

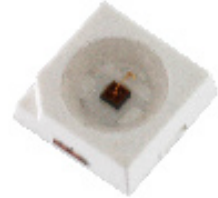
Primax™

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.
- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Automotive: exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL).



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 140mA (mcd)		
			Min.	Typ.	Max.
NAA-PHG-Z1AB-1	Amber	120	4500.0	7500.0	11250.0
NAY-PHG-Y2AA-1	Yellow	120	3550.0	6000.0	9000.0

NOTE

1. Luminous intensity is measured with an accuracy of ± 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 = 140 mA			Vr @ Ir = 10 uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
NAX-PHG	2.05	2.20	2.65	12

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	200	mA
Peak pulse current (tp<=10ms, Duty cycle=0.10)	1000	mA
Reverse Voltage	12	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +115	°C
Storage temperature	-40 ... +125	°C
Thermal resistance		
- Junction / ambient, Rth JA	100	K/W
- Junction / solder point, Rth JS	50	K/W
(Mounted on dual-sided FR4 in-house PCB)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 140\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	$TC_{\lambda_{dom}}$ (typ)	NAA-PHG	0.06	nm / K
		NAY-PHG	0.09	
Temperature coefficient of V_F (typ) $I_F = 140\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_V	NAA-PHG	-3.3	mV / K
		NAY-PHG	-4.1	
Temperature coefficient of I_V (typ) $I_F = 140\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{I_V}	NAA-PHG	-0.7	% / K
		NAY-PHG	-0.9	

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

Color	Group	Wavelength distribution (nm)
NAA; Amber	Full	612 - 624
	W	612 - 616
	X	616 - 620
	Y	620 - 624
NAY; Yellow	Full	585 - 594
	X	585 - 588
	Y	588 - 591
	Z	591 - 594

Dominant wavelength is measured with an accuracy of ± 1 nm at a drive current of 140mA

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

Brightness Group	Luminous Intensity $I_f = 140\text{mA}$ (mcd)
Y2	3550.0 ... 4500.0
Z1	4500.0 ... 5600.0
Z2	5600.0 ... 7150.0
AA	7150.0 ... 9000.0
AB	9000.0 ... 11250.0

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

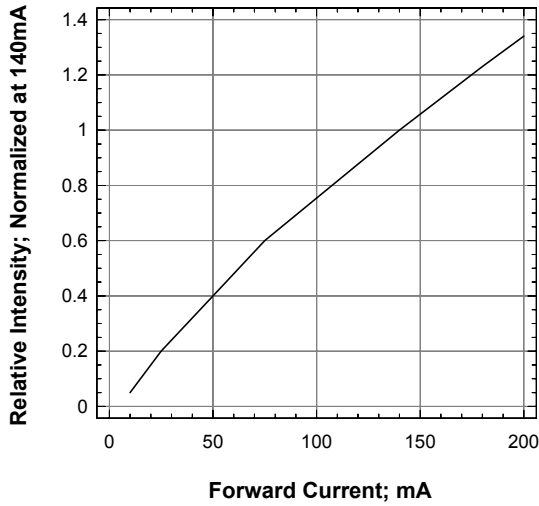
Vf Binning (Optional)

Vf Bin @ 140mA	Forward Voltage (V)
V2	2.05 ... 2.20
V3	2.20 ... 2.35
V4	2.35 ... 2.50
V5	2.50 ... 2.65

