DOMINANT™ Semiconductors
Innovating Illumination

DATA SHEET:

5mm Lamp
InGaN White: High Brightness

Lamp Type LED - 5mm Round

Synonymous with function and performance, the 5mm Round LED has superior performance in outdoor applications due to its well-defined radiation pattern and wide viewing angle. These lamps are made with an advanced optical grade epoxy, offering superior high temperature and high moisture resistance performance in outdoor signal and sign applications

Features:

> High brightness LED lamp.
> Narrow viewing angle; 15^{o} and 30^{o}
> Superior resistance to moisture.
> Suitable for TTW soldering.

Applications:

> Full color signs
> Outdoor displays/signs

Optical Characteristics at Tj=25˚C

Part Ordering Number	Color	Viewing Angle˚	Luminous Intensity @ 20mA IV (mcd) Min.	Typ.	Max.
L5W-N1500-ADG-1	White	15	14000.00	22400.00	35500.00
L5W-N3000-Z1AB-1	White	30	4500.00	7150.00	11250.00

NOTE
1. Luminous intensity is measured with an accuracy of ± 15%.
2. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each pack.

Electrical Characteristics at Tj=25˚C

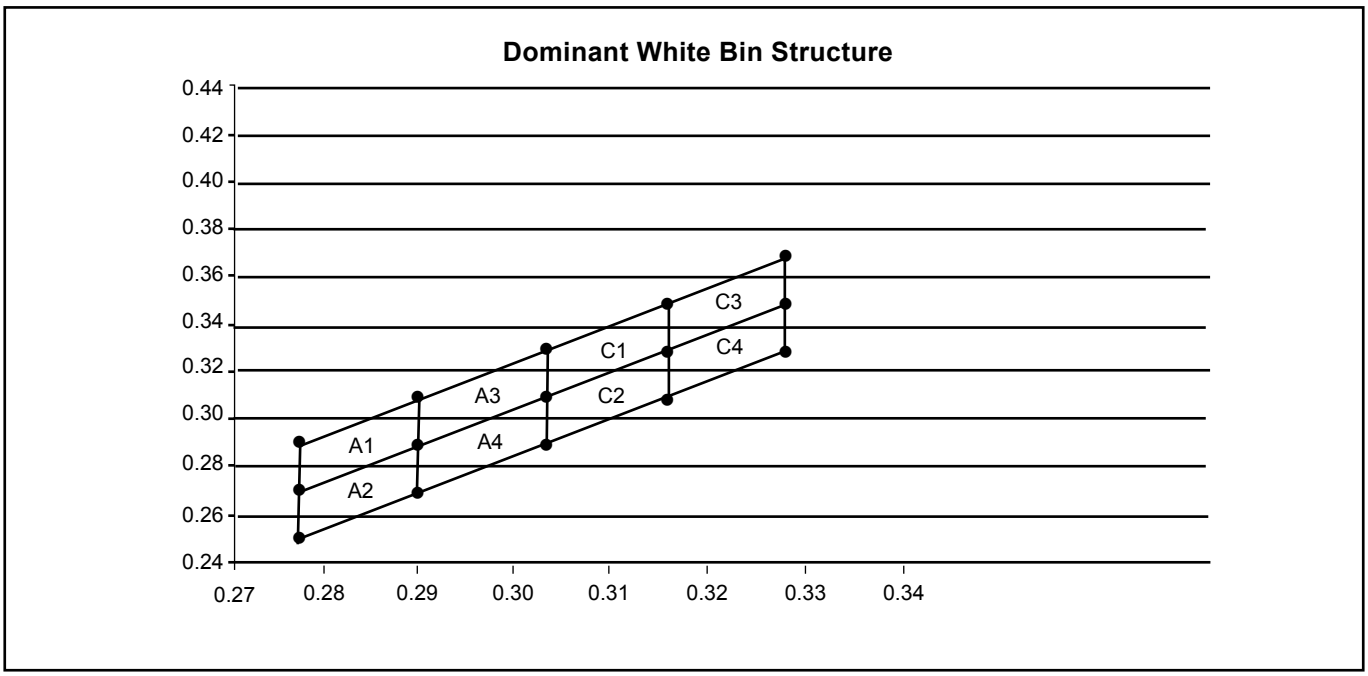
Part Number	Vf @ If = 20mA Min. (V)	Typ. (V)	Max. (V)	V_r @ I_r = 10uA Min. (V)
L5W	2.8	3.2	3.8	5

Forward voltages are measure using a current pulse of 1 ms and with an accuracy of ± 0.1V.

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	25	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.10)	100	mA
Reverse voltage ; Ir (max) = 10μA.	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	120	˚C
Operating temperature	-40 … +95	˚C
Storage temperature	-40 … +100	˚C
Power dissipation (at room temperature)	95	mW

