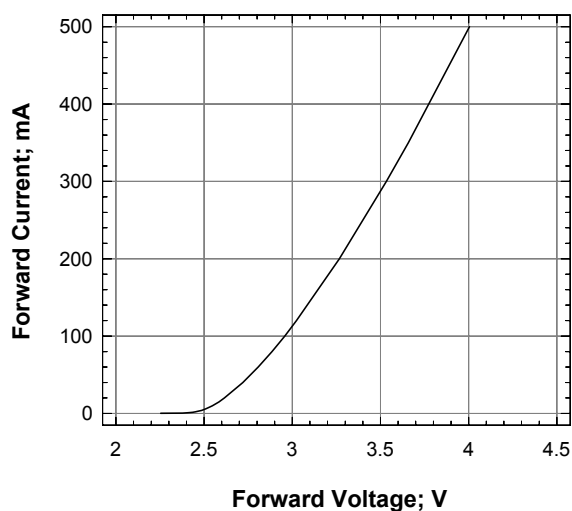
Brightness Group	Luminous Flux (lm)
H2	4.90...5.50
H3	5.50...6.30
J2	6.30...7.15
J3	7.15...8.20
K2	8.20...9.35
K3	9.35...10.70
N2	18.10...20.60
N3	20.60...23.50
P2	23.50...26.80
P3	26.80...30.60

Luminous flux is measured with an accuracy of $\pm 11\%$.

