DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET :

Primax5™

150 InGaN Warm White : NSF-FSC

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 5.6 x 3.0 mm.
> Ultra low height profile - 1.2mm.
> Low thermal resistance.
> Compatible to IR reflow soldering.
> Environmental friendly; RoHS compliance.
> Excellent reliability with nitride phosphor system.





Applications:

> Lighting: garden light, architecture lighting, general lighting. etc
> Backlighting (TFT LCD display), flash light, architectural lighting.

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Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	CRI Typ.	Luminous Flux @ 150mA (lm) Min.	Typ.	Max.
NSF-FSC-RS2-1	Warm White	120	85	39.8	50.0	59.0

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 80.

Electrical Characteristics at Tj=25°C

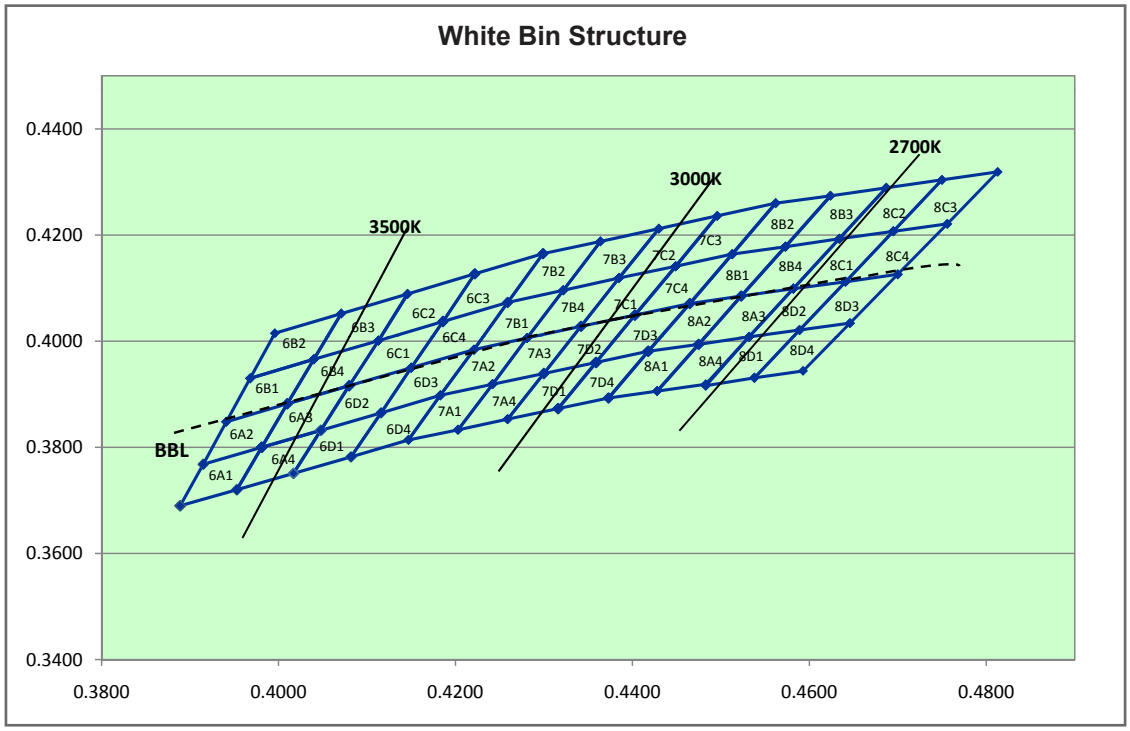
Part Number	Vf @ If = 150 mA Min. (V)	Typ. (V)	Max. (V)	Vr @ Ir = 10 µA Min. (V)
NSF-FSC	3.0	3.3	3.7	5.0

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	180	mA
Peak pulse current	200	mA
Reverse voltage	10	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	˚C
Operating temperature	-40 … +100	˚C
Storage temperature	-40 … +100	˚C
Thermal resistance - Junction / ambient, $R_{th\ JA}$ - Junction / solder point, $R_{th\ JS}$ (Mounted on dual-sided FR4 in-house PCB with plated through hole; total Cu area > 900 mm^2 per pad)	 90 25	 K/W K/W

