

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.

Features:

- > Super high brightness surface mount LED
- > 120° viewing angle.
- > Compact package outline (LxW) of 4.0 x 1.4 mm.
- > Ultra low height profile - 0.7mm.
- > Low thermal resistance.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Good colour rendering index; CRI min 70.

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	CRI Typ.	Viewing Angle°	Luminous Intensity @ 60mA (mcd)		
				Min.	Typ.	Max.
NGF-WSG-4ZDA-1	Warm White	75	120	6370.0	7200.0	9000.0

NOTE

1. Luminous intensity is measured with an accuracy of ± 11%.
2. Color binning is carried for all units as per the wavelength-binning table. Only one color group is allowed for each reel.
3. High color rendering index (CRI). Minimum CRI of 70.

Electrical Characteristics at Tj=25°C

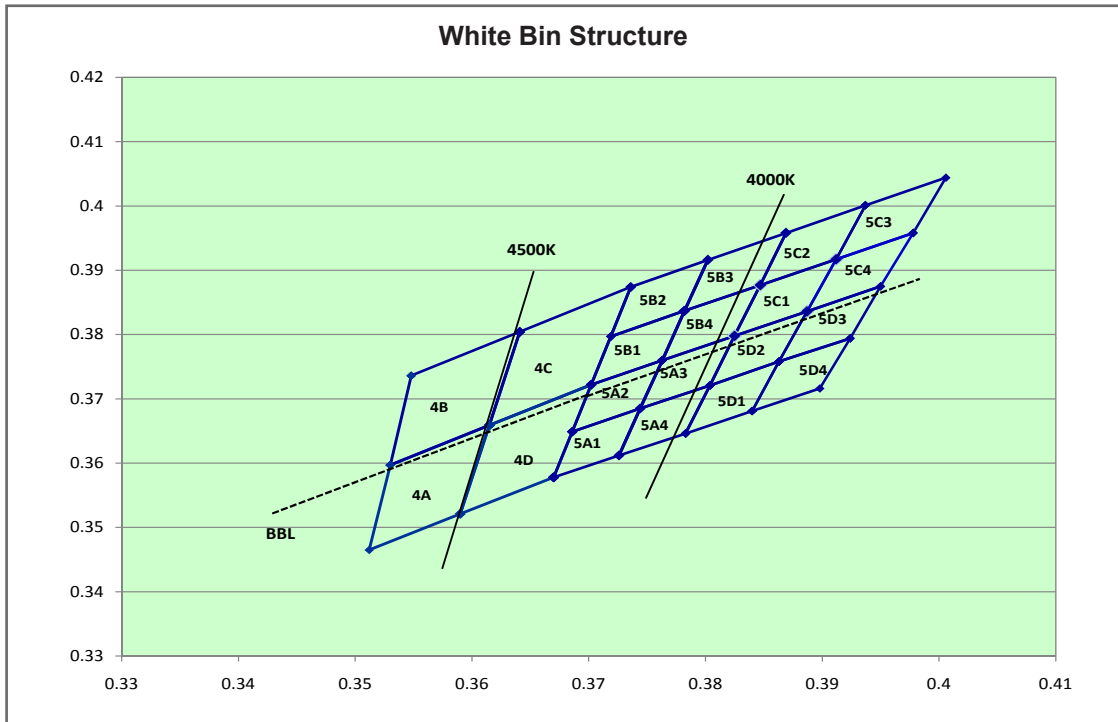
Part Number	Vf @ If = 60 mA			Vr @ Ir = 10 µA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
NGF-WSG	2.9	3.2	3.6	5.0

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	70	mA
Peak pulse current	100	mA
Reverse voltage	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +85	°C
Storage temperature	-40 ... +100	°C
Thermal resistance		
- Junction / ambient, R _{th JA}	230	K/W
- Junction / solder point, R _{th JS}	45	K/W
(Mounted on dual sided FR4 in house PCB, total Cu area >900mm ²)		