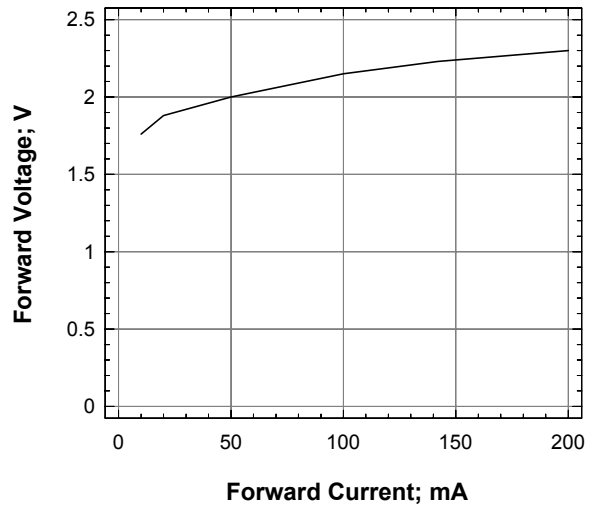
Forward voltage, Vf is measured with an accuracy of ± 0.1 V.

Please consult sales and marketing for special part number to incorporate Vf binning.

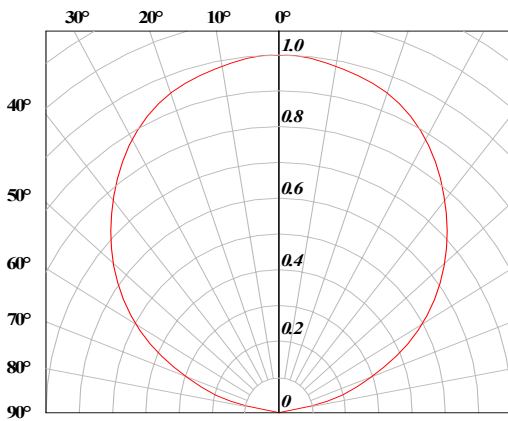
Relative Intensity Vs Forward Current



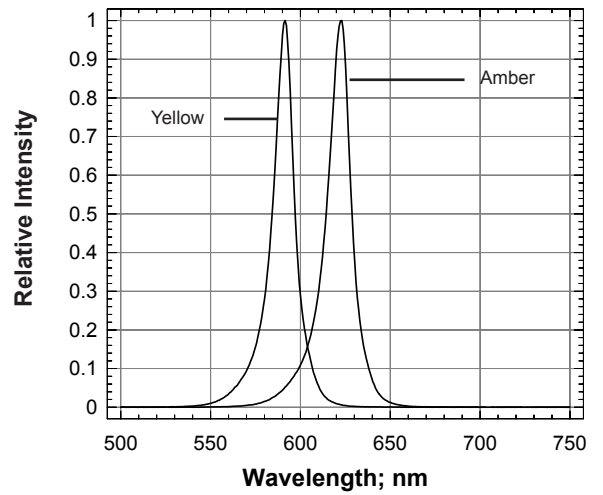
Forward Voltage Vs Forward Current



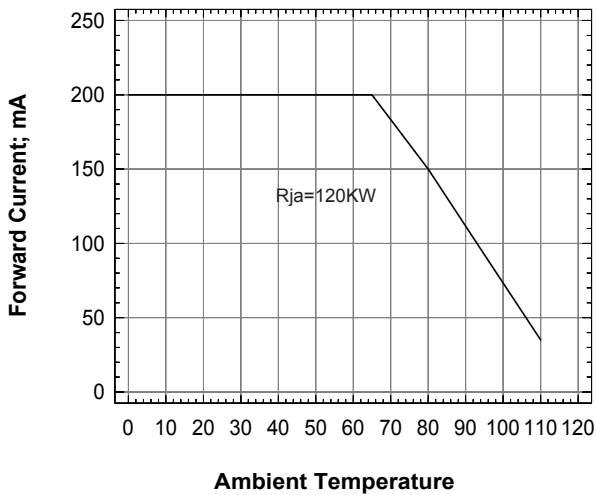
Radiation Pattern