NSF-FSC, Color Grouping



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

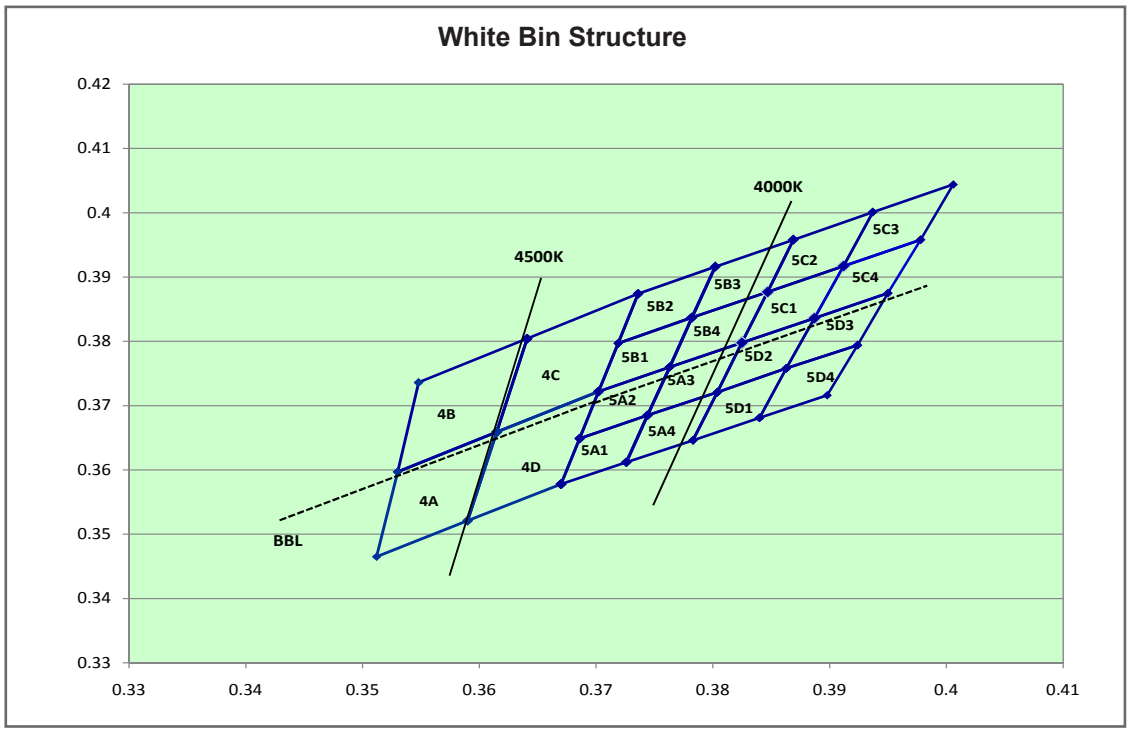
Bin		1	2	3	4
6A1	Cx	0.3889	0.3915	0.3981	0.3953
	Cy	0.3690	0.3768	0.3800	0.3720
6A2	Cx	0.3915	0.3941	0.4010	0.3981
	Cy	0.3768	0.3848	0.3882	0.3800
6A3	Cx	0.3981	0.4010	0.4080	0.4048
	Cy	0.3800	0.3882	0.3916	0.3832
6A4	Cx	0.3953	0.3981	0.4048	0.4017
	Cy	0.3720	0.3800	0.3832	0.3751
6B1	Cx	0.3941	0.3968	0.4040	0.4010
	Cy	0.3848	0.3930	0.3966	0.3882
6B2	Cx	0.3968	0.3996	0.4071	0.4040
	Cy	0.3930	0.4015	0.4052	0.3966
6B3	Cx	0.4040	0.4071	0.4146	0.4113
	Cy	0.3966	0.4052	0.4089	0.4001
6B4	Cx	0.4010	0.4040	0.4113	0.4080
	Cy	0.3882	0.3966	0.4001	0.3916
6C1	Cx	0.4080	0.4113	0.4186	0.4150
	Cy	0.3916	0.4001	0.4037	0.3950
6C2	Cx	0.4113	0.4146	0.4222	0.4186
	Cy	0.4001	0.4089	0.4127	0.4037
6C3	Cx	0.4186	0.4222	0.4299	0.4259
	Cy	0.4037	0.4127	0.4165	0.4073
6C4	Cx	0.4150	0.4186	0.4259	0.4221
	Cy	0.3950	0.4037	0.4073	0.3984

Bin		1	2	3	4
6D1	Cx	0.4017	0.4048	0.4116	0.4082
	Cy	0.3751	0.3832	0.3865	0.3782
6D2	Cx	0.4048	0.4080	0.4150	0.4116
	Cy	0.3832	0.3916	0.3950	0.3865
6D3	Cx	0.4116	0.4150	0.4221	0.4183
	Cy	0.3865	0.3950	0.3984	0.3898
6D4	Cx	0.4082	0.4116	0.4183	0.4147
	Cy	0.3782	0.3865	0.3898	0.3814
7A1	Cx	0.4147	0.4183	0.4242	0.4203
	Cy	0.3814	0.3898	0.3919	0.3833
7A2	Cx	0.4183	0.4221	0.4281	0.4242
	Cy	0.3898	0.3984	0.4006	0.3919
7A3	Cx	0.4242	0.4281	0.4342	0.4300
	Cy	0.3919	0.4006	0.4028	0.3939
7A4	Cx	0.4203	0.4242	0.4300	0.4259
	Cy	0.3833	0.3919	0.3939	0.3853
7B1	Cx	0.4221	0.4259	0.4322	0.4281
	Cy	0.3984	0.4073	0.4096	0.4006
7B2	Cx	0.4259	0.4299	0.4364	0.4322
	Cy	0.4073	0.4165	0.4188	0.4096
7B3	Cx	0.4322	0.4364	0.4430	0.4385
	Cy	0.4096	0.4188	0.4212	0.4119
7B4	Cx	0.4281	0.4322	0.4385	0.4342
	Cy	0.4006	0.4096	0.4119	0.4028
7C1	Cx	0.4342	0.4385	0.4449	0.4403
	Cy	0.4028	0.4119	0.4141	0.4049
7C2	Cx	0.4385	0.4430	0.4496	0.4449
	Cy	0.4119	0.4212	0.4236	0.4141
7C3	Cx	0.4449	0.4496	0.4562	0.4513
	Cy	0.4141	0.4236	0.4260	0.4164
7C4	Cx	0.4403	0.4449	0.4513	0.4465
	Cy	0.4049	0.4141	0.4164	0.4071
7D1	Cx	0.4259	0.4300	0.4359	0.4316
	Cy	0.3853	0.3939	0.3960	0.3873
7D2	Cx	0.4300	0.4342	0.4403	0.4359
	Cy	0.3939	0.4028	0.4049	0.3960
7D3	Cx	0.4359	0.4403	0.4465	0.4418
	Cy	0.3960	0.4049	0.4071	0.3981
7D4	Cx	0.4316	0.4359	0.4418	0.4373
	Cy	0.3873	0.3960	0.3981	0.3893
8A1	Cx	0.4373	0.4418	0.4475	0.4428
	Cy	0.3893	0.3981	0.3994	0.3906
8A2	Cx	0.4418	0.4465	0.4523	0.4475
	Cy	0.3981	0.4071	0.4085	0.3994
8A3	Cx	0.4475	0.4523	0.4582	0.4532
	Cy	0.3994	0.4085	0.4099	0.4008
8A4	Cx	0.4428	0.4475	0.4532	0.4483
	Cy	0.3906	0.3994	0.4008	0.3919