Warm White Color Grouping



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

Bin		1	2	3	4
4A	Cx	0.3530	0.3615	0.3590	0.3512
	Cy	0.3597	0.3659	0.3521	0.3465
4B	Cx	0.3548	0.3641	0.3615	0.3530
	Cy	0.3736	0.3804	0.3659	0.3597
4C	Cx	0.3641	0.3736	0.3702	0.3615
	Cy	0.3804	0.3874	0.3722	0.3659
4D	Cx	0.3615	0.3702	0.3670	0.3590
	Cy	0.3659	0.3722	0.3578	0.3521
5A1	Cx	0.3670	0.3686	0.3744	0.3726
	Cy	0.3578	0.3649	0.3685	0.3612
5A2	Cx	0.3686	0.3702	0.3763	0.3744
	Cy	0.3649	0.3722	0.3760	0.3685
5A3	Cx	0.3744	0.3763	0.3825	0.3804
	Cy	0.3685	0.3760	0.3798	0.3721
5A4	Cx	0.3726	0.3744	0.3804	0.3783
	Cy	0.3612	0.3685	0.3721	0.3646
5B1	Cx	0.3702	0.3719	0.3782	0.3763
	Cy	0.3722	0.3797	0.3837	0.3760
5B2	Cx	0.3719	0.3736	0.3802	0.3782
	Cy	0.3797	0.3874	0.3916	0.3837
5B3	Cx	0.3782	0.3802	0.3869	0.3847
	Cy	0.3837	0.3916	0.3958	0.3877
5B4	Cx	0.3763	0.3782	0.3847	0.3825
	Cy	0.3760	0.3837	0.3877	0.3798

Bin		1	2	3	4
5C1	Cx	0.3825	0.3847	0.3912	0.3887
	Cy	0.3798	0.3877	0.3917	0.3836
5C2	Cx	0.3847	0.3869	0.3937	0.3912
	Cy	0.3877	0.3958	0.4001	0.3917
5C3	Cx	0.3912	0.3937	0.4006	0.3978
	Cy	0.3917	0.4001	0.4044	0.3958
5C4	Cx	0.3887	0.3912	0.3978	0.3950
	Cy	0.3836	0.3917	0.3958	0.3875
5D1	Cx	0.3783	0.3804	0.3863	0.3840
	Cy	0.3646	0.3721	0.3758	0.3681
5D2	Cx	0.3804	0.3825	0.3887	0.3863
	Cy	0.3721	0.3798	0.3836	0.3758
5D3	Cx	0.3863	0.3887	0.3950	0.3924
	Cy	0.3758	0.3836	0.3875	0.3794
5D4	Cx	0.3840	0.3863	0.3924	0.3898
	Cy	0.3681	0.3758	0.3794	0.3716

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

Luminous Intensity Group

Brightness Group	Luminous Intensity IV (mcd)	Luminous Flux IV (lm) Typ.
4Z	6370.0 ... 7150.0	19.6
CA	7150.0 ... 8070.0	22.1
DA	8070.0 ... 9000.0	24.8

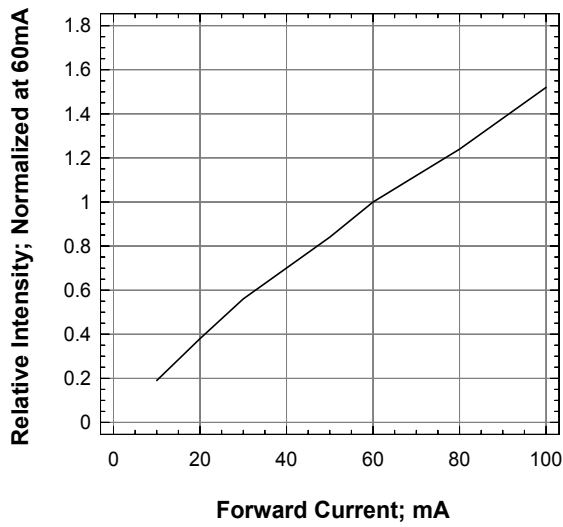
Luminous intensity is measured with an accuracy of ± 11%.