White Color Grouping

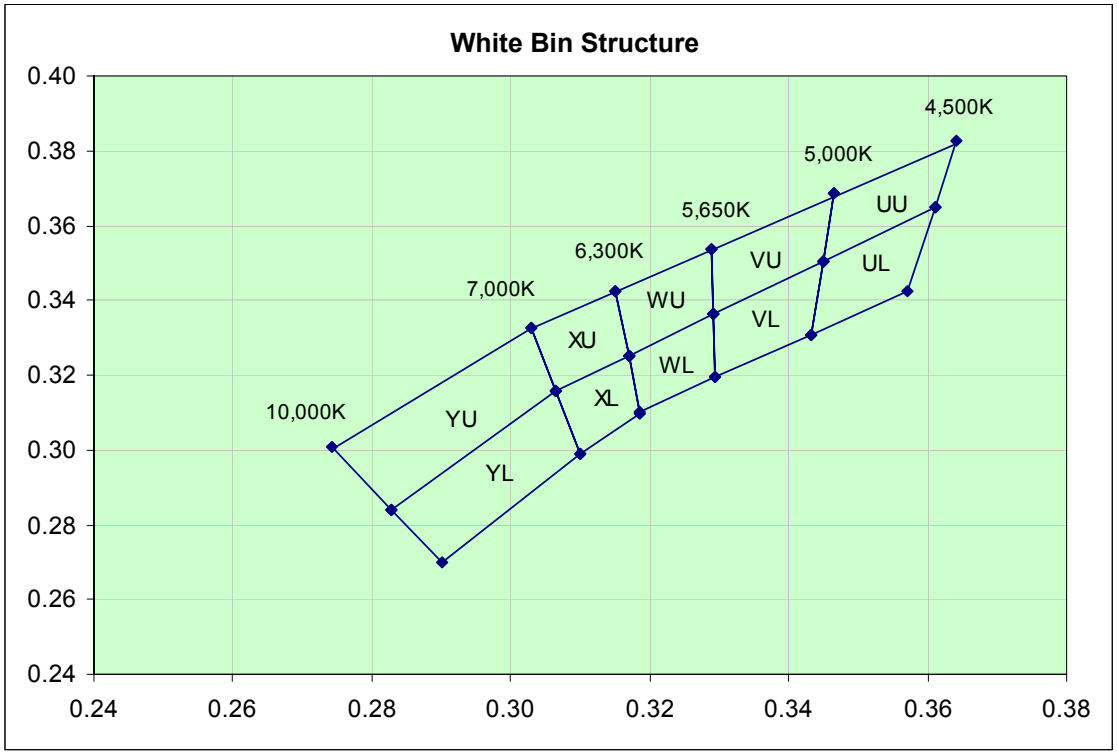


Chromaticity coordinate groups are measured with an accuracy of ± 0.01.

Bin					
A1	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2732	0.2939	0.3114	0.2907
A2	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2557	0.2764	0.2939	0.2732
A3	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2939	0.3146	0.3321	0.3114
A4	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2764	0.2971	0.3146	0.2939
C1	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.3146	0.3354	0.3529	0.3321
C2	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.2971	0.3179	0.3354	0.3146
C3	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3354	0.3561	0.3736	0.3529
C4	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3179	0.3386	0.3561	0.3354

InGaN wavelength is very sensitive to drive current. Operating at lower current is not recommended and may yield unpredictable performance. Current pulsing should be used for dimming purposes.

White Color Grouping



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

Bin		1	2	3	4
YU	Cx	0.274	0.283	0.307	0.303
	Cy	0.301	0.284	0.316	0.333
YL	Cx	0.283	0.290	0.310	0.307
	Cy	0.284	0.270	0.299	0.316
XU	Cx	0.303	0.307	0.317	0.315
	Cy	0.333	0.316	0.325	0.343
XL	Cx	0.307	0.310	0.319	0.317
	Cy	0.316	0.299	0.310	0.325
WU	Cx	0.315	0.317	0.329	0.329
	Cy	0.343	0.325	0.336	0.354
WL	Cx	0.317	0.319	0.329	0.329
	Cy	0.325	0.310	0.319	0.336
VU	Cx	0.329	0.329	0.345	0.347
	Cy	0.354	0.336	0.350	0.368
VL	Cx	0.329	0.329	0.343	0.345
	Cy	0.336	0.319	0.331	0.350
UU	Cx	0.347	0.345	0.361	0.364
	Cy	0.368	0.350	0.365	0.383
UL	Cx	0.345	0.343	0.357	0.361
	Cy	0.350	0.331	0.343	0.365

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

Luminous Intensity Group at Tj=25˚C

Brightness Group	Luminous Intensity @ IV (mcd)
Z1	4500.0..5600.0
Z2	5600.0...7150.0
AA	7150.0...9000.0
AB	9000.0...11250.0
AD	14000.0...18000.0
AE	18000.0...22400.0
AF	22400.0...28500.0
AG	28500.0...35500.0

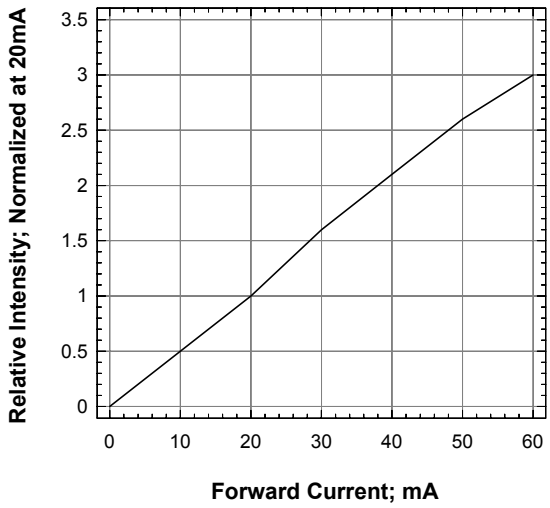
Luminous intensity is measured with an accuracy of ± 15%.