Bin		1	2	3	4
8B1	Cx	0.4465	0.4513	0.4573	0.4523
	Cy	0.4071	0.4164	0.4178	0.4085
8B2	Cx	0.4513	0.4562	0.4624	0.4573
	Cy	0.4164	0.4260	0.4274	0.4178
8B3	Cx	0.4573	0.4624	0.4687	0.4634
	Cy	0.4178	0.4274	0.4289	0.4193
8B4	Cx	0.4523	0.4573	0.4634	0.4582
	Cy	0.4085	0.4178	0.4193	0.4099
8C1	Cx	0.4582	0.4634	0.4695	0.4641
	Cy	0.4099	0.4193	0.4207	0.4112
8C2	Cx	0.4634	0.4687	0.4750	0.4695
	Cy	0.4193	0.4289	0.4304	0.4207
8C3	Cx	0.4695	0.4750	0.4813	0.4756
	Cy	0.4207	0.4304	0.4319	0.4221
8C4	Cx	0.4641	0.4695	0.4756	0.4700
	Cy	0.4112	0.4207	0.4221	0.4126
8D1	Cx	0.4483	0.4532	0.4589	0.4538
	Cy	0.3916	0.4008	0.4021	0.3931
8D2	Cx	0.4532	0.4582	0.4641	0.4589
	Cy	0.4008	0.4099	0.4112	0.4021
8D3	Cx	0.4589	0.4641	0.4700	0.4646
	Cy	0.4021	0.4112	0.4126	0.4034
8D4	Cx	0.4538	0.4589	0.4646	0.4593
	Cy	0.3931	0.4021	0.4034	0.3944

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

NSF-FSC, 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 Flux IV (lm)
R2	39.8 ... 45.2
R3	45.2 ... 51.7
S2	51.7 ... 59.0

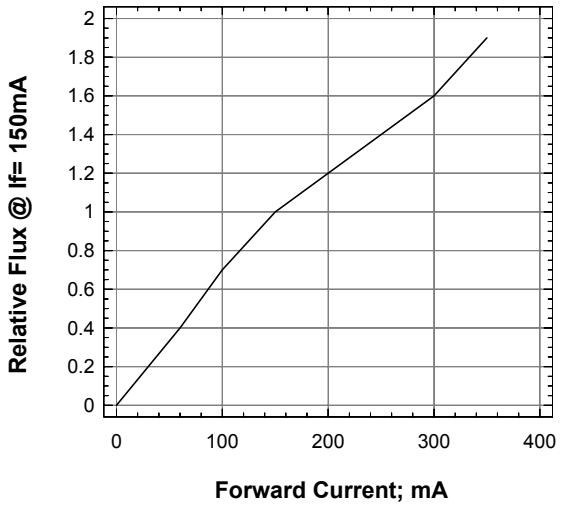
Luminous intensity is measured with an accuracy of ± 11%.

Vf Binning

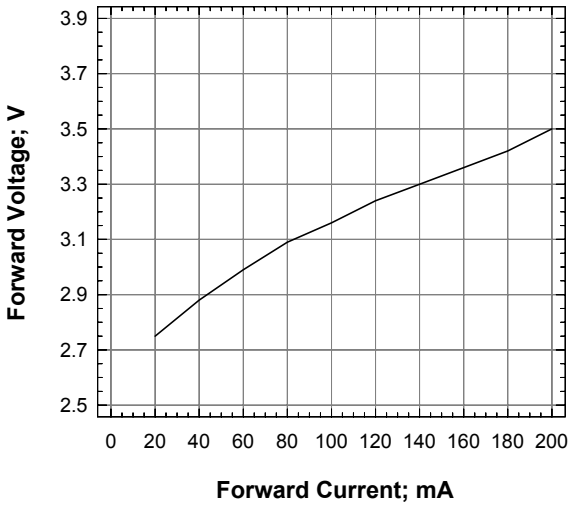
Vf Bin @ 150mA	Forward Voltage (V)
V1	3.00 ... 3.10
V2	3.10 ... 3.20
V3	3.20 ... 3.30
V4	3.30 ... 3.40
V5	3.40 ... 3.50
V6	3.50 ... 3.60
V7	3.60 ... 3.70