Vf Binning

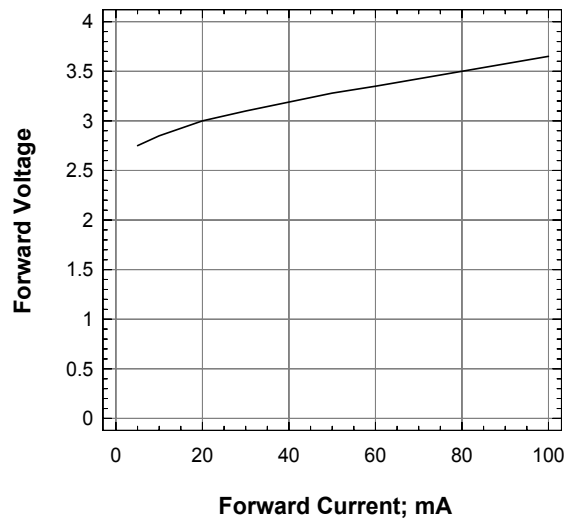
Vf Bin @ 60mA	Forward Voltage (V)
V1	2.90 ... 3.00
V2	3.00 ... 3.10
V3	3.10 ... 3.20
V4	3.20 ... 3.30
V5	3.30 ... 3.40
V6	3.40 ... 3.50
V7	3.50 ... 3.60