Vf Binning (Optional)

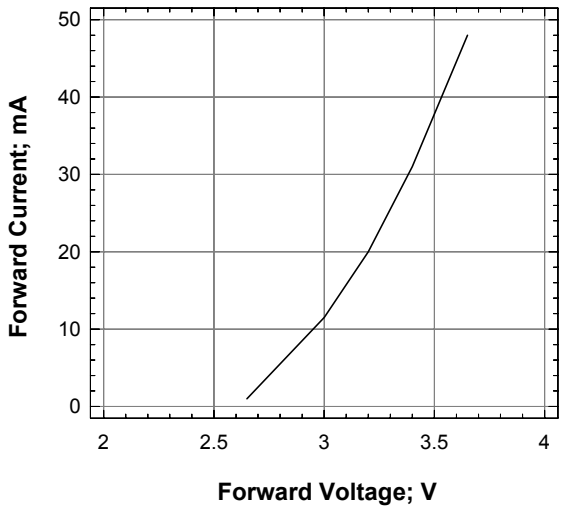
Vf Bin @ 20mA	Forward Voltage (V)
V7	2.80 ... 3.00
V8	3.00 ... 3.20
V9	3.20 ... 3.40
V10	3.40 ... 3.60
V11	3.60 ... 3.80

Forward voltage, Vf is measured with an accuracy of ± 0.1 V. Parts with the Vf binning option will be defined as L5W-Nxxxx-xxxx-x-Vx. Please consult sales and marketing for special part number to incorporate Vf binning.