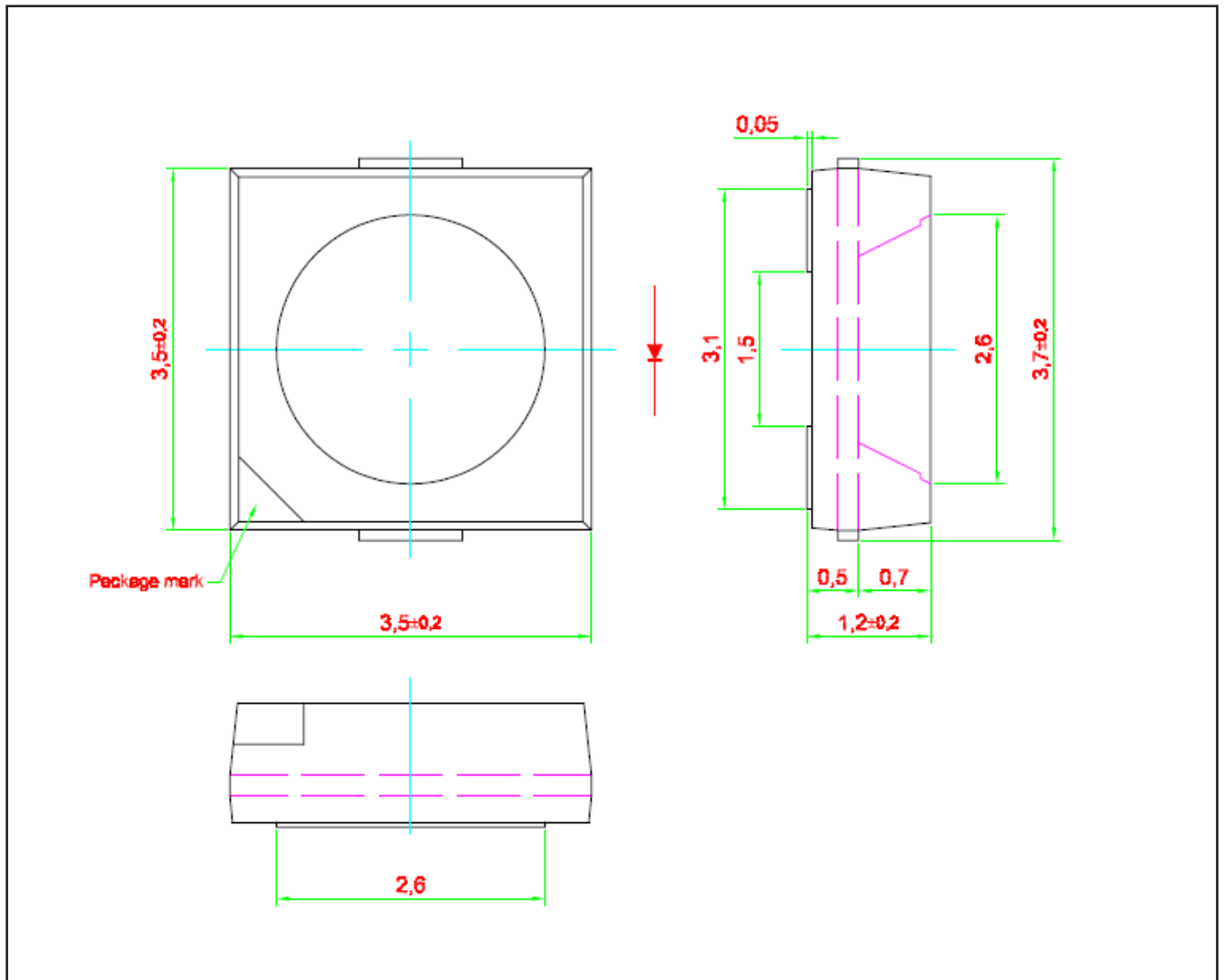
Relative Intensity Vs Wavelength



Maximum Current Vs Ambient Temperature



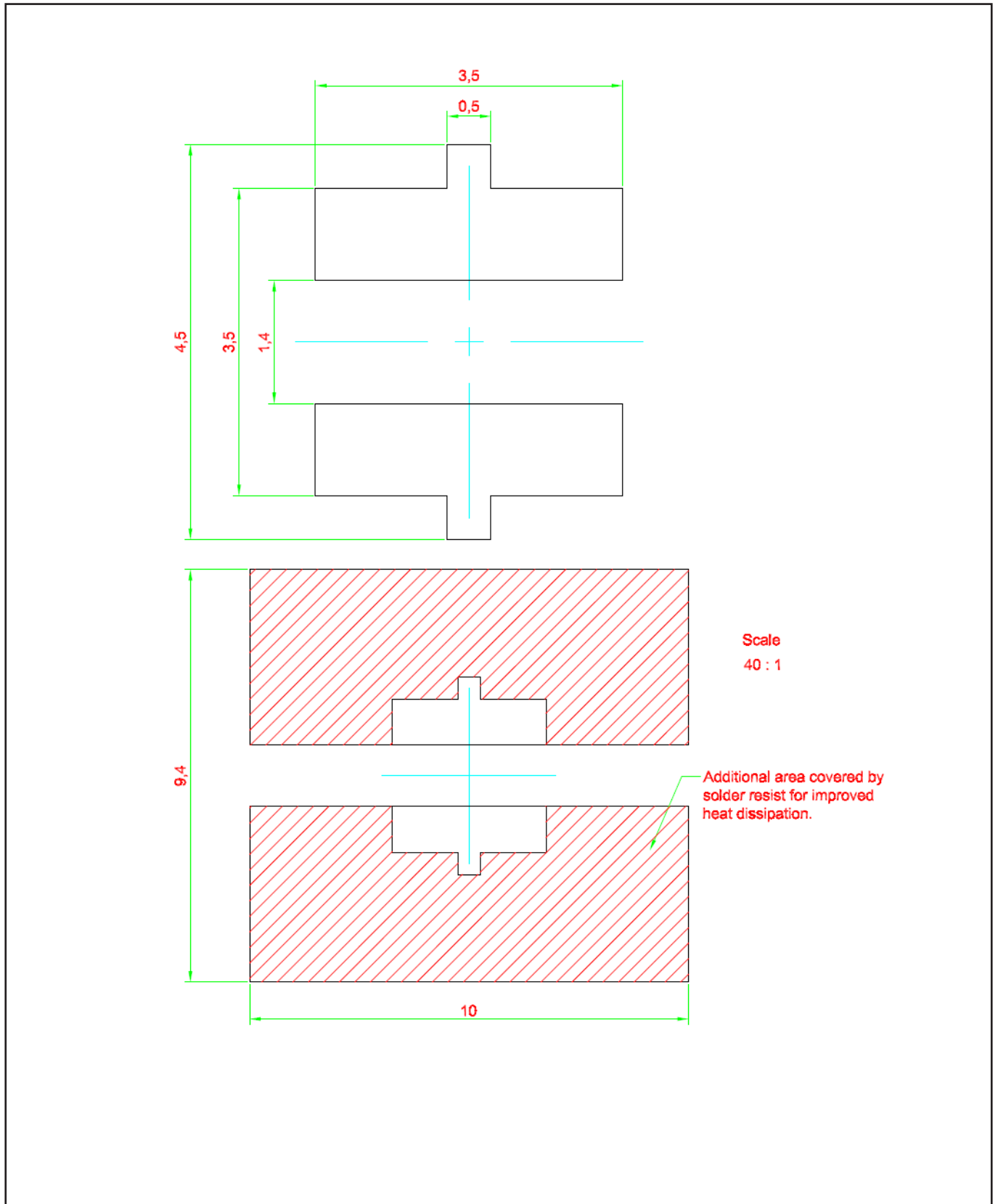
Primax™ • AllnGaP: NAX-PHG Package Outlines