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

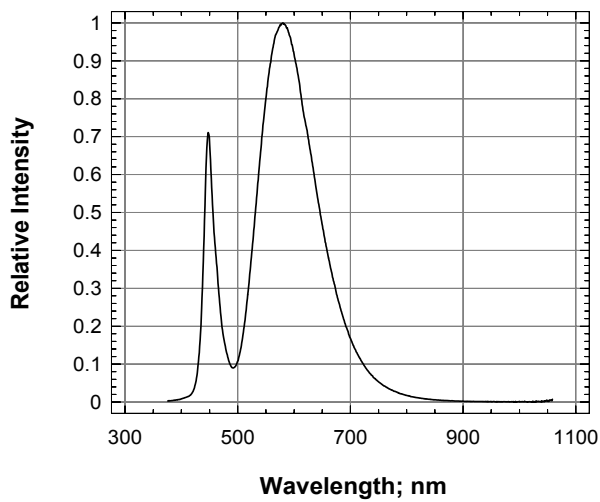
Relative Intensity Vs Forward Current



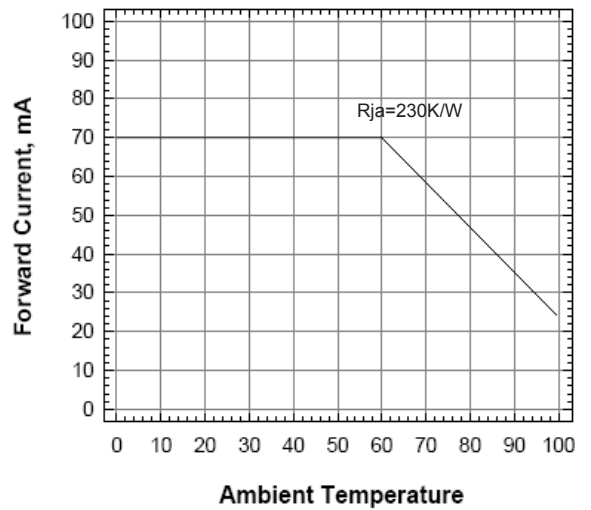
Forward Voltage Vs Forward Current