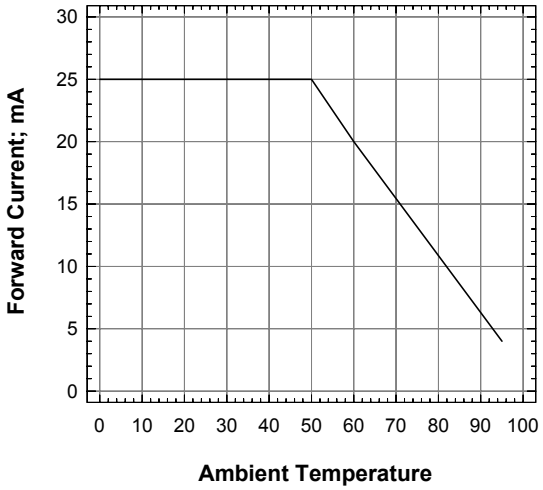
Relative Intensity Vs Forward Current



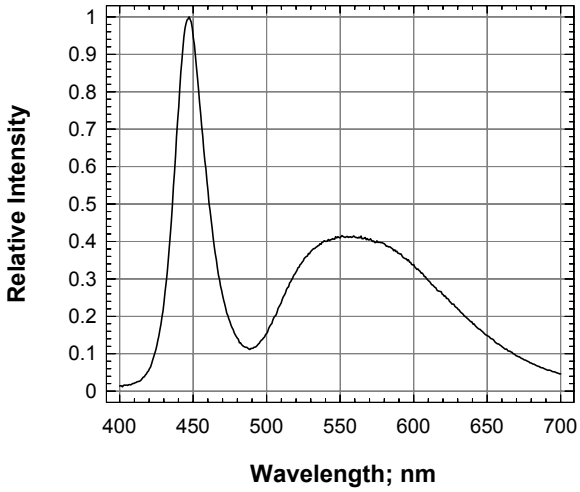
Forward Current Vs Forward Voltage



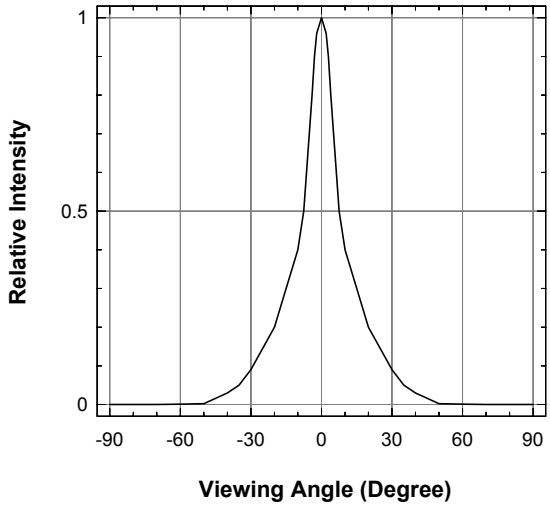
Forward Current Vs Ambient Temperature



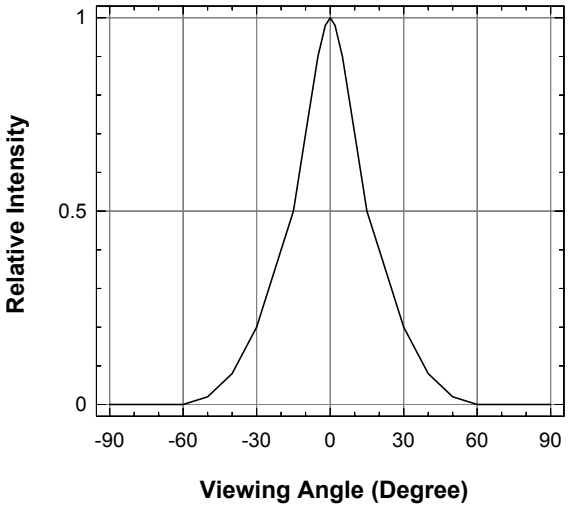
Relative Intensity Vs Wavelength



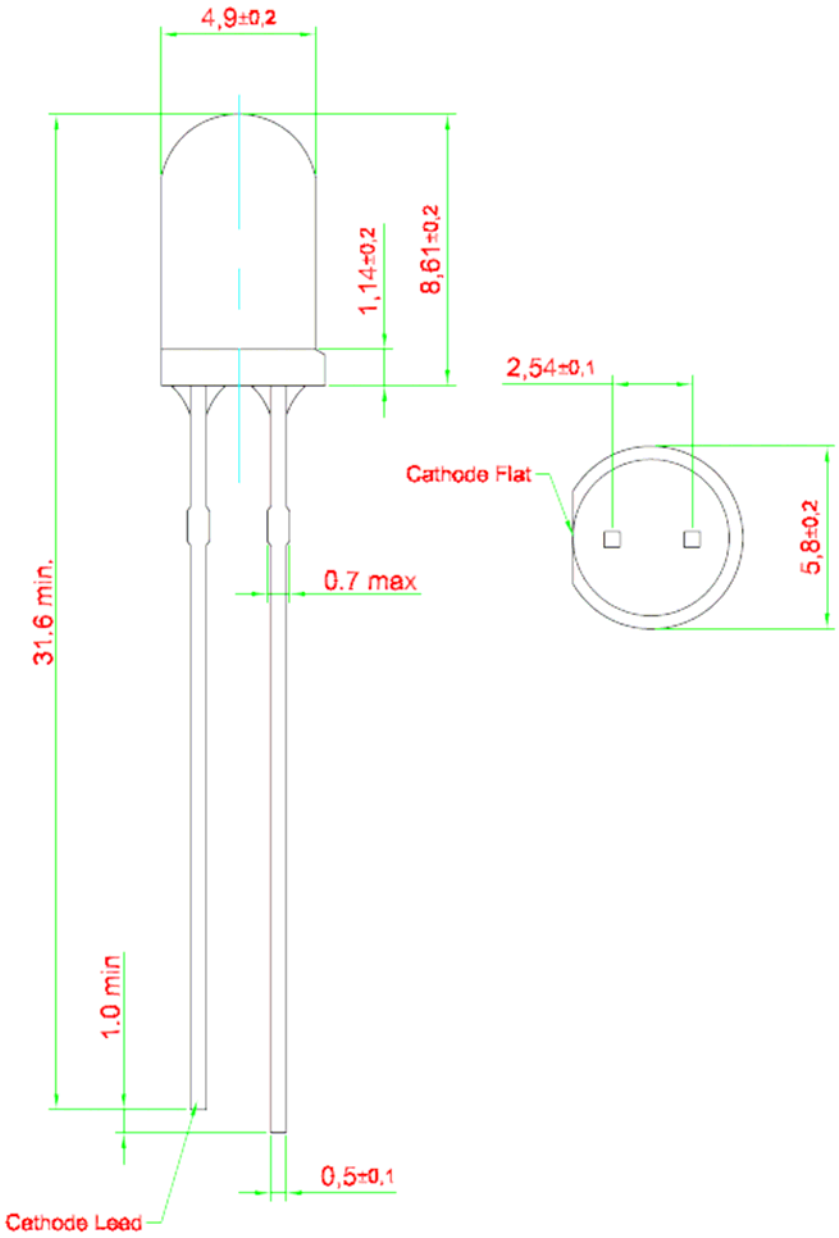
Radiation Pattern (2Θ=15°)



Radiation Pattern (2Θ=30°)