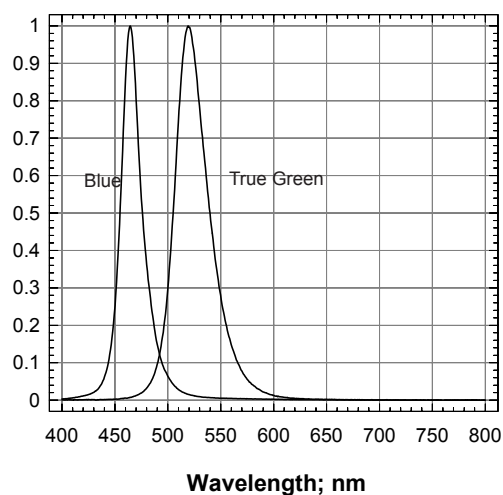
Relative Intensity Vs Forward Current



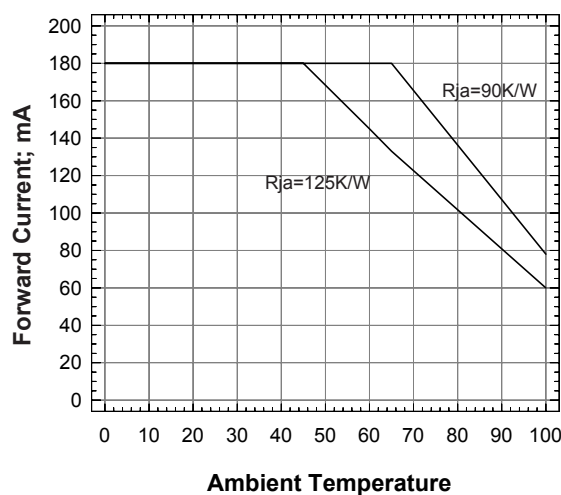
Forward Current vs Forward Voltage



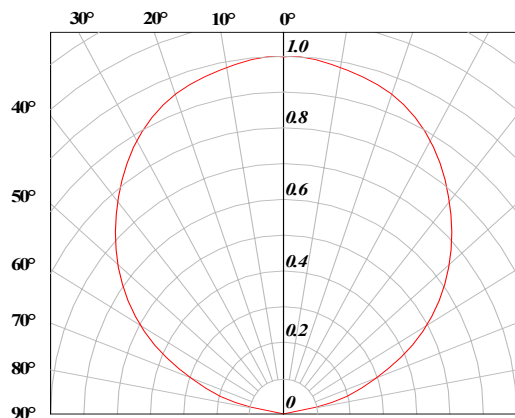