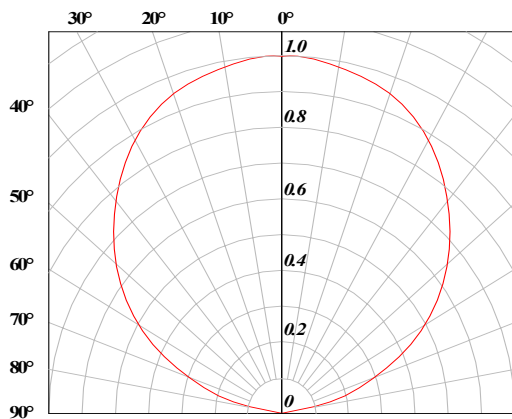
Relative Intensity Vs Wavelength



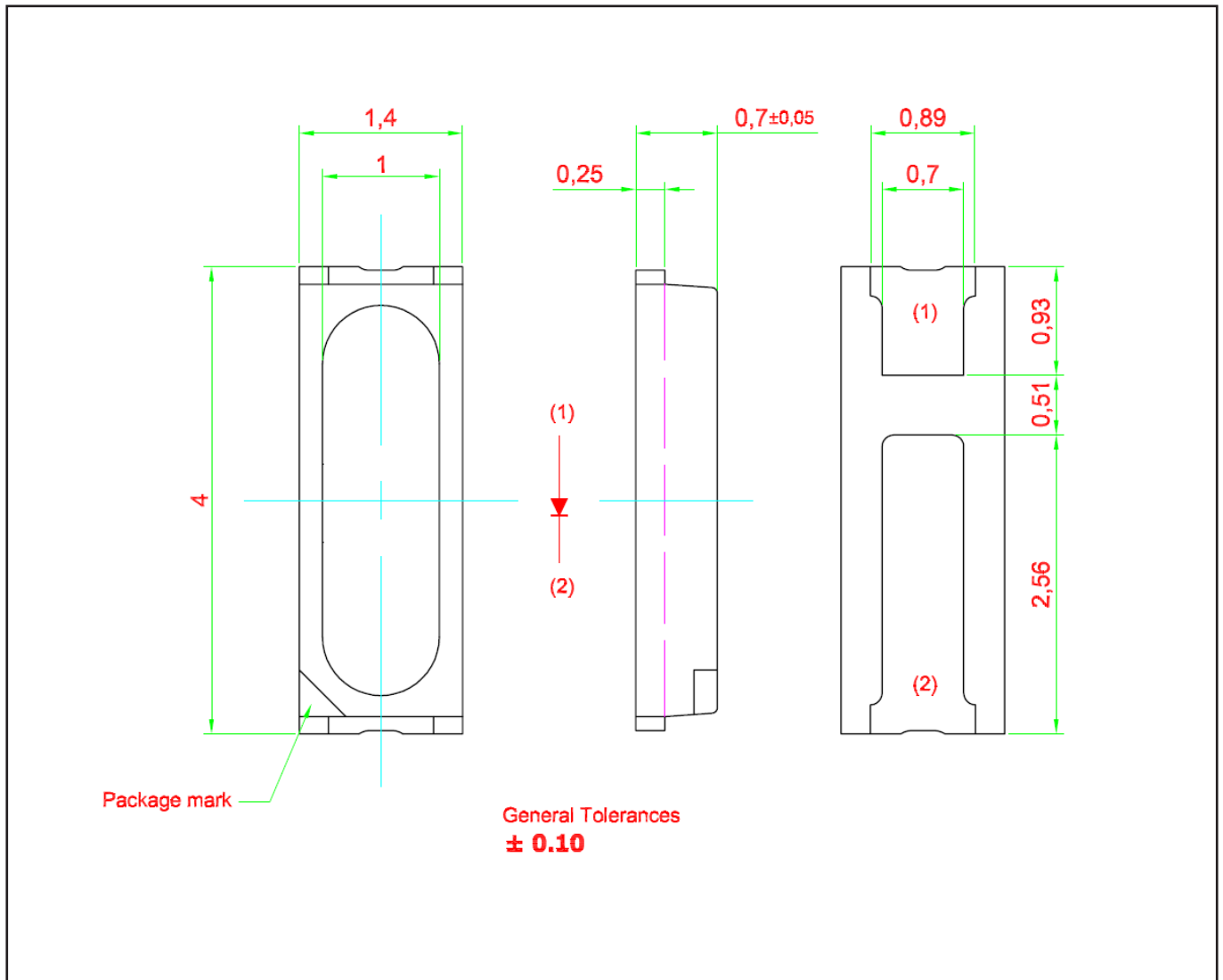
Maximum Current Vs Ambient Temperature



Radiation Pattern