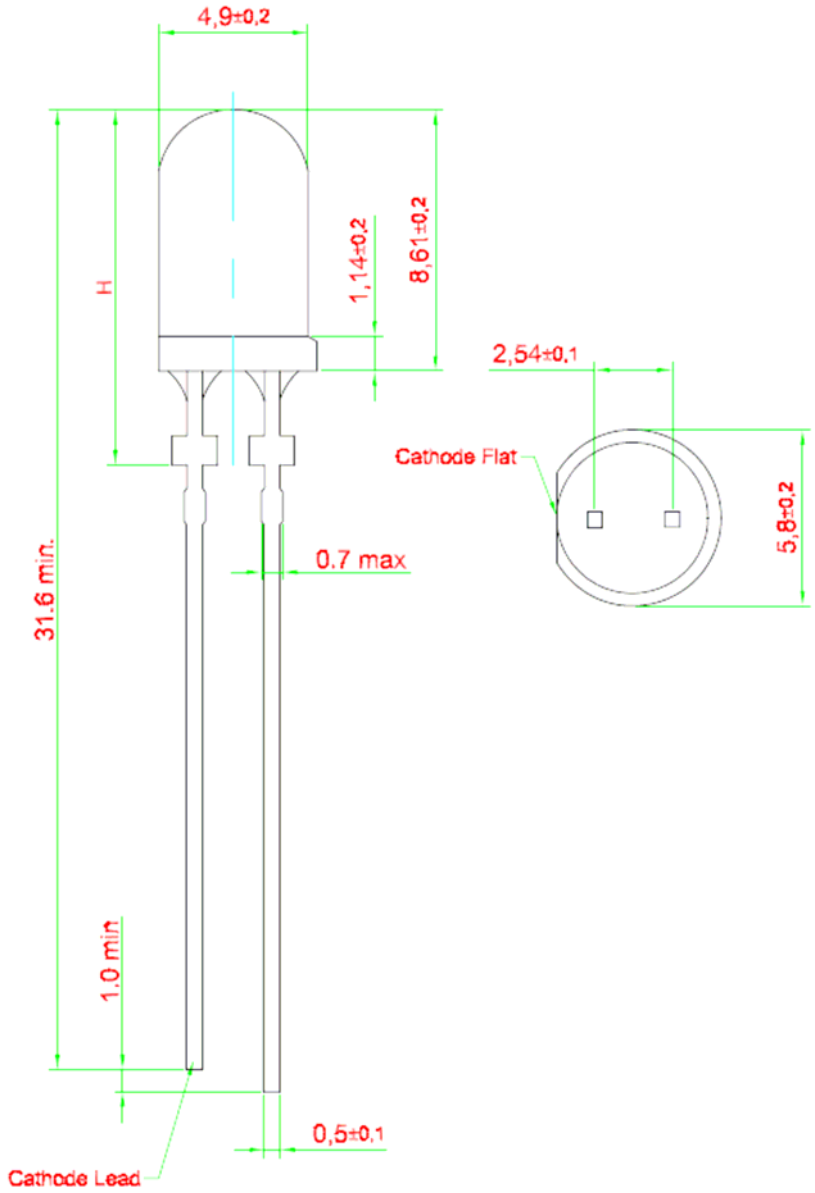


5mm Lamp • InGaN White: High Brightness Package Outlines



Epoxy meniscus may extend 1.5mm max. down the LED

5mm Lamp • InGaN White: High Brightness Package Outlines



Epoxy meniscus may extend 1.5mm max. down the l

Parts with the stand-off option will be defined as L5W-NxxxS-xxxx-1

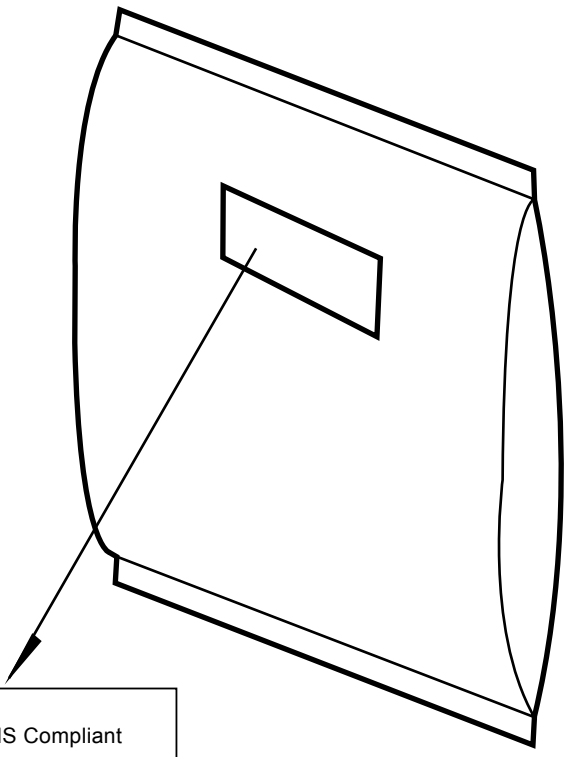
Option with stand-off - Parts with 15^{o} viewing angle; H = 12.6mm ± 0.5mm

Parts with 30^{o} viewing angle; H = 12.4mm ± 0.5mm

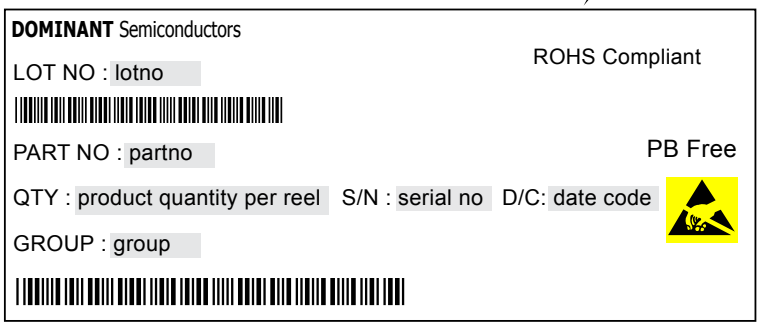
Packaging Specification

1. Loose pack of 500pcs/pack: Lxx-xxxxx-xxxx-x-x-0

	Average 1pc 5mm Lamp	1 completed pack (500pcs)
Weight (gram)	**0.29**	**150 ± 10**