Material

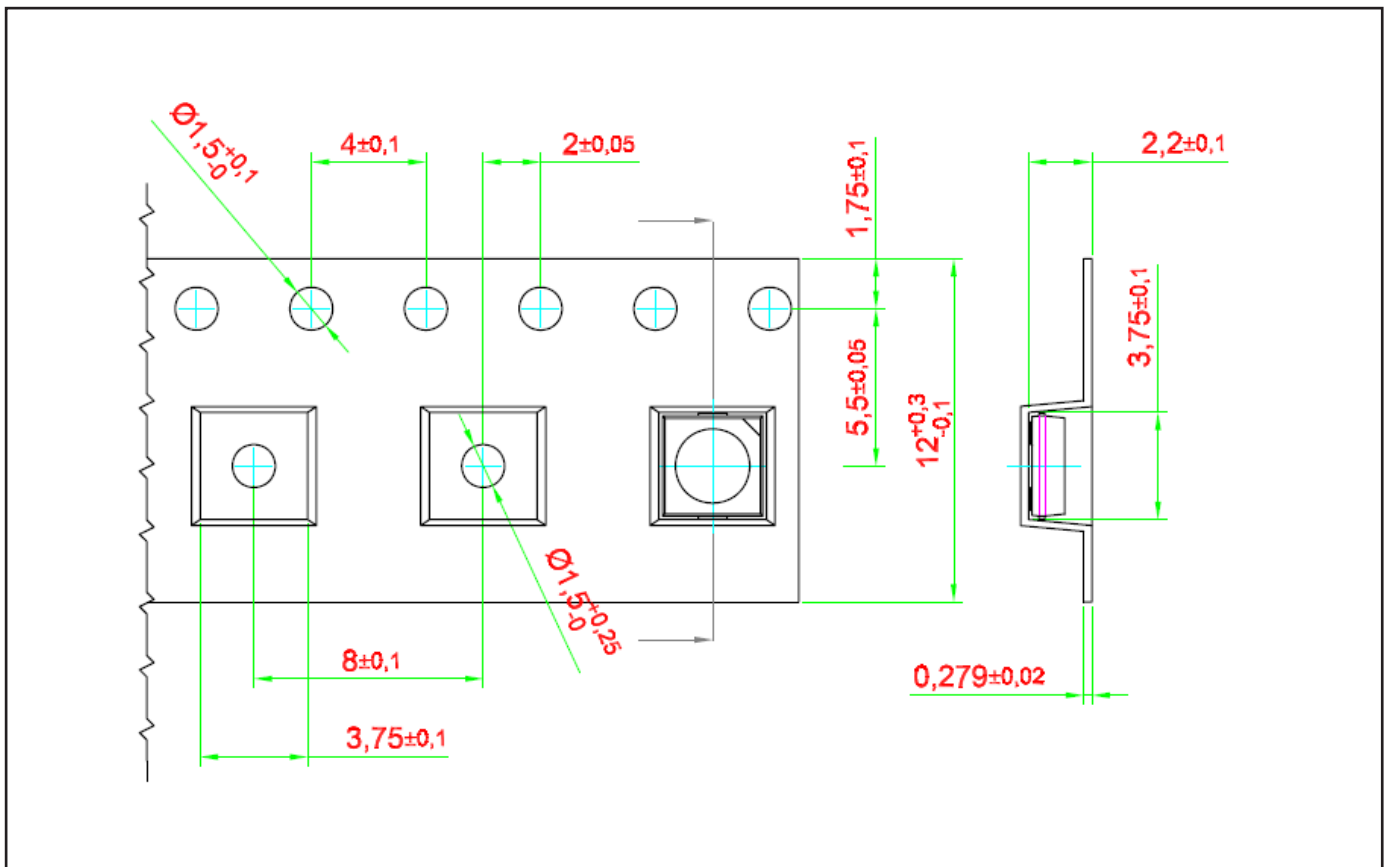
Material	
Lead-frame	Cu Alloy With Au Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Au Plating