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

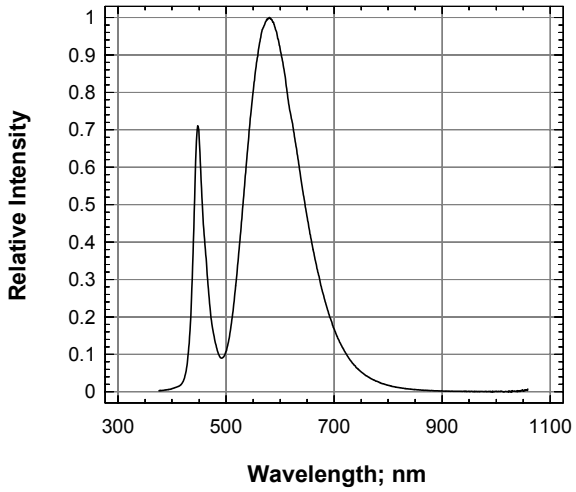
Relative Flux Vs Forward Current



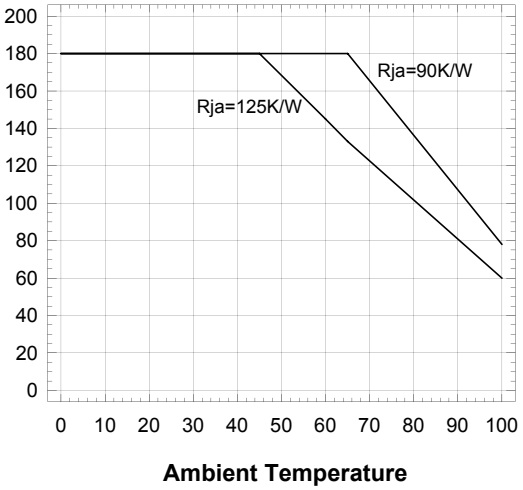
Forward Voltage Vs Forward Current



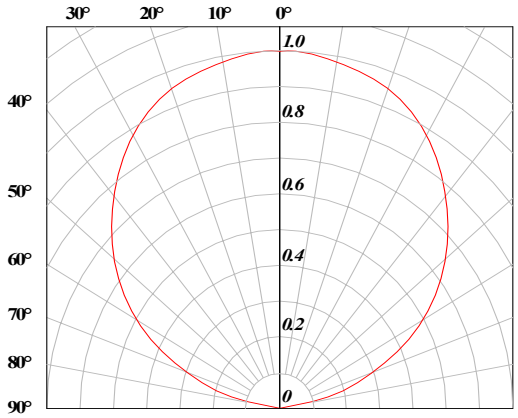