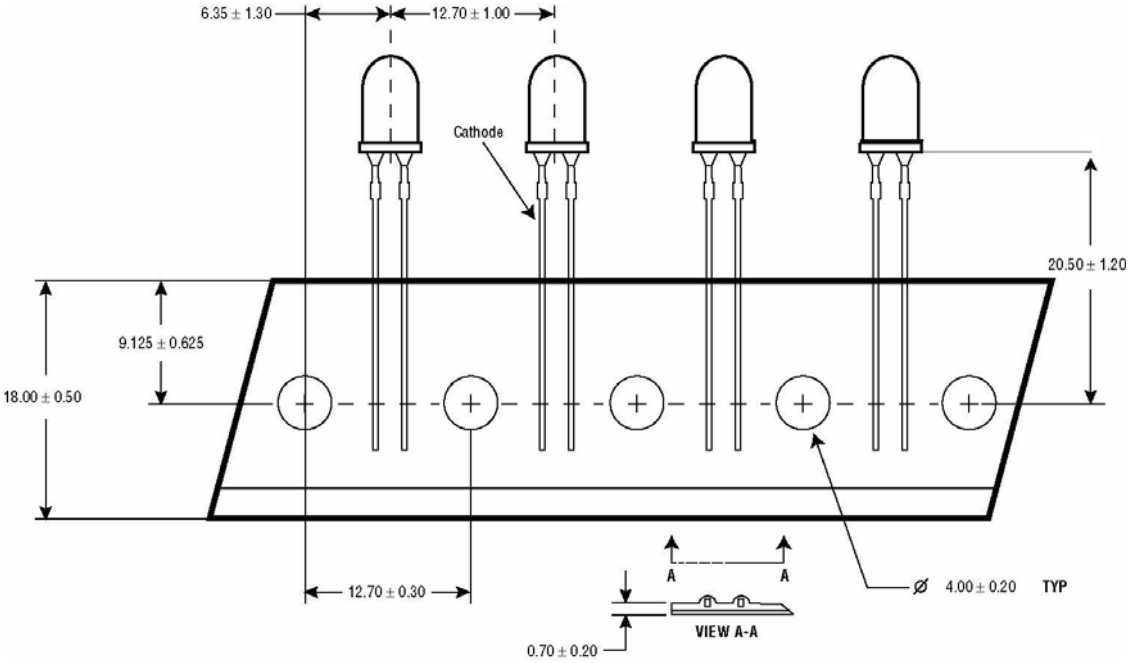


Barcode label

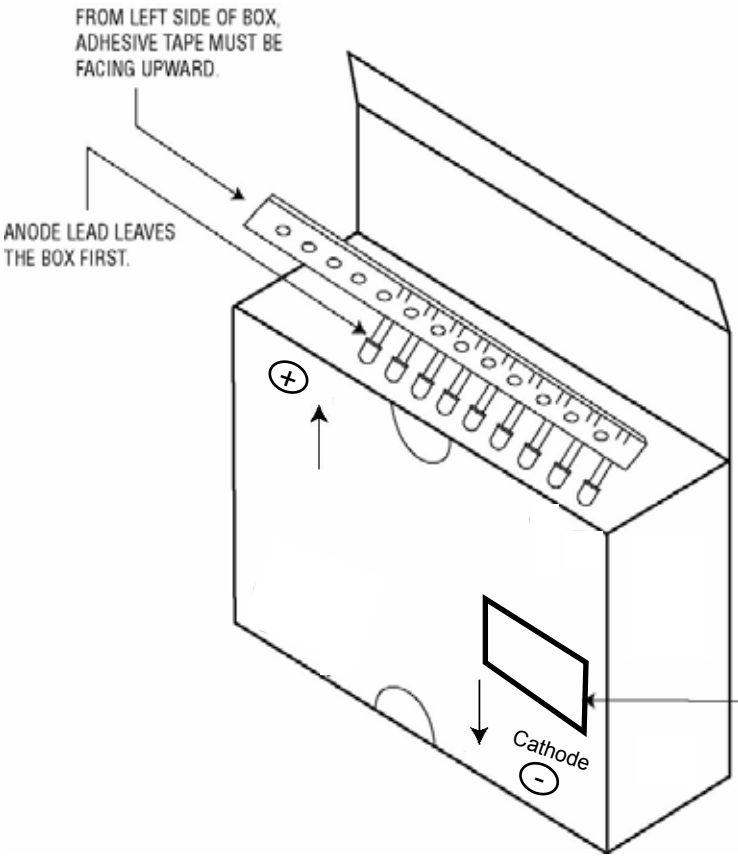


Packaging Specification

2. Ammopack: Lxx-xxxxx-xxxx-x-x-A



Average 1pc 5mm Lamp (g)	Box Dimensions (mm)	Empty Box Weight (kg)	Quantity / Box (pcs)	1 Completed Box With Units (kg)
0.29	335 x 235 x 48	0.14	2,000	0.95 ± 10