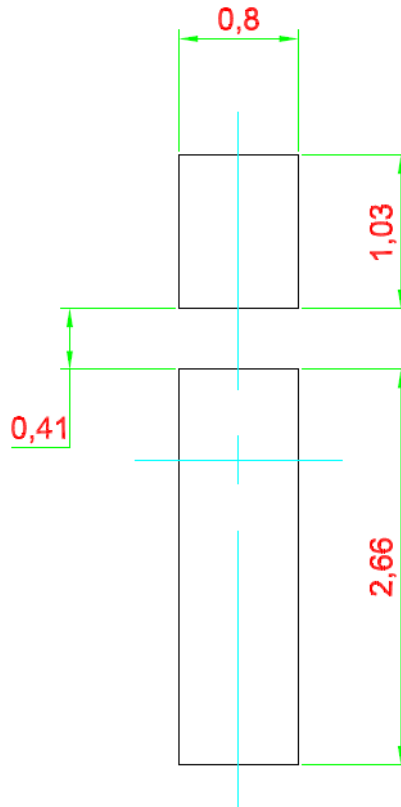
PrimaxN4104 • 60 InGaN Warm White: NGF-WSG Package Outlines



Material

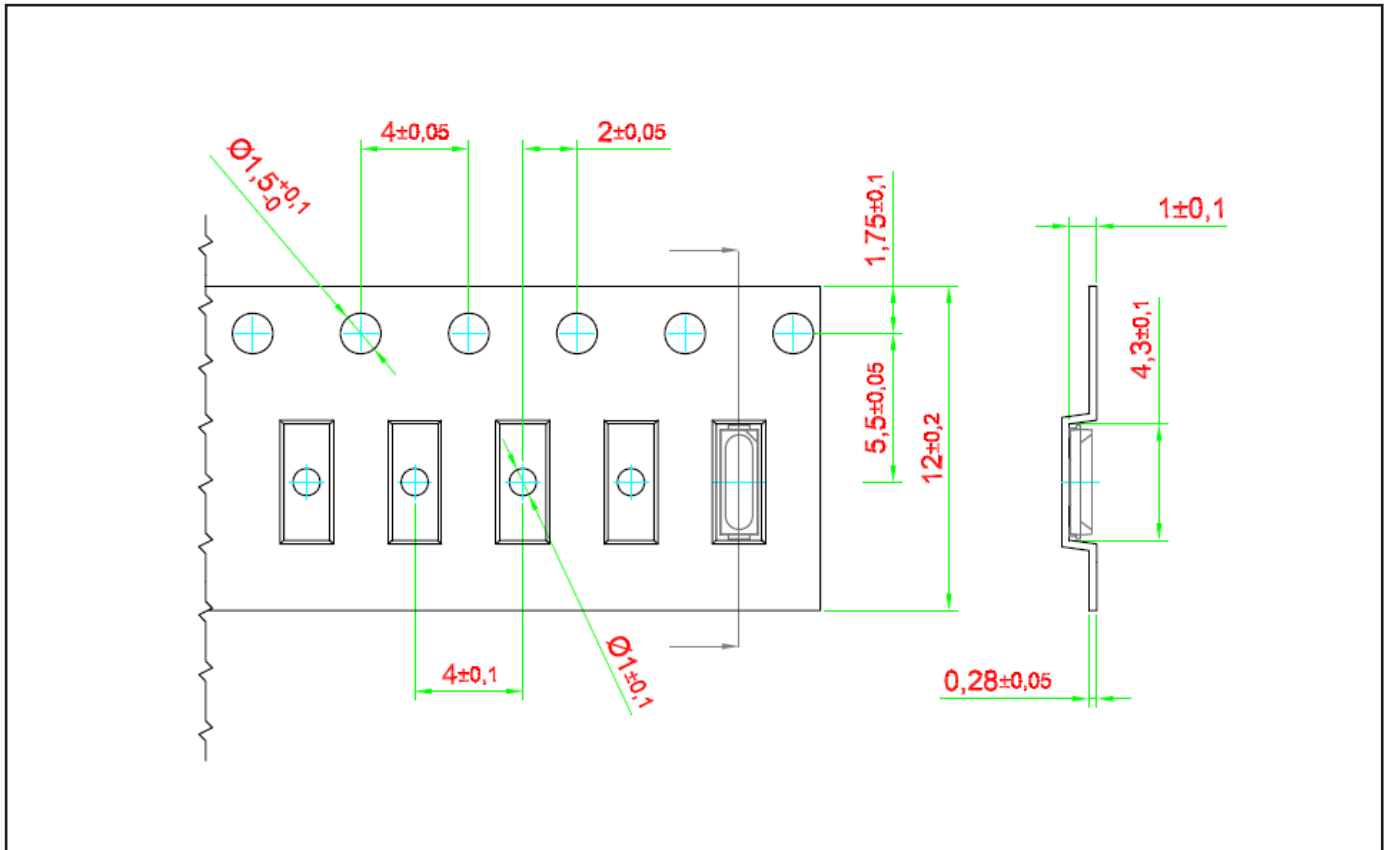
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Ag Plating