Relative Intensity Vs Wavelength



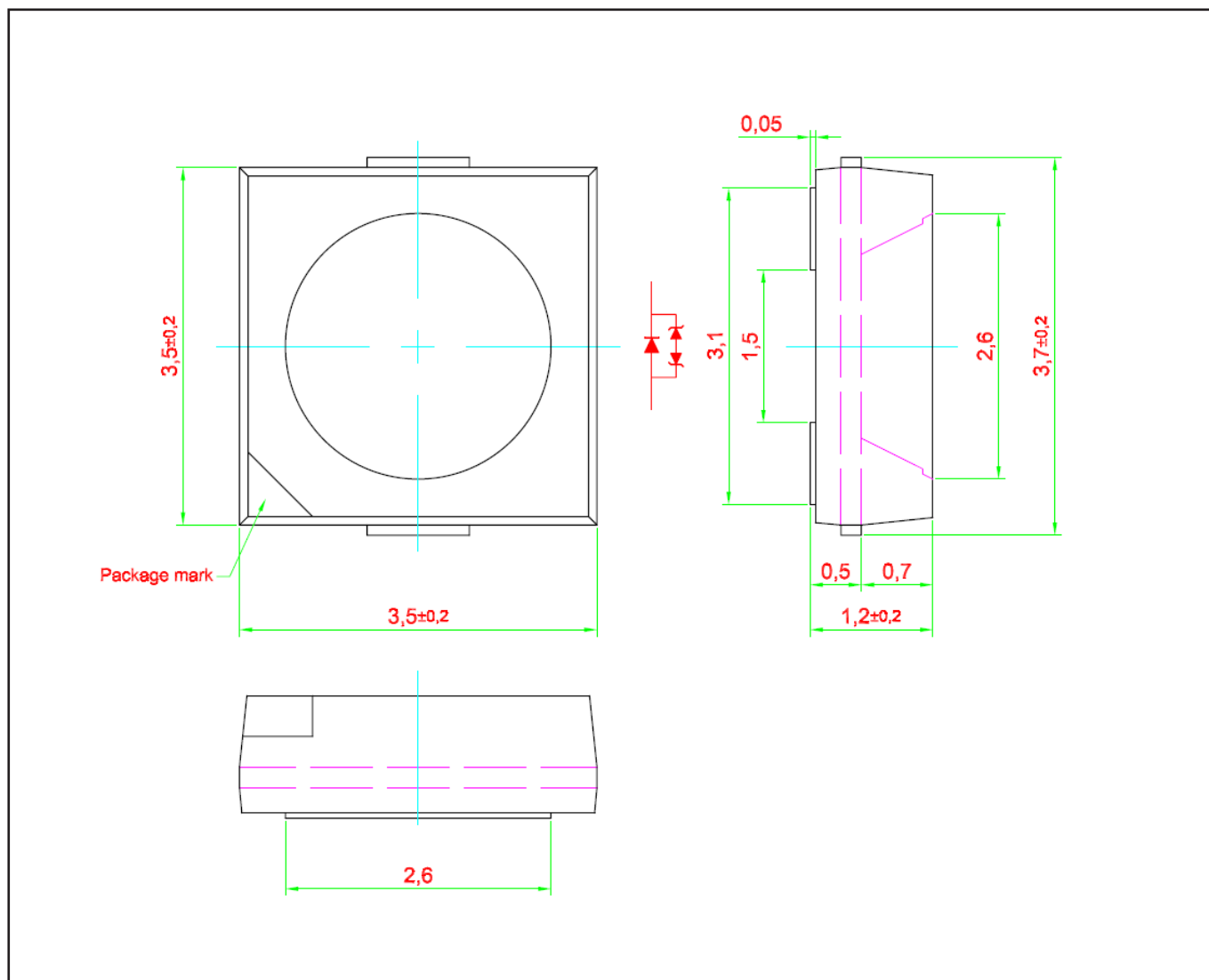
Forward Current Vs Ambient Temperature



Radiation Pattern



Primax™ • 150 InGaN : NAX-FSG Package Outlines