Barcode label

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ROHS Compliant

LOT NO : lotno

PART NO : partno

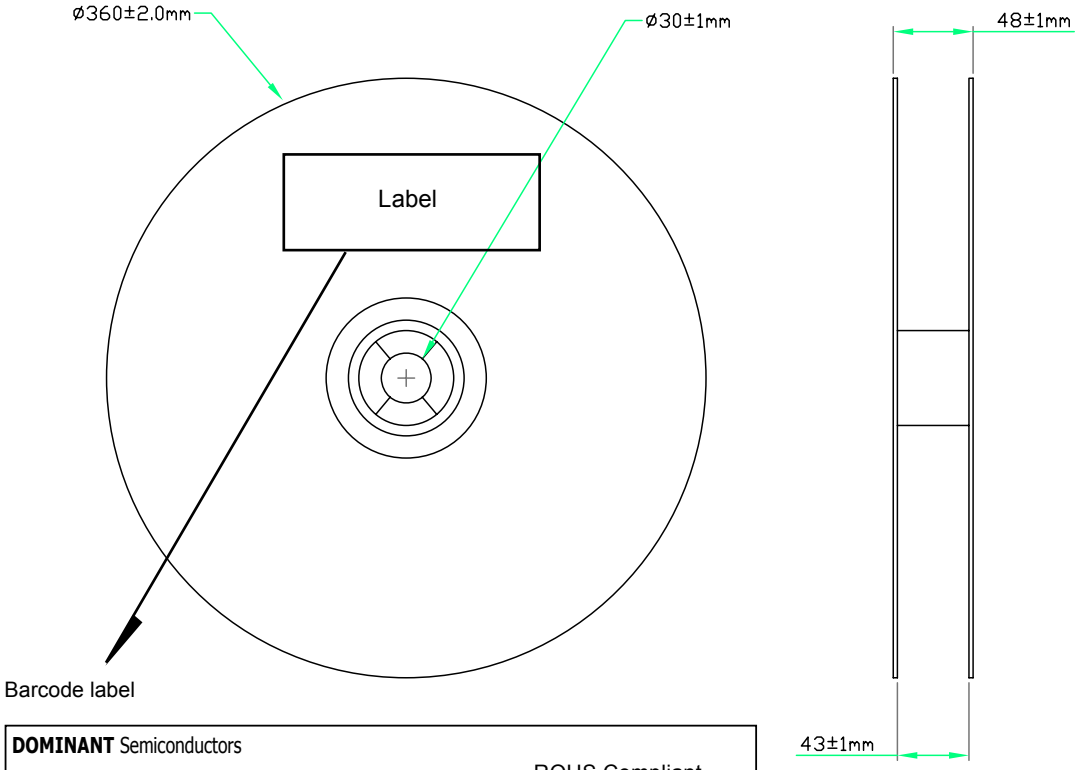
PB Free

QTY : product quantity per reel S/N : serial no D/C: date code

GROUP : group

Packaging Specification

3. Reel: Lxx-xxxxx-xxxx-x-x-T



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ROHS Compliant

LOT NO : lotno

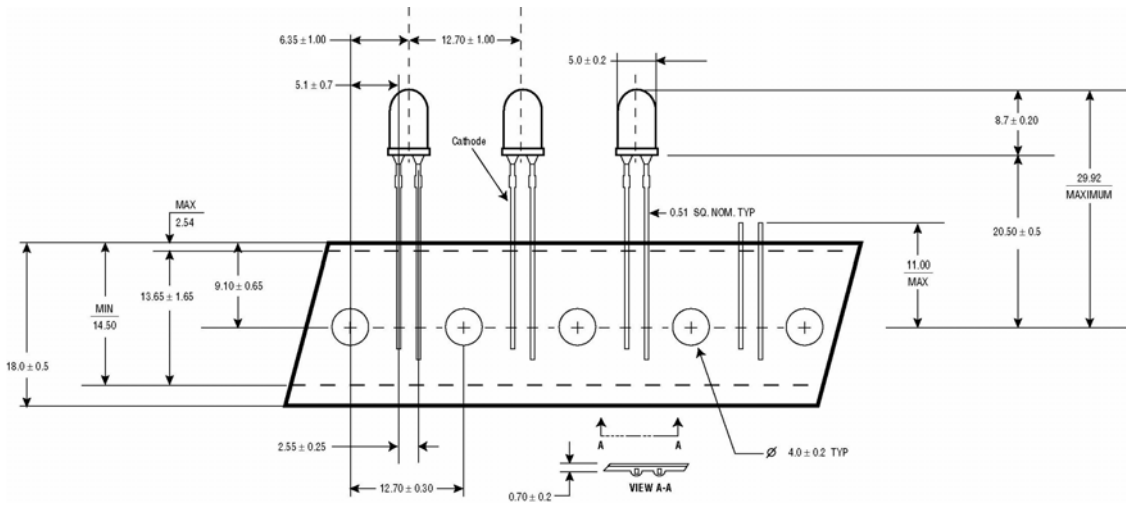
PART NO : partno

PB Free

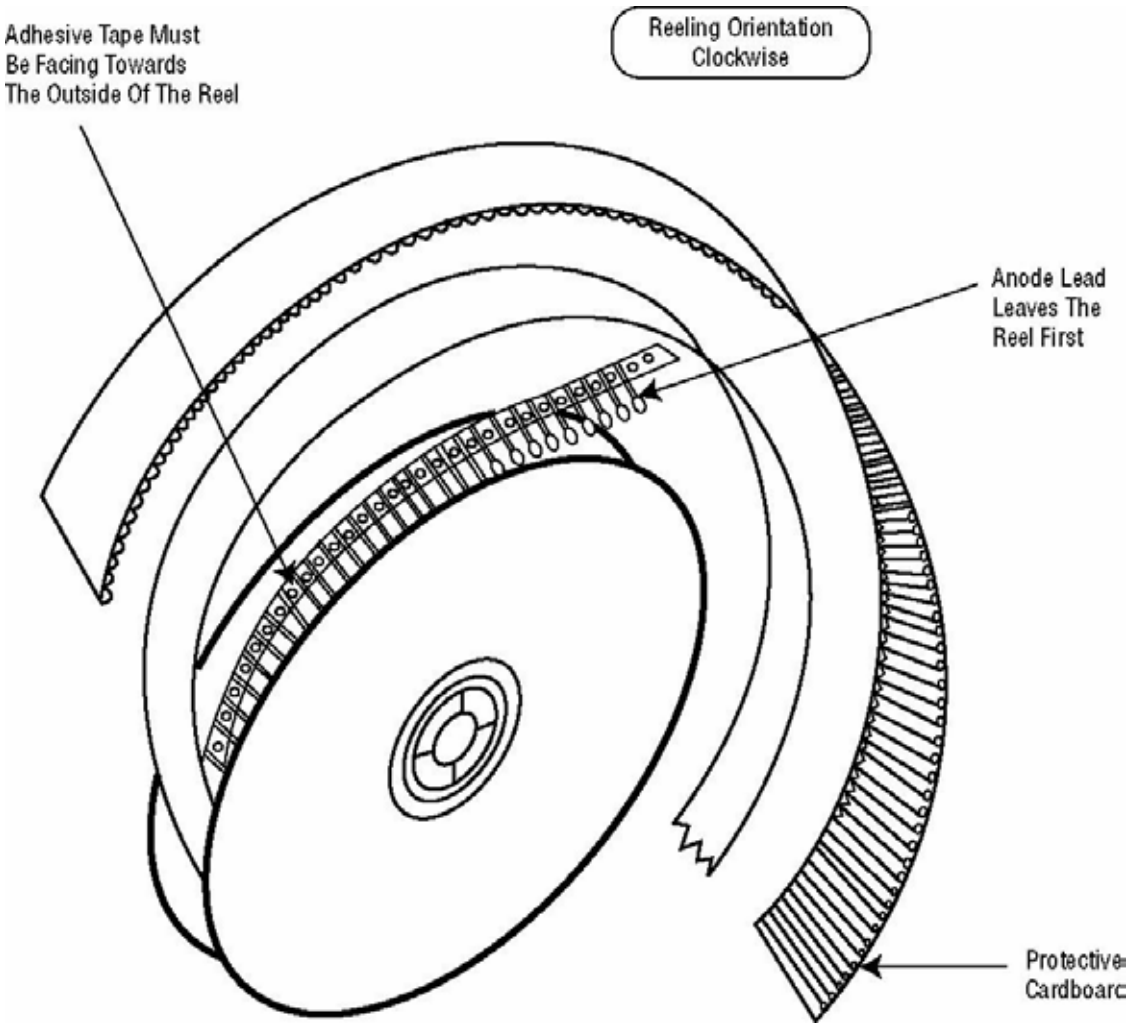
QTY : product quantity per reel S/N : serial no D/C: date code