Relative Intensity Vs Wavelength



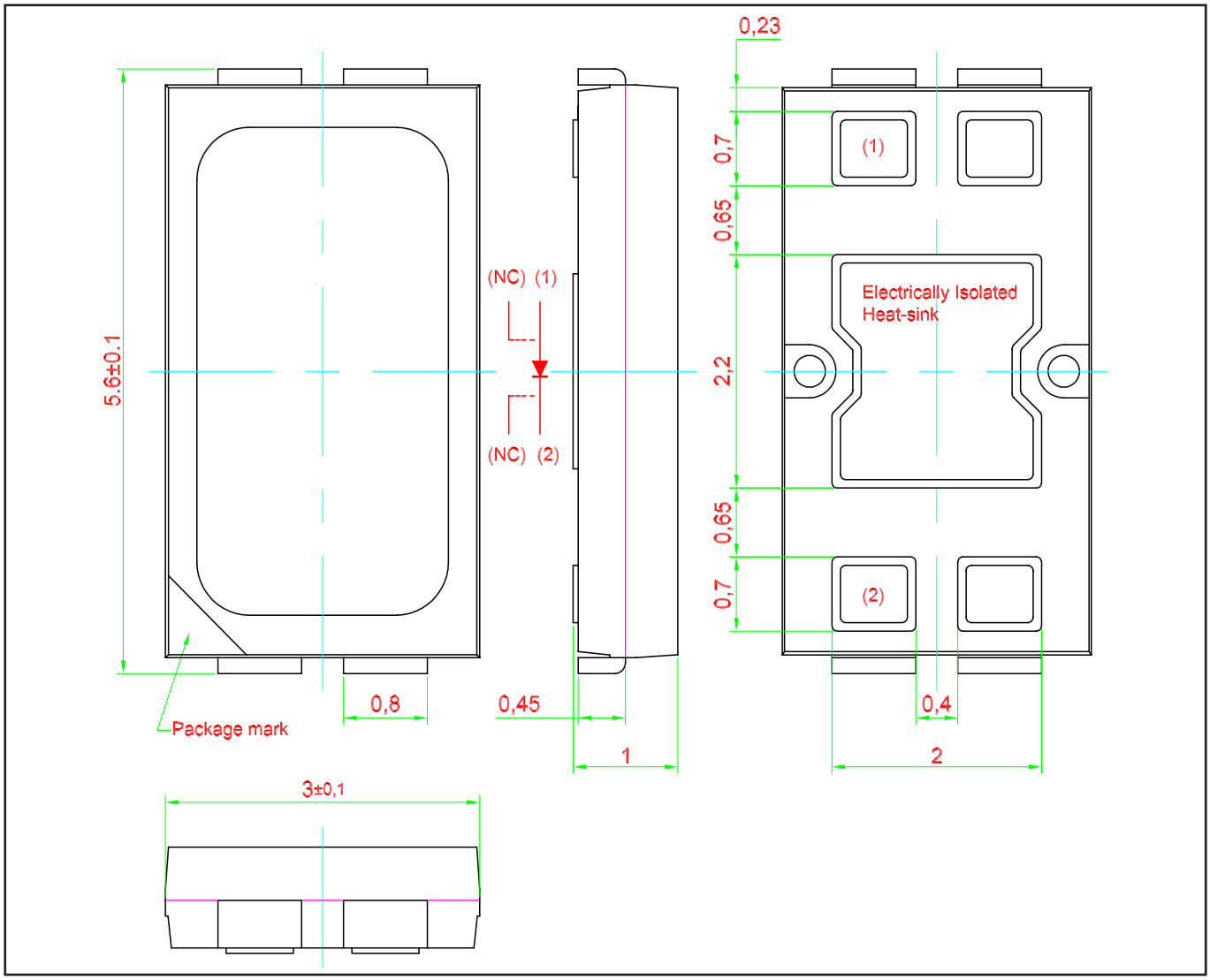
Forward Current Vs Ambient Temperature



Radiation Pattern



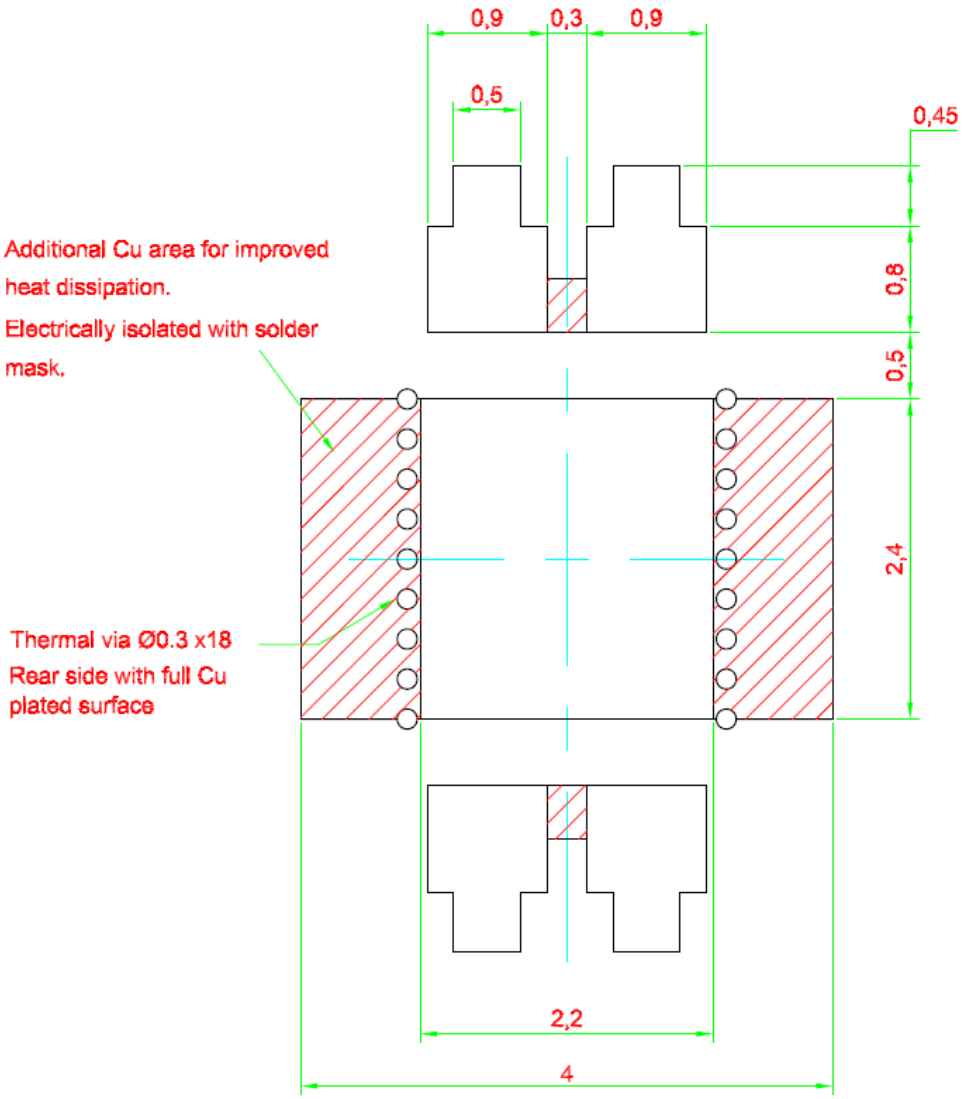
Primax5™ • 150 InGaN Warm White: NSF-FSC Package Outlines