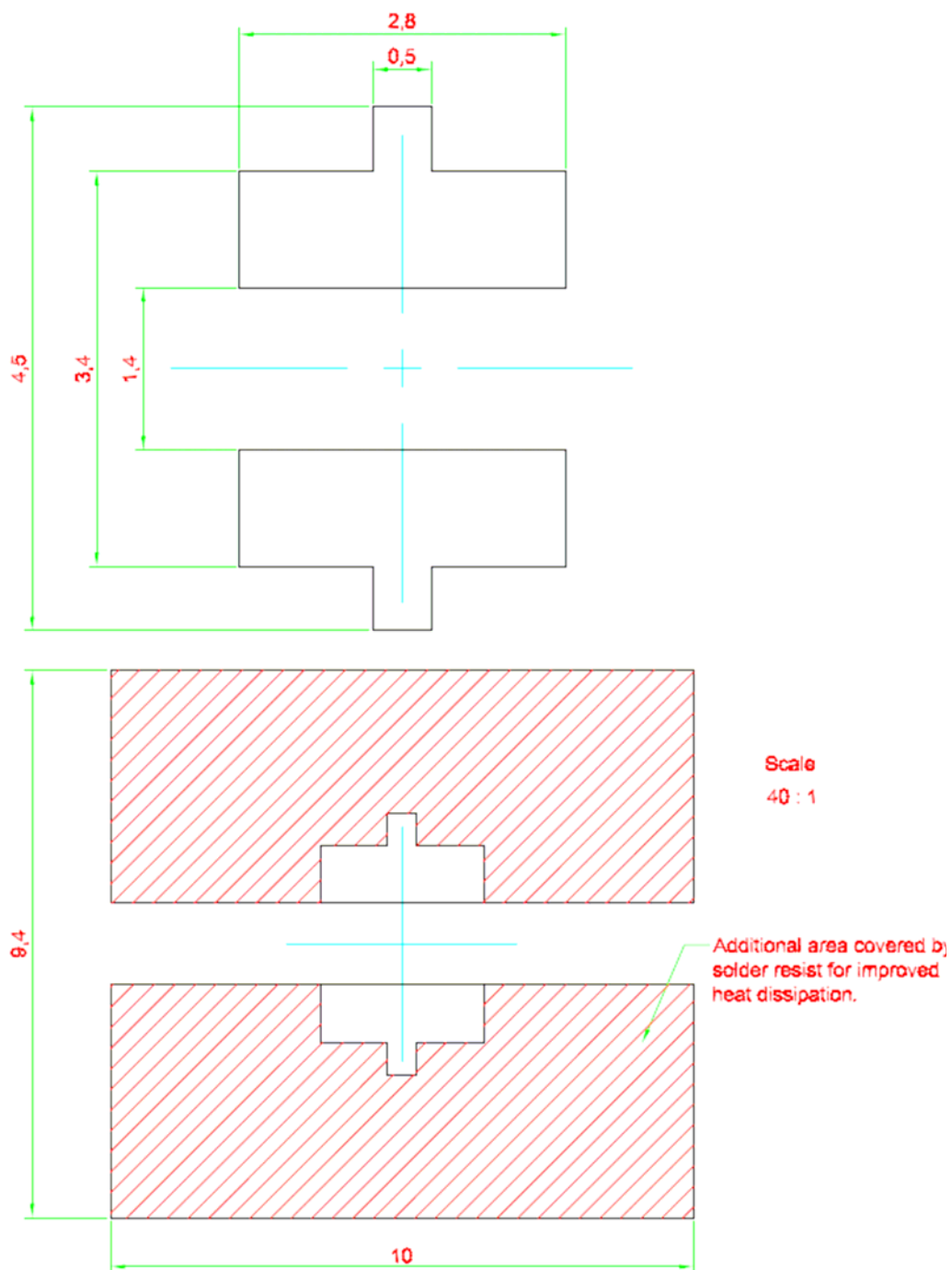


Material

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

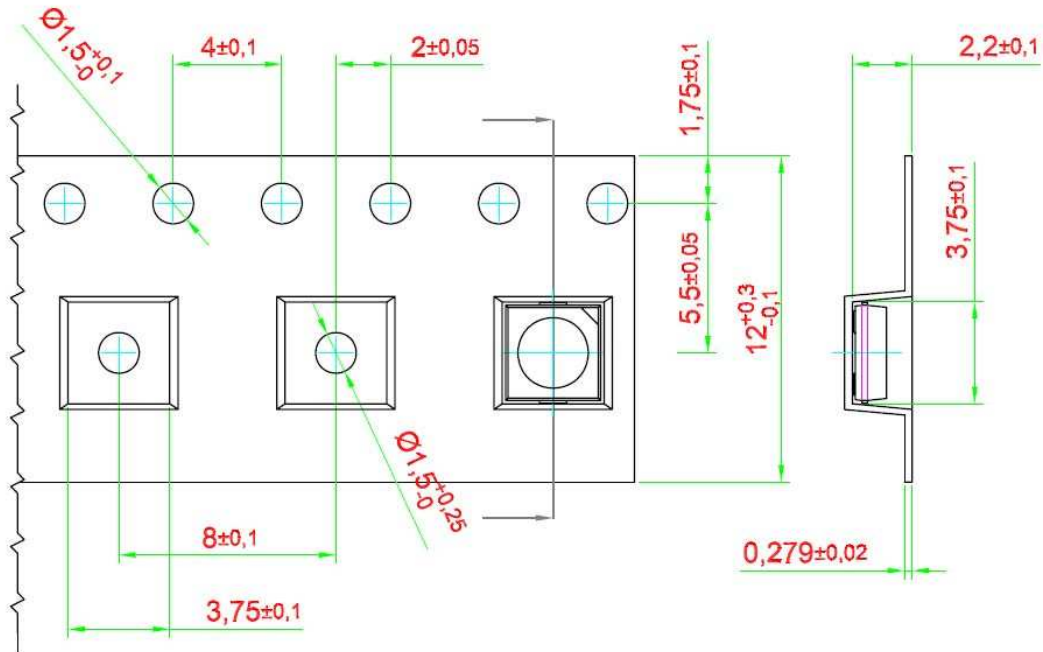
Note: This product is Pb free