Recommended Solder Pad

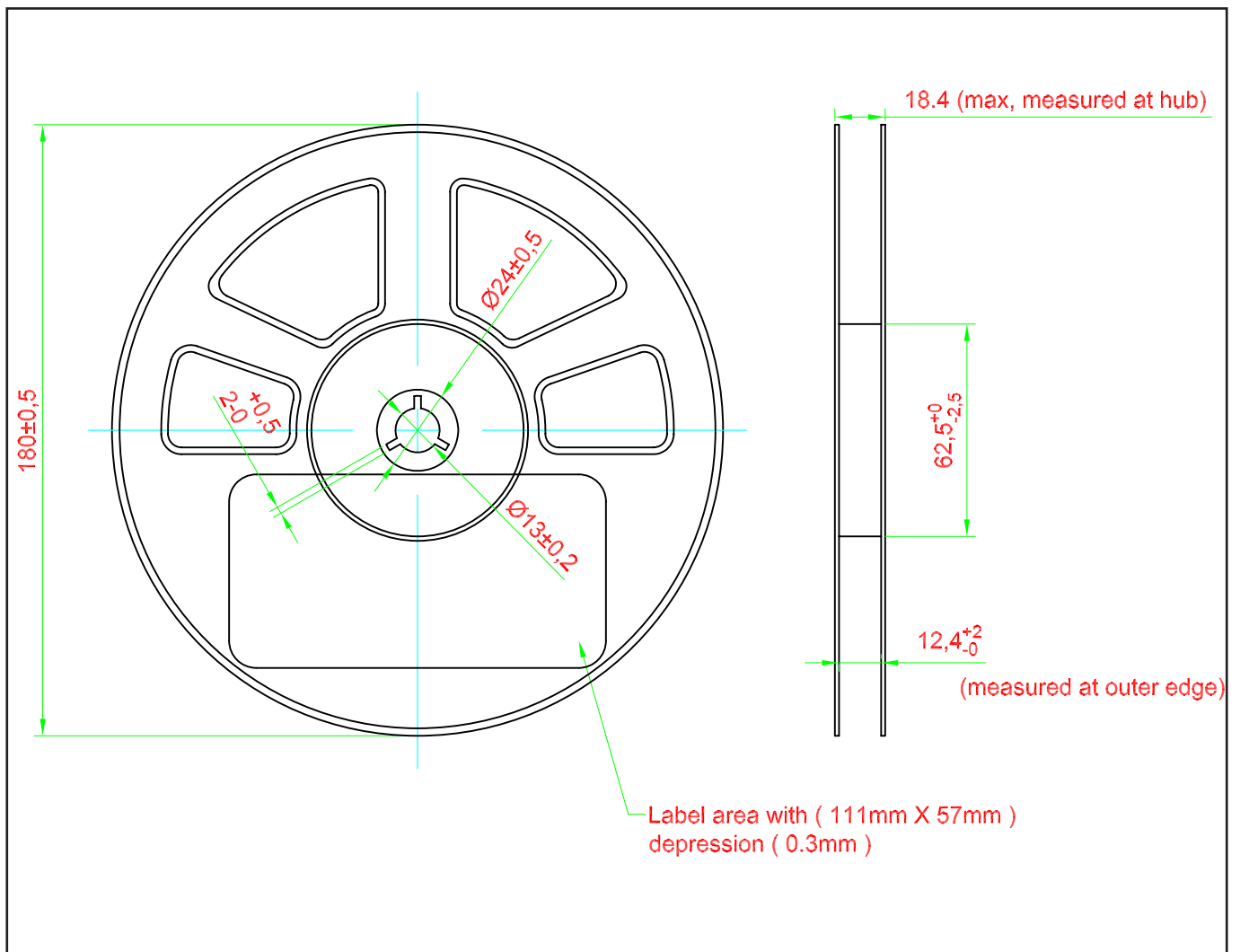


Taping and orientation