Recommended Solder Pad

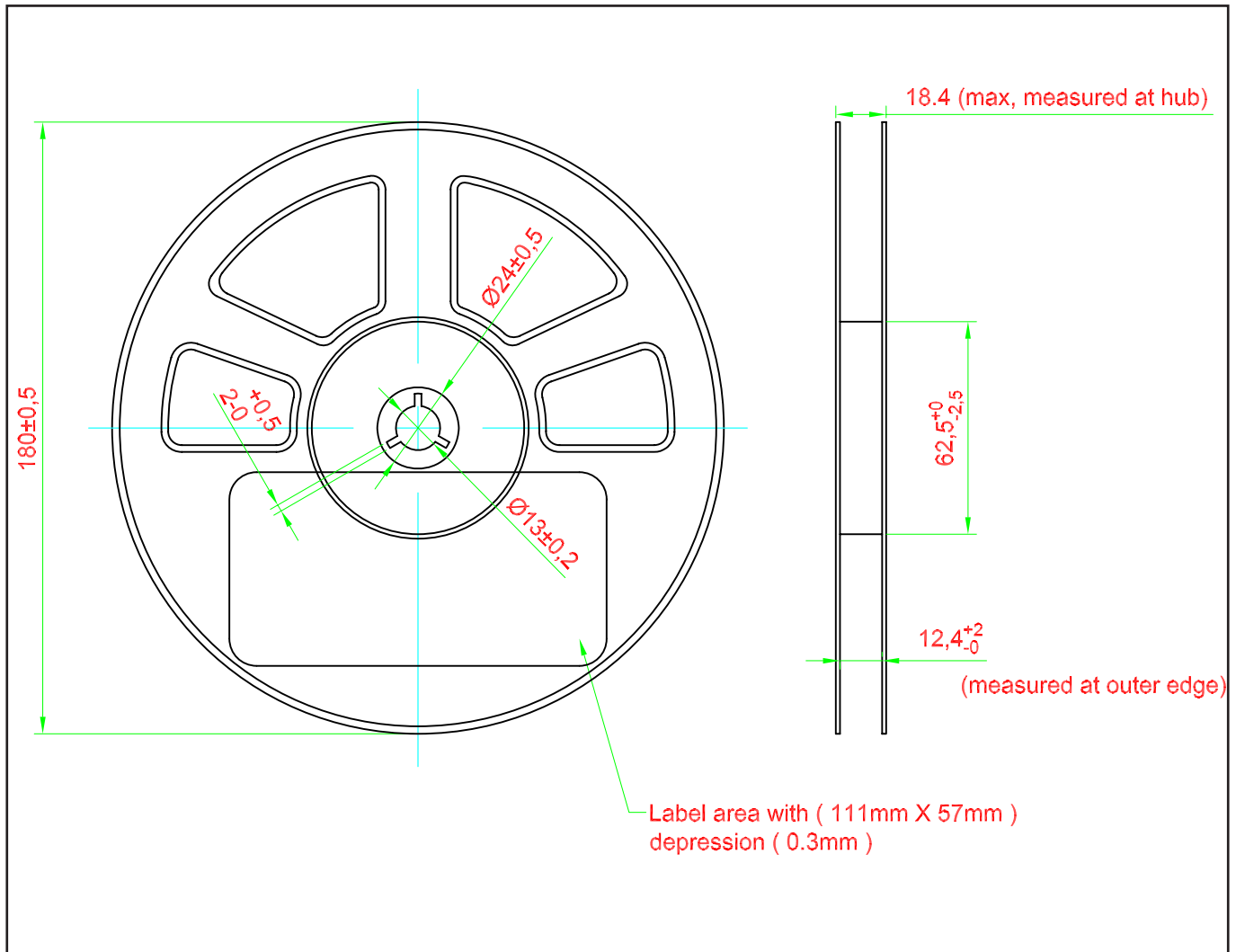


Taping and orientation

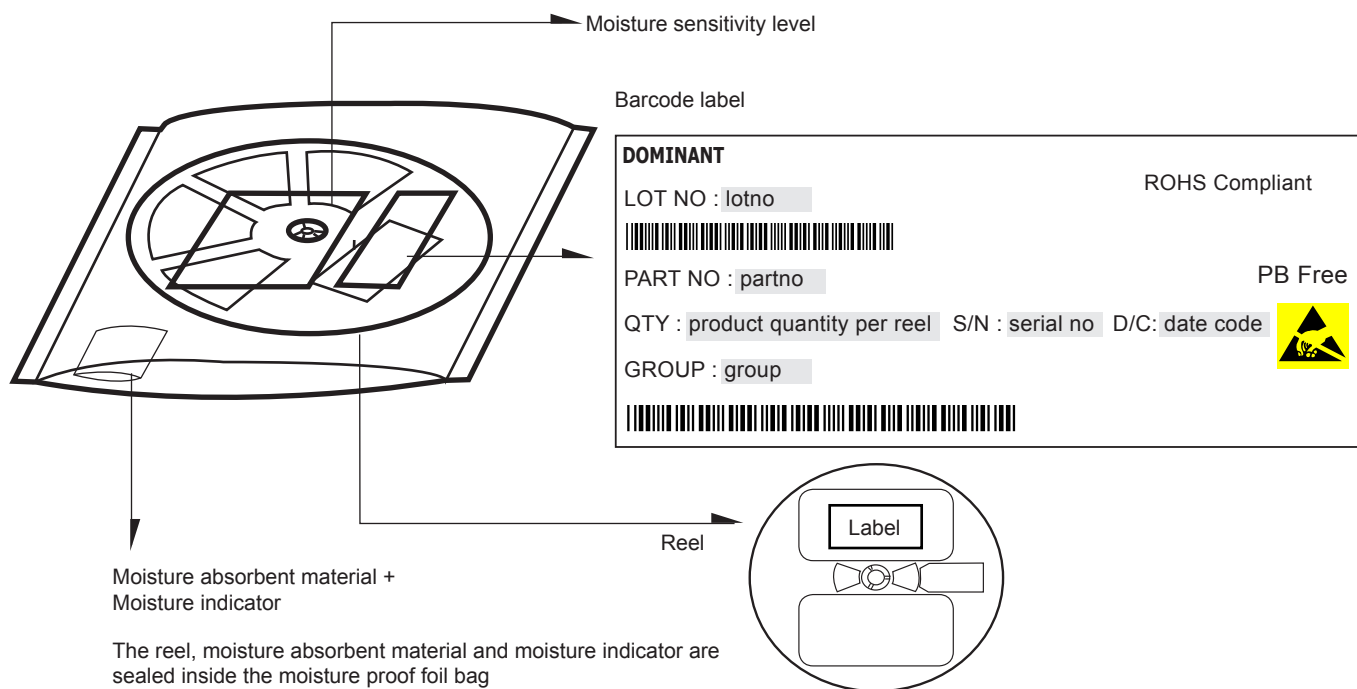
- Reels come in quantity of 2000 units.
- Reel diameter is 180