Material

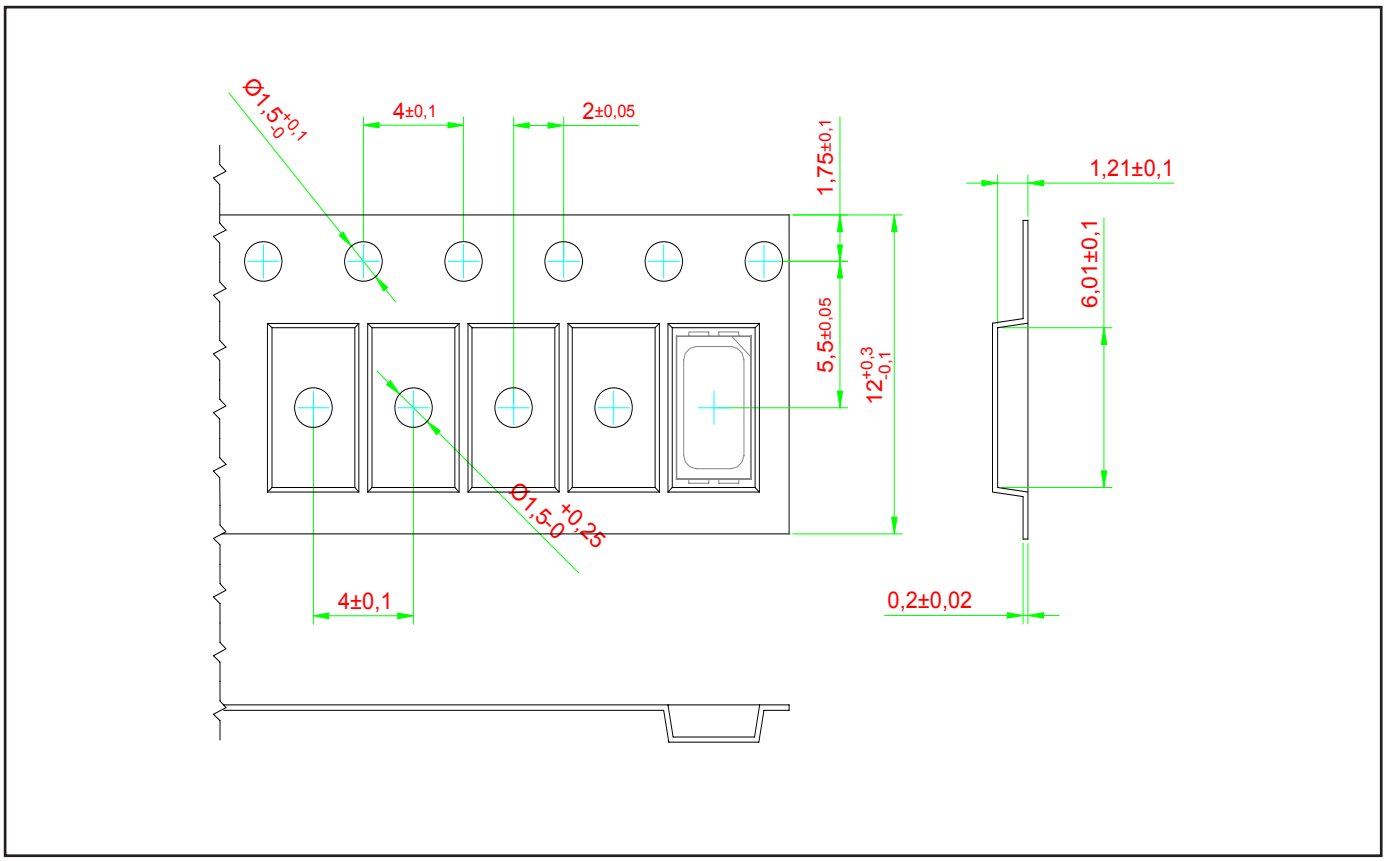
	Material
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Ag Plating

