

### **Lamp Type LED - 3mm**

This 3mm LED offer superior light output for excellent readability in sunlight. These lamps are offering stable light output over long period of time and high-moisture-resistance performance in lighting and illumination applications due to the optical-grade epoxy.

### **Features:**

- > High brightness LED lamp.
- > Superior resistance to moisture
- > Suitable for TTW soldering.

### **Applications:**

- > Indicators
- > Outdoor displays/signs



### Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 20mA IV (mcd)		
			Min.	Typ.	Max.
L3W-L4500-Z1AB-1	White	45	4500.00	7150.00	11250.00
L3W-L4500-Z2AC-1	White	45	5600.00	9000.00	14000.00

**NOTE**

- Luminous intensity is measured with an accuracy of ± 15%.
- 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			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
L3W-L4500	2.8	3.2	3.6	5

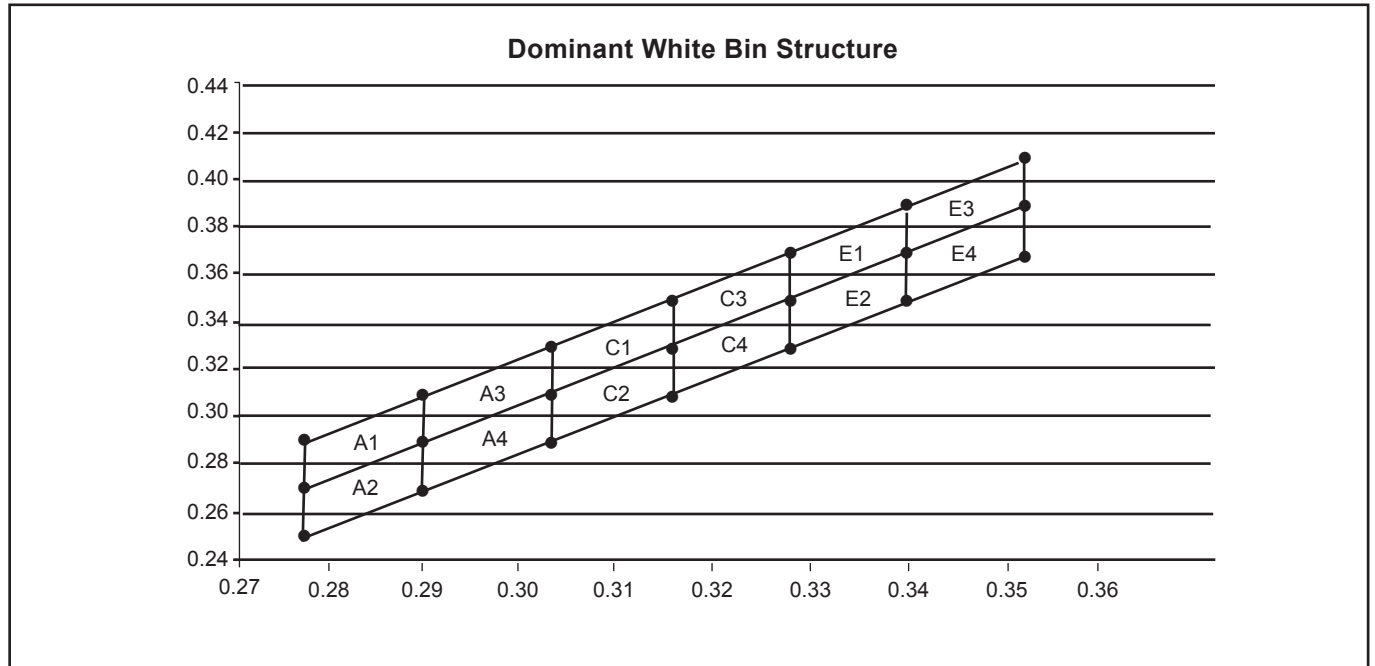
Forward voltages are measure using a current pulse of 1 ms and with an accuracy of ± 0.1V.

### Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	25	mA
Peak pulse current; (tp ≤ 100µs, 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 ... +85	°C
Storage temperature	-40 ... +85	°C
Power dissipation (at room temperature)	95	mW

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**

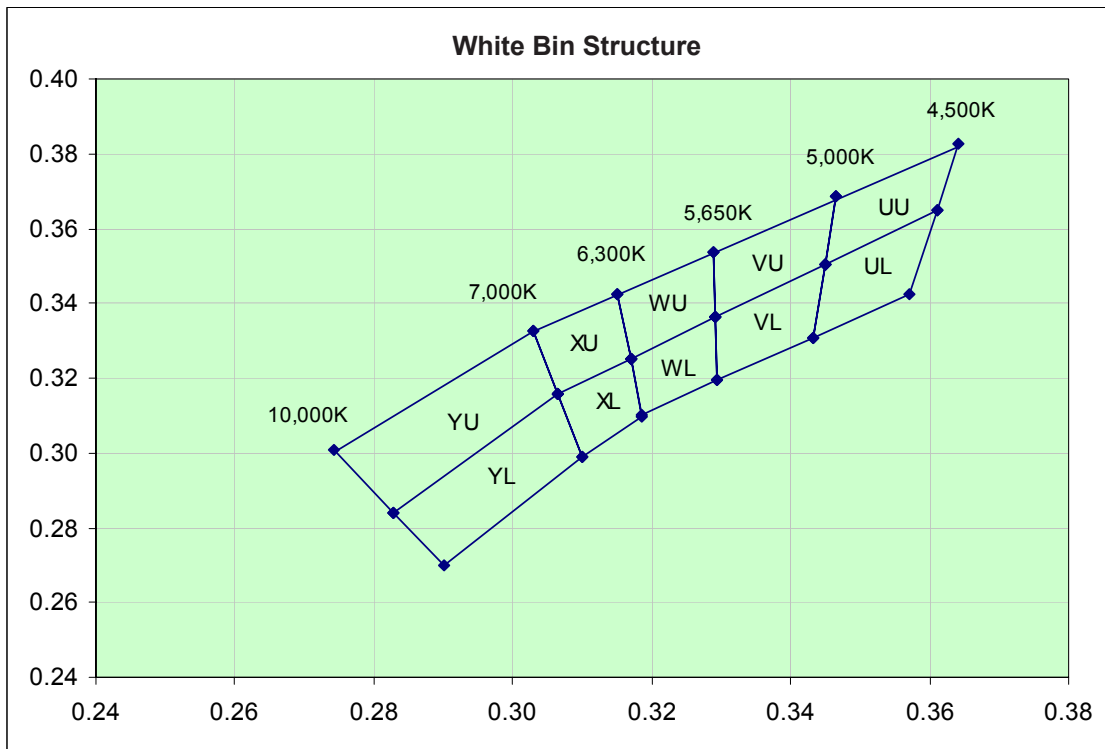


Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

Bin		1	2	3	4
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
E1	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3561	0.3768	0.3943	0.3736
E2	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3386	0.3593	0.3768	0.3561
E3	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3768	0.3975	0.4150	0.3943
E4	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3593	0.3800	0.3975	0.3768

Dominant color coordinate is measured with an accuracy of  $\pm 0.01$ .

**White Color Grouping**



Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

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  $\pm 0.01$ .

**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
AC	11250.0...14000.0

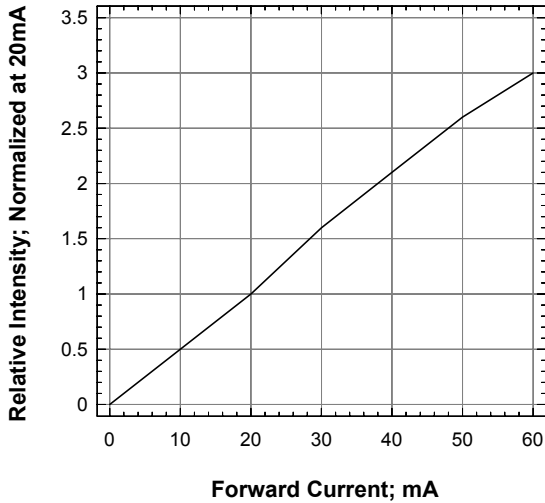
Luminous intensity is measured with an accuracy of ± 15%.