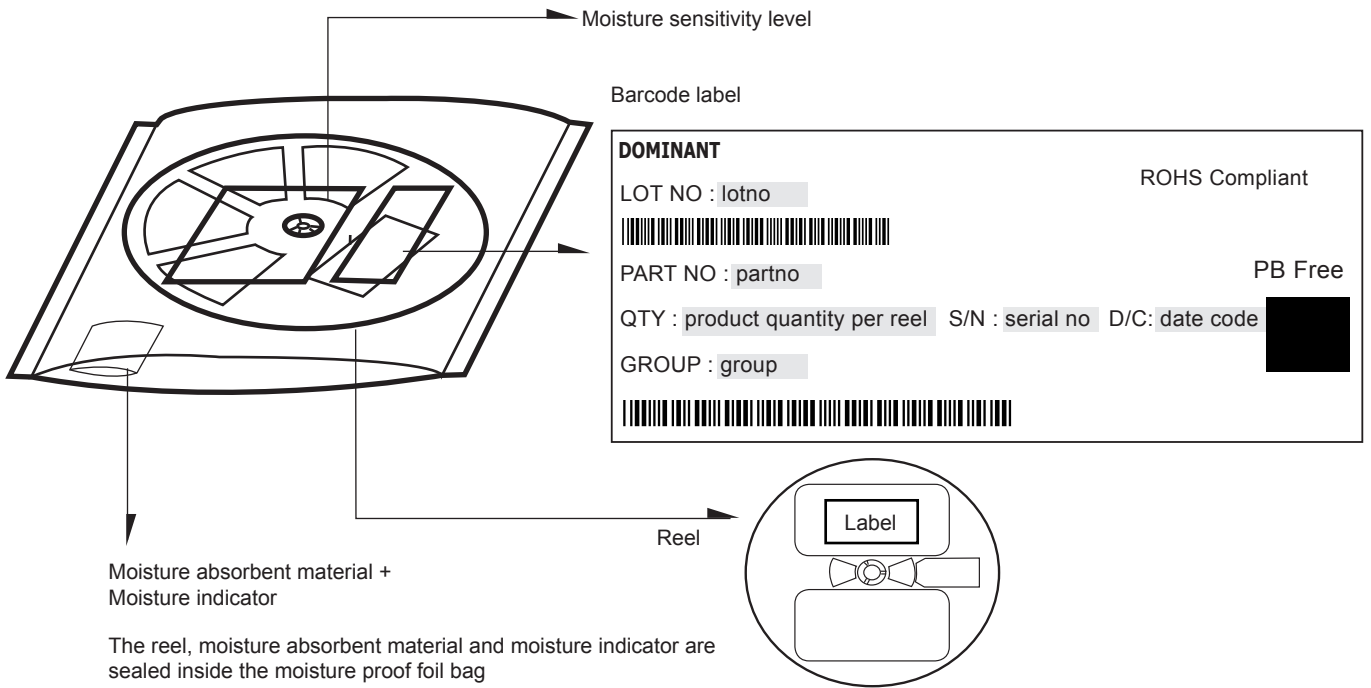
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