Recommended Solder Pad

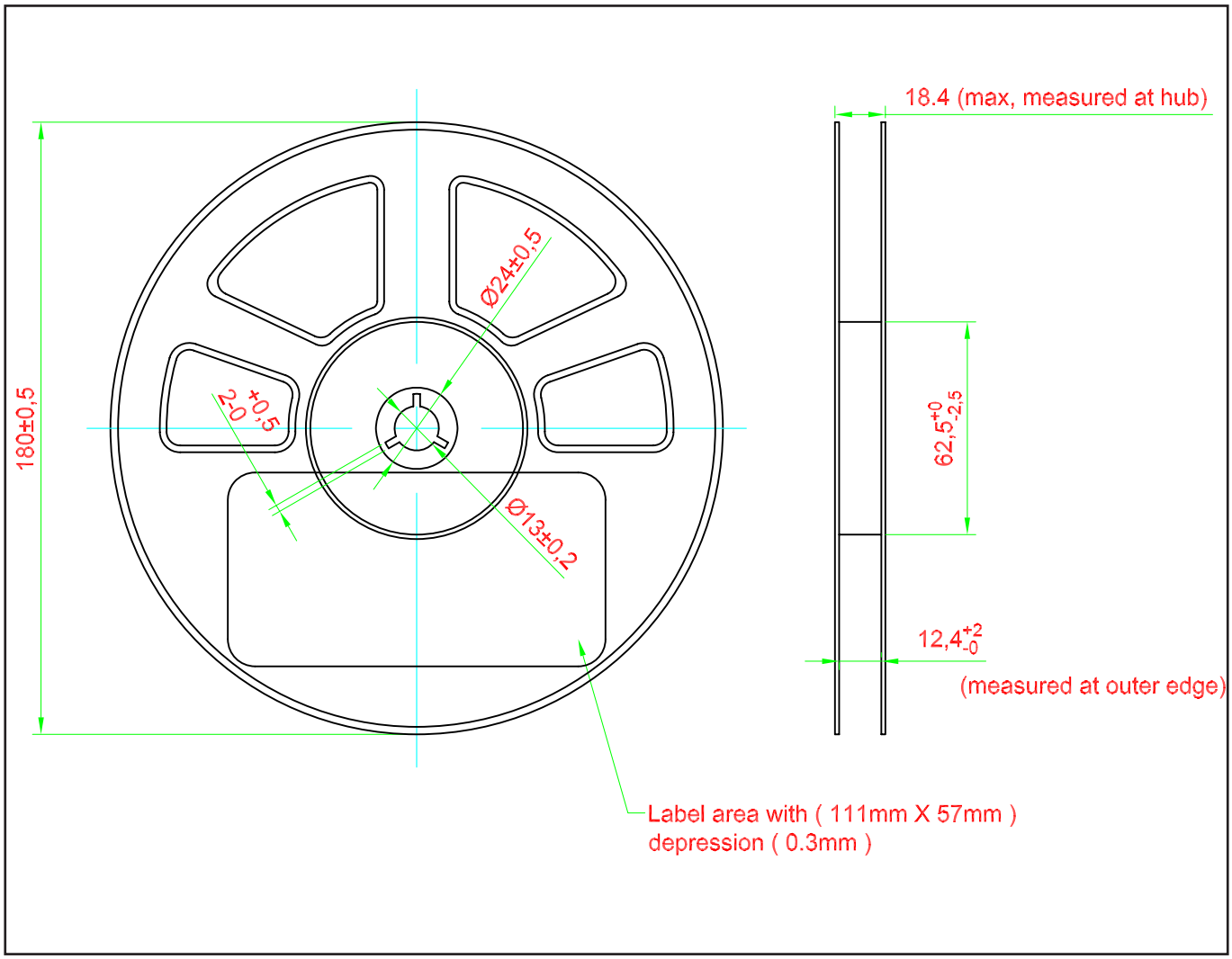


Taping and orientation

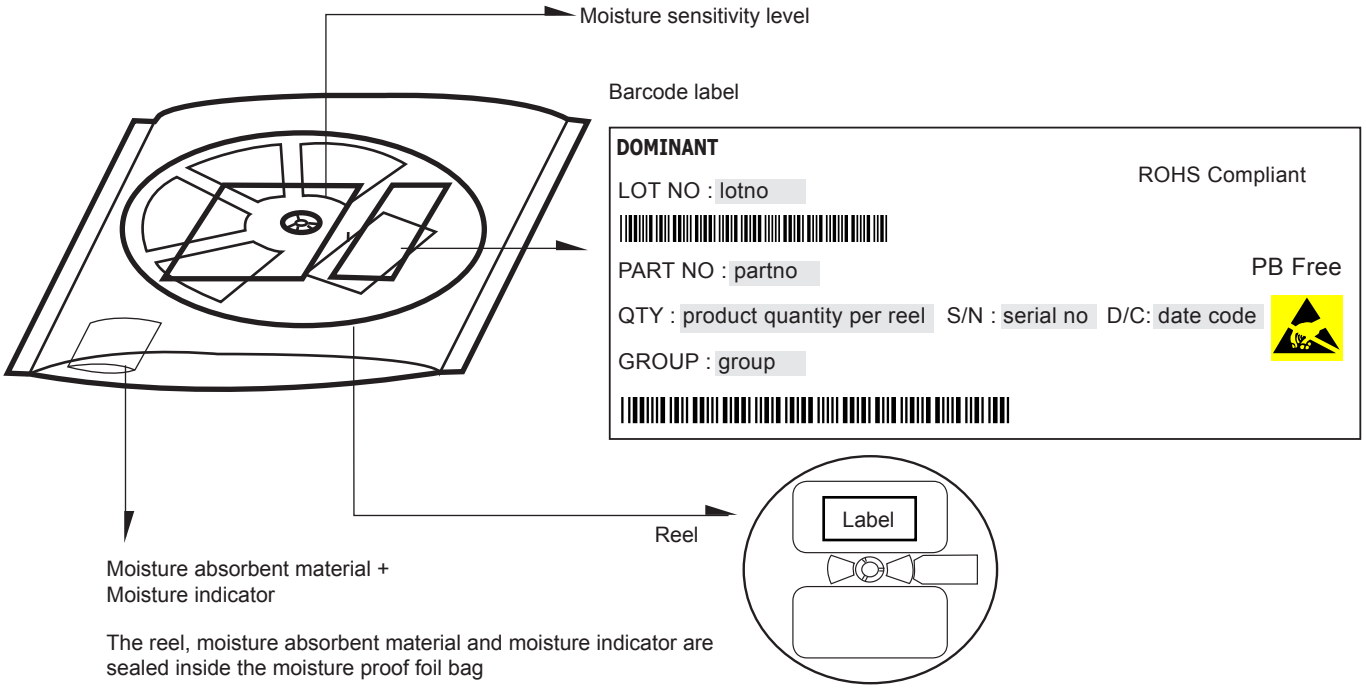
- Reels come in quantity of 2000 units.
- Reel diameter is 180mm.