Recommended Solder Pad

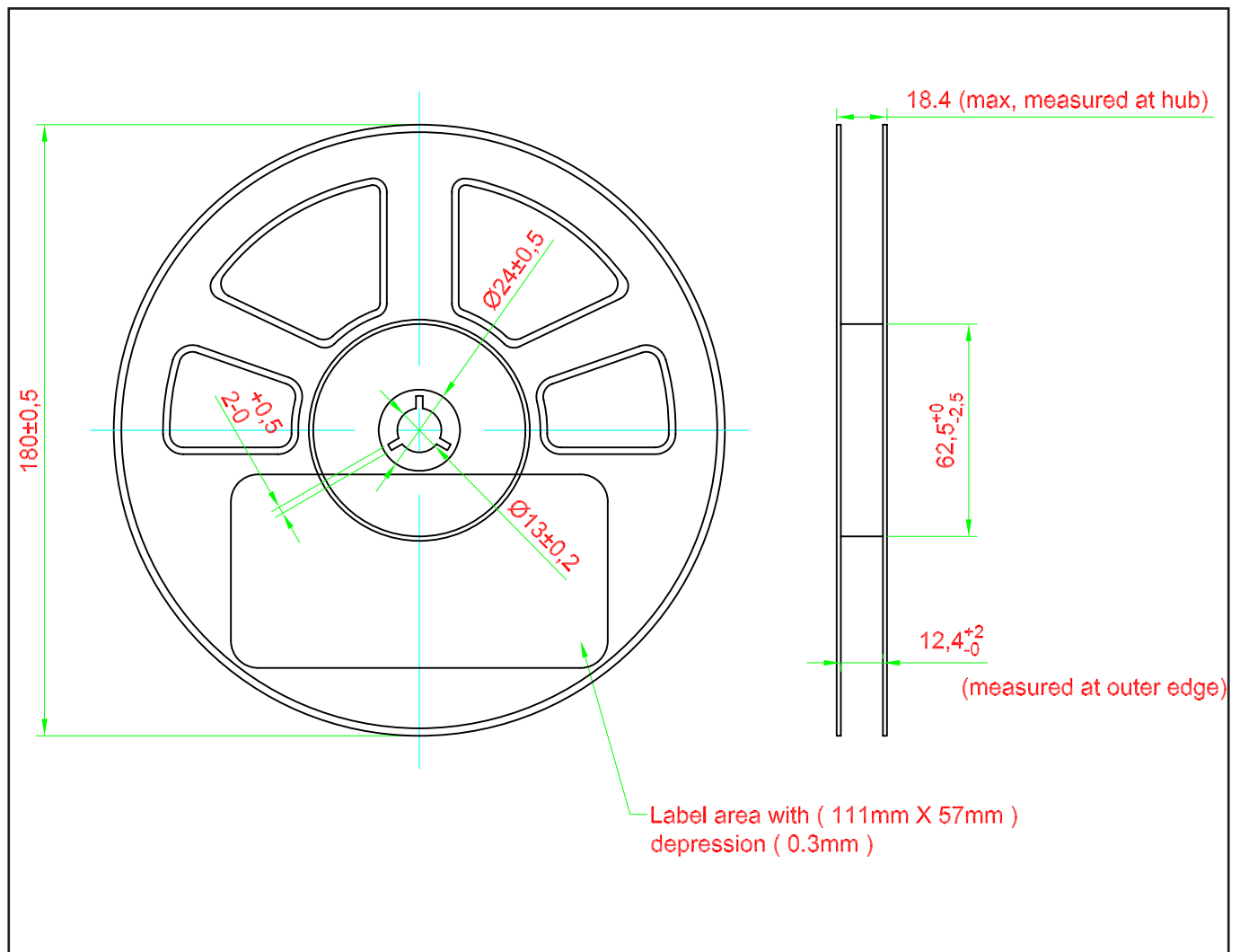


Taping and orientation

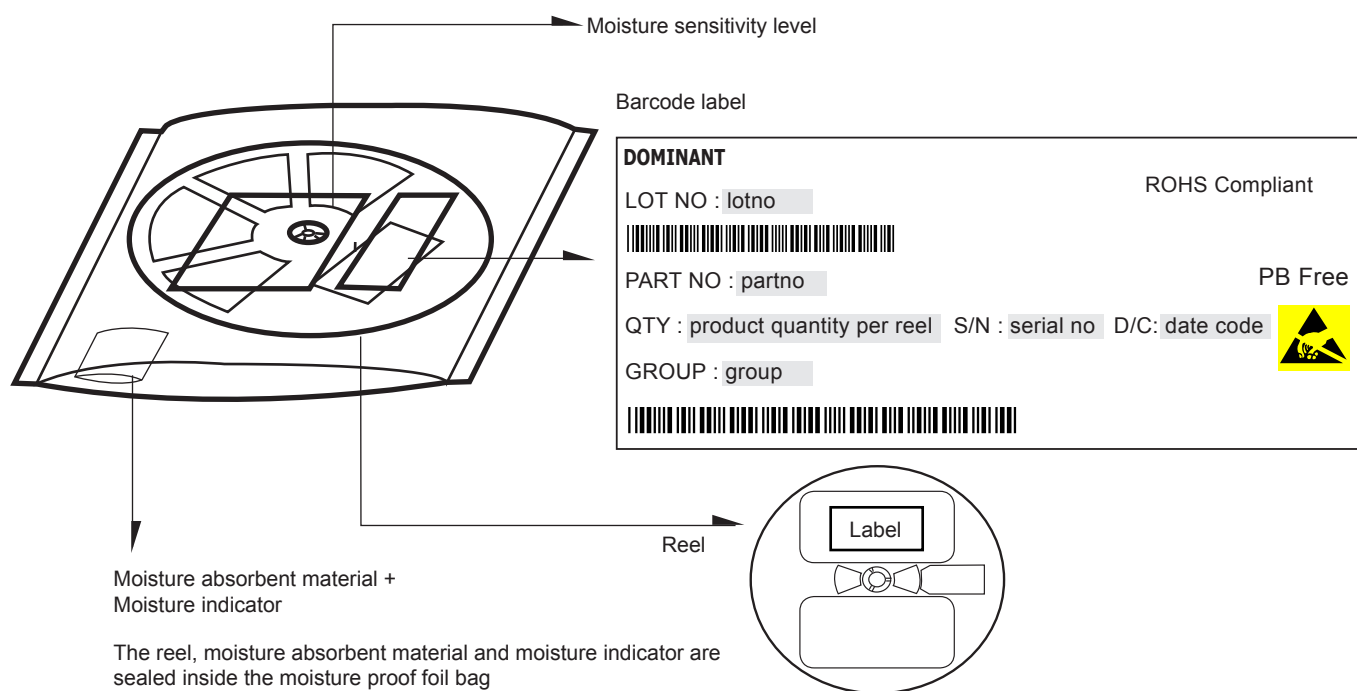
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