**Vf Binning (Optional)**

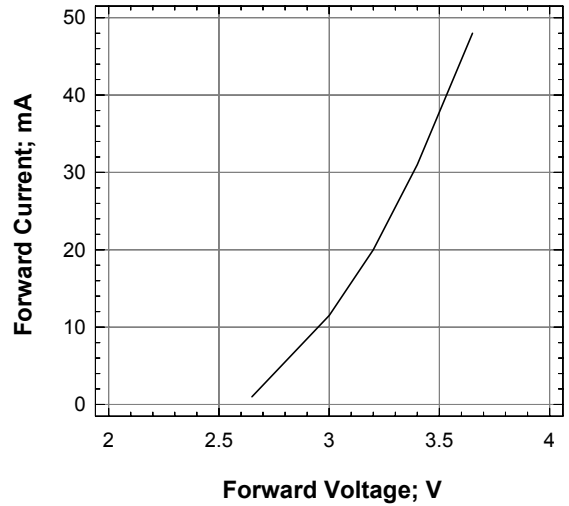
Vf Bin @ 20mA	Forward Voltage (V)
V7	2.80 ... 3.00
V8	3.00 ... 3.20
V9	3.20 ... 3.40
V10	3.40 ... 3.60

Forward voltage, Vf is measured with an accuracy of ± 0.1 V. Parts with the Vf binning option will be defined as L3W-Lxxxx-xxxx-x-Vx. Please consult sales and marketing for special part number to incorporate Vf binning.

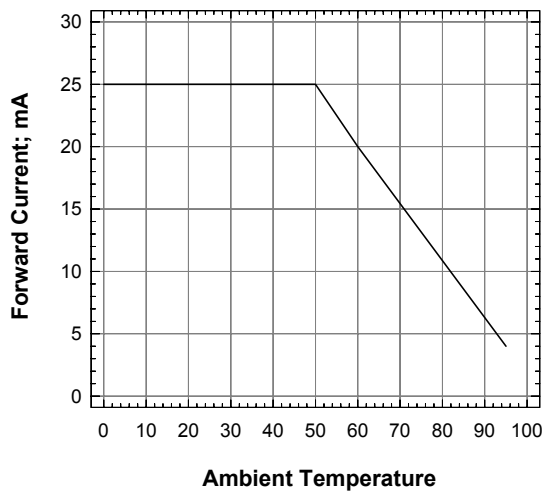
**Relative Intensity Vs Forward Current**



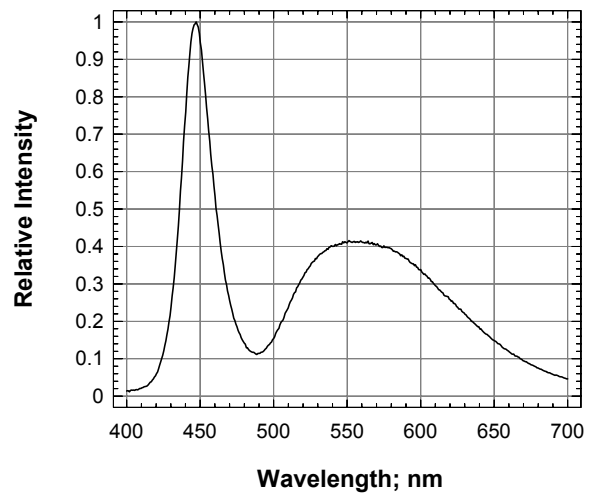
**Forward Current Vs Forward Voltage**



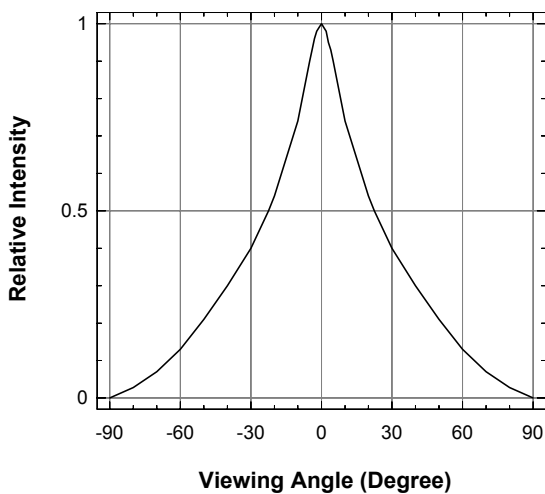
**Forward Current Vs Ambient Temperature**