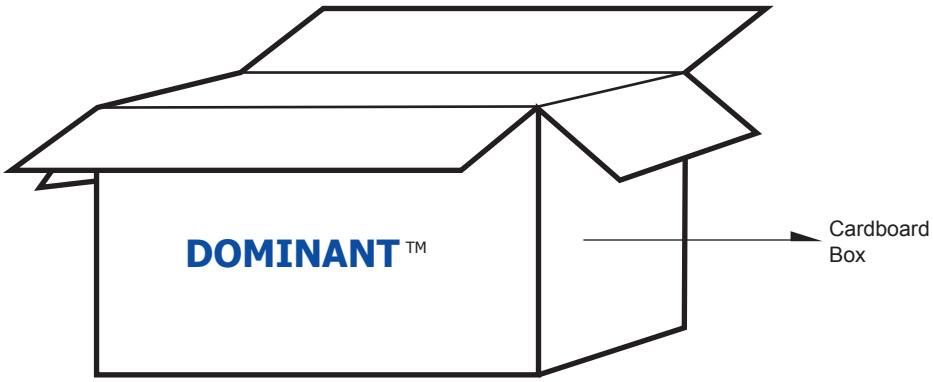
Packaging Specification



Packaging Specification



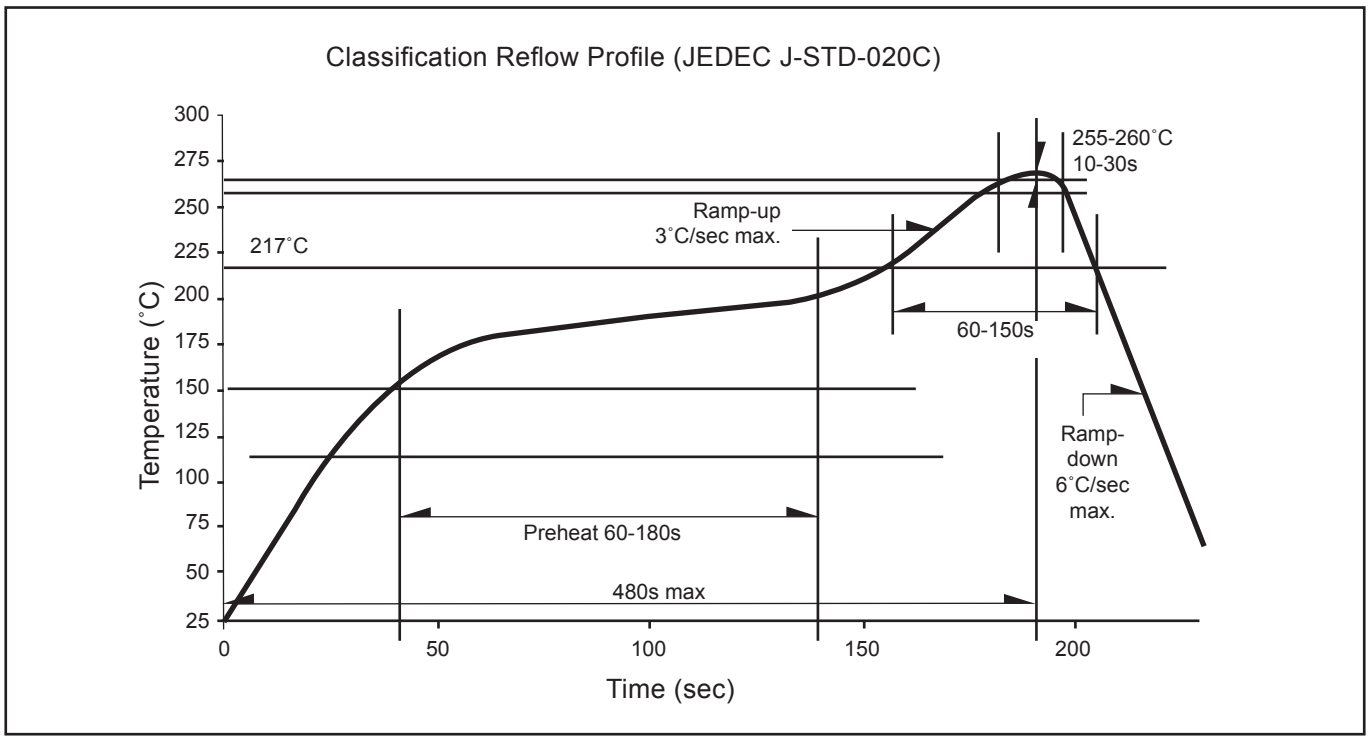
	Average 1pc Primax5	1 completed bag (2000pcs)
Weight (gram)	**0.041**	**200 ± 10**



For Primax5™

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	16 May 2012
10	Update package outline	15 Oct 2012
3	Typo error on graph label	06 Sep 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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