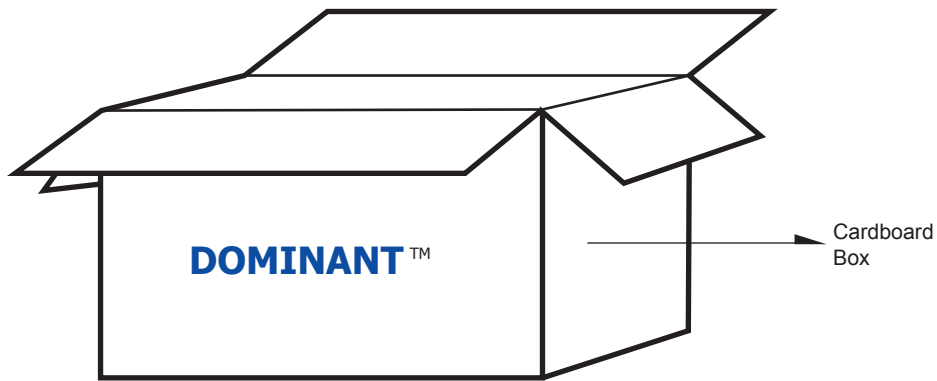
Packaging Specification



Packaging Specification



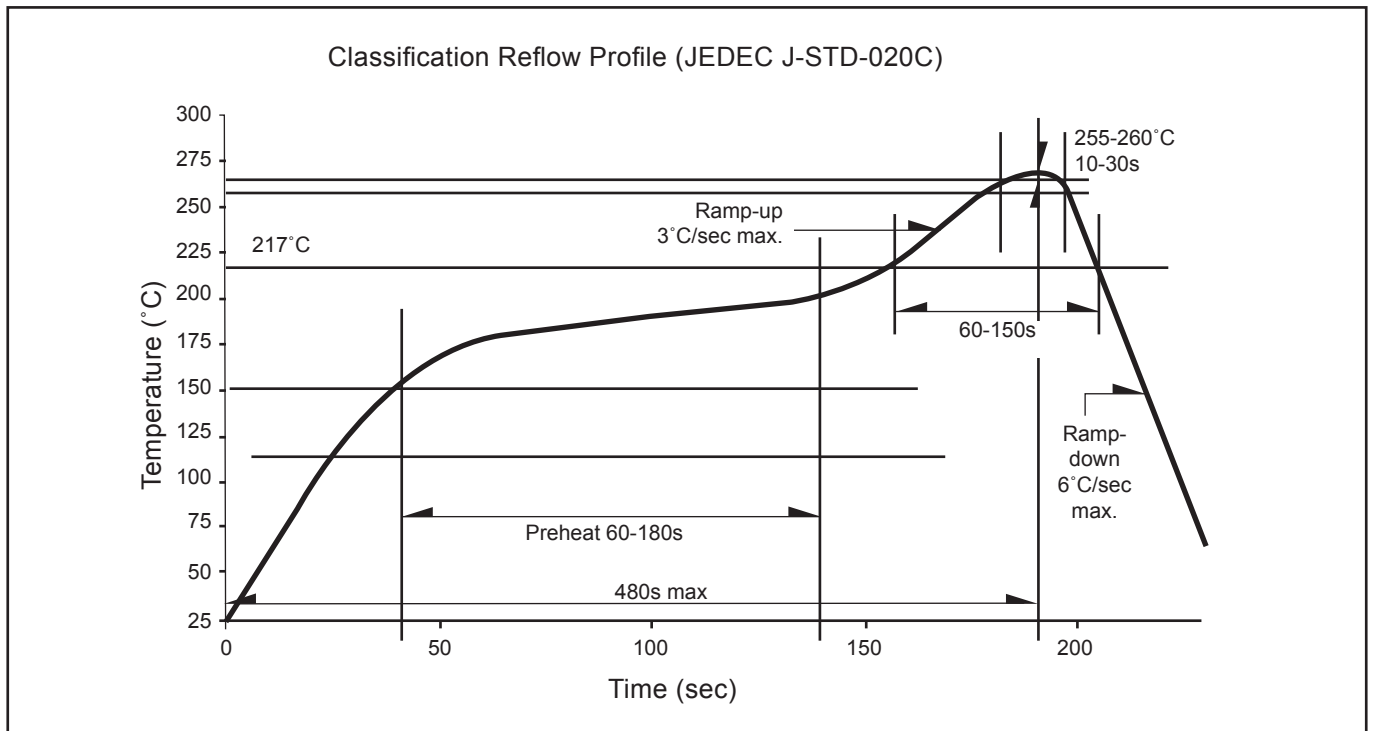
	Average 1pc Primax	1 completed bag (1000pcs)
Weight (gram)	0.041	160 ± 10



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	96,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	16 Oct 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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