GROUP : group

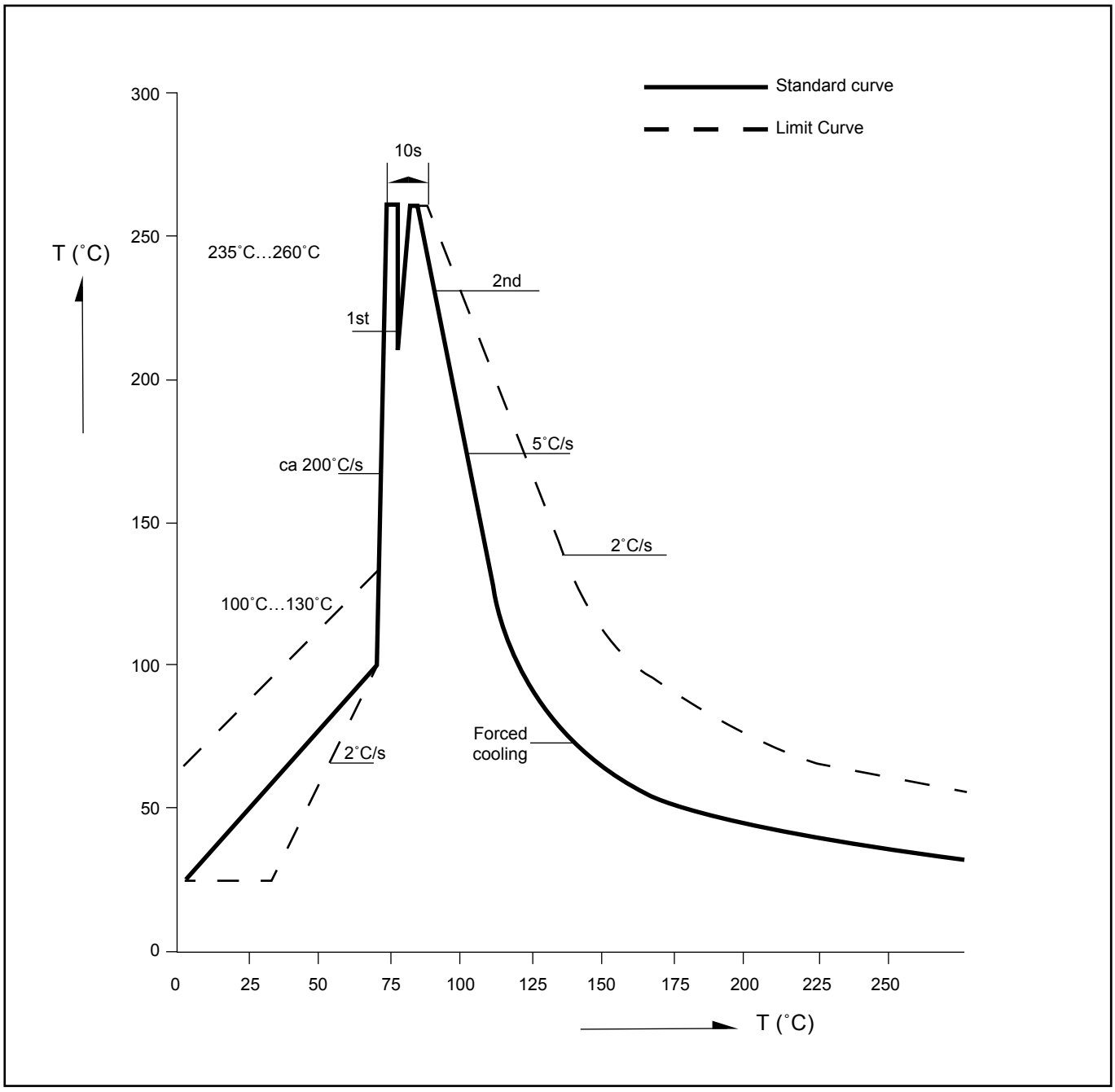
Average 1pc 5mm Lamp (g)	Empty Reel Weight (kg)	Quantity / Reel (pcs)	1 Completed Reel (kg)
0.29	0.39	1,300	**0.95 ± 10**



Packaging Specification



Recommended TTW Soldering Profile (acc. to CECC 00802)



Revision History

Page	Subjects	Date of Modification
-	Initial Release	12 Jun 2009

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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