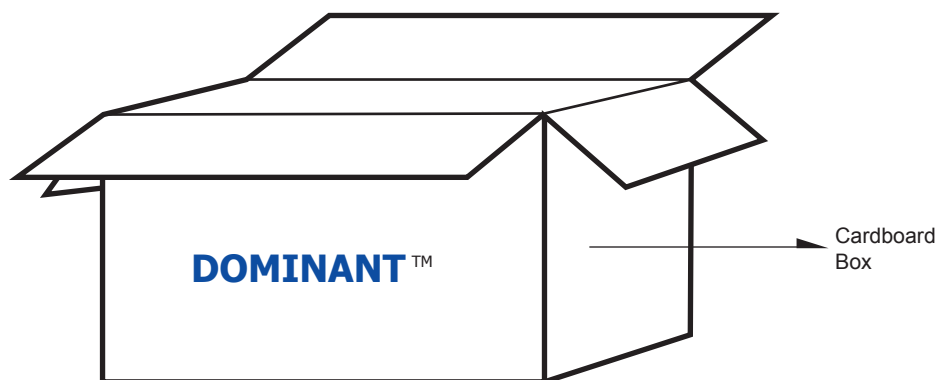
Packaging Specification



Packaging Specification



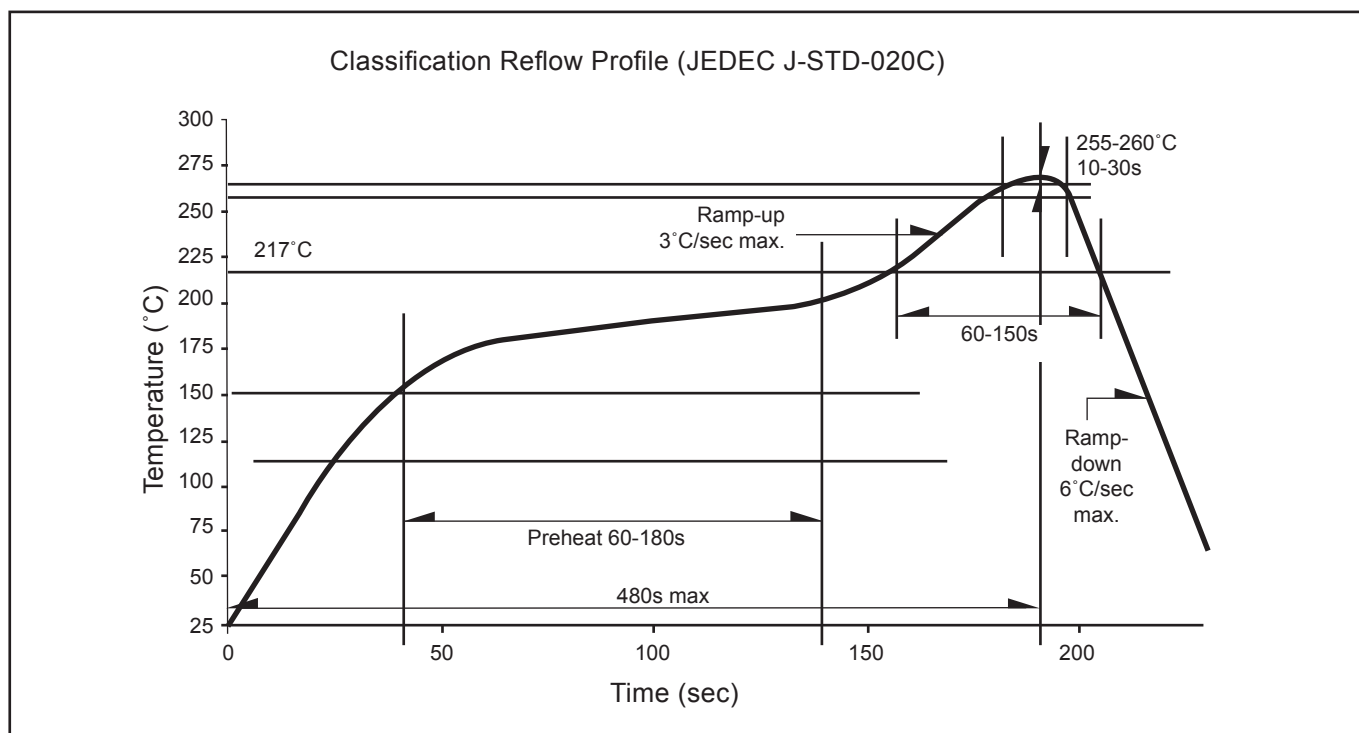
	Average 1pc Primax	1 completed bag (1000pcs)
Weight (gram)	0.041	160 ± 10



For Primax™

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box	Quantity / Box (pcs)
Small	300 x 250 x 250	0.58	15 reels MAX	15,000 MAX
Large	416 x 516 x 476	1.74	96 reels MAX	192,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	24 Jun 2011
2	Not for new design: NAB-FSG-HJ-1 Add new partno: NAB-FSG-JK-1	16 Jul 2012
3	Add Characteristics	30 Aug 2012

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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