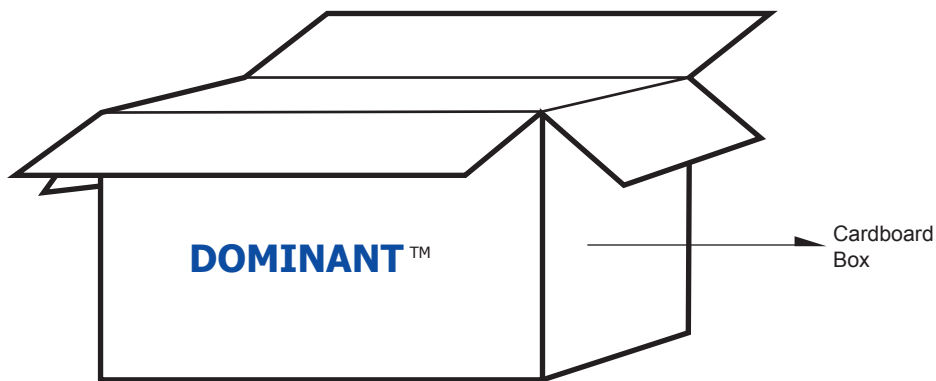
Packaging Specification



Packaging Specification



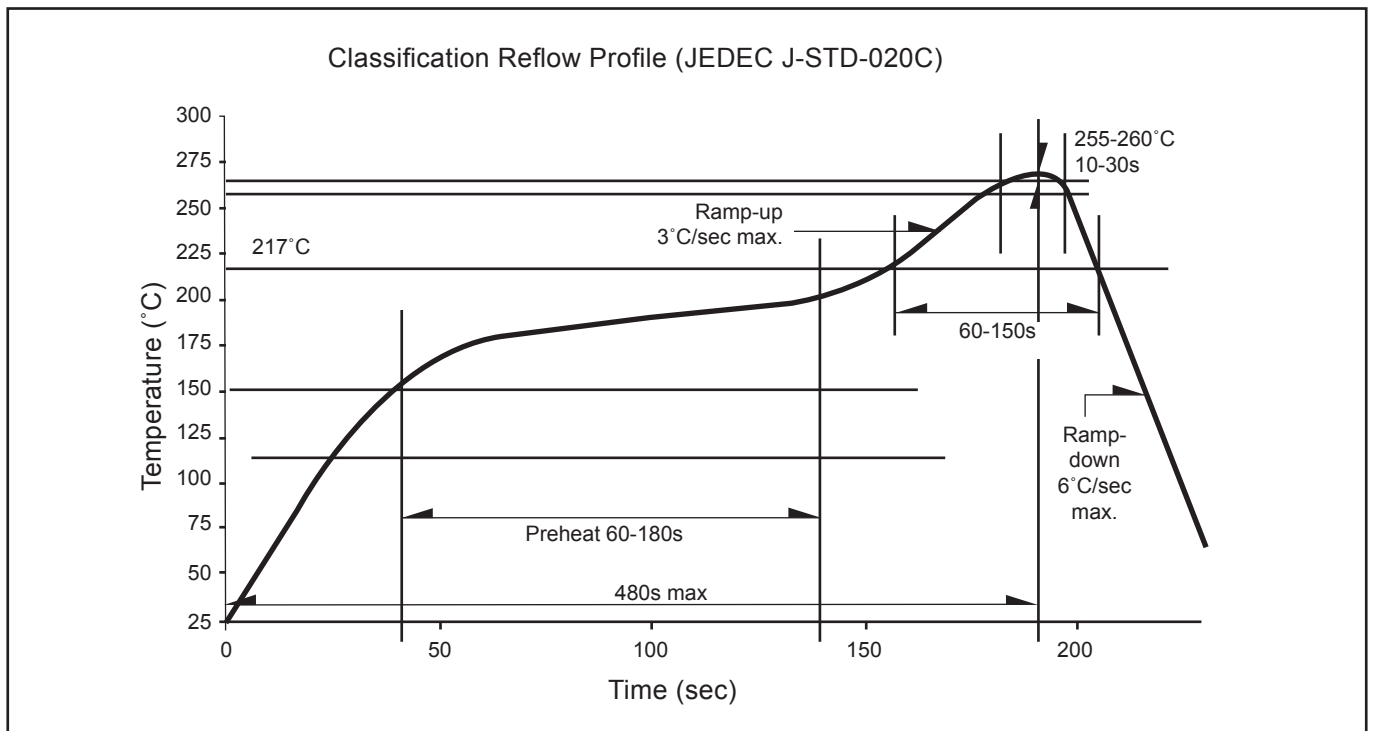
	Average 1pc PrimaxN4014	1 completed bag (2000pcs)
Weight (gram)	0.0108	150 ± 10



For PrimaxN4014

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	30,000 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	27 Jun 2013
11	Typo error on weight	14 Nov 2013
2	Add Thermal Resistance	11 Mar 2014

NOTE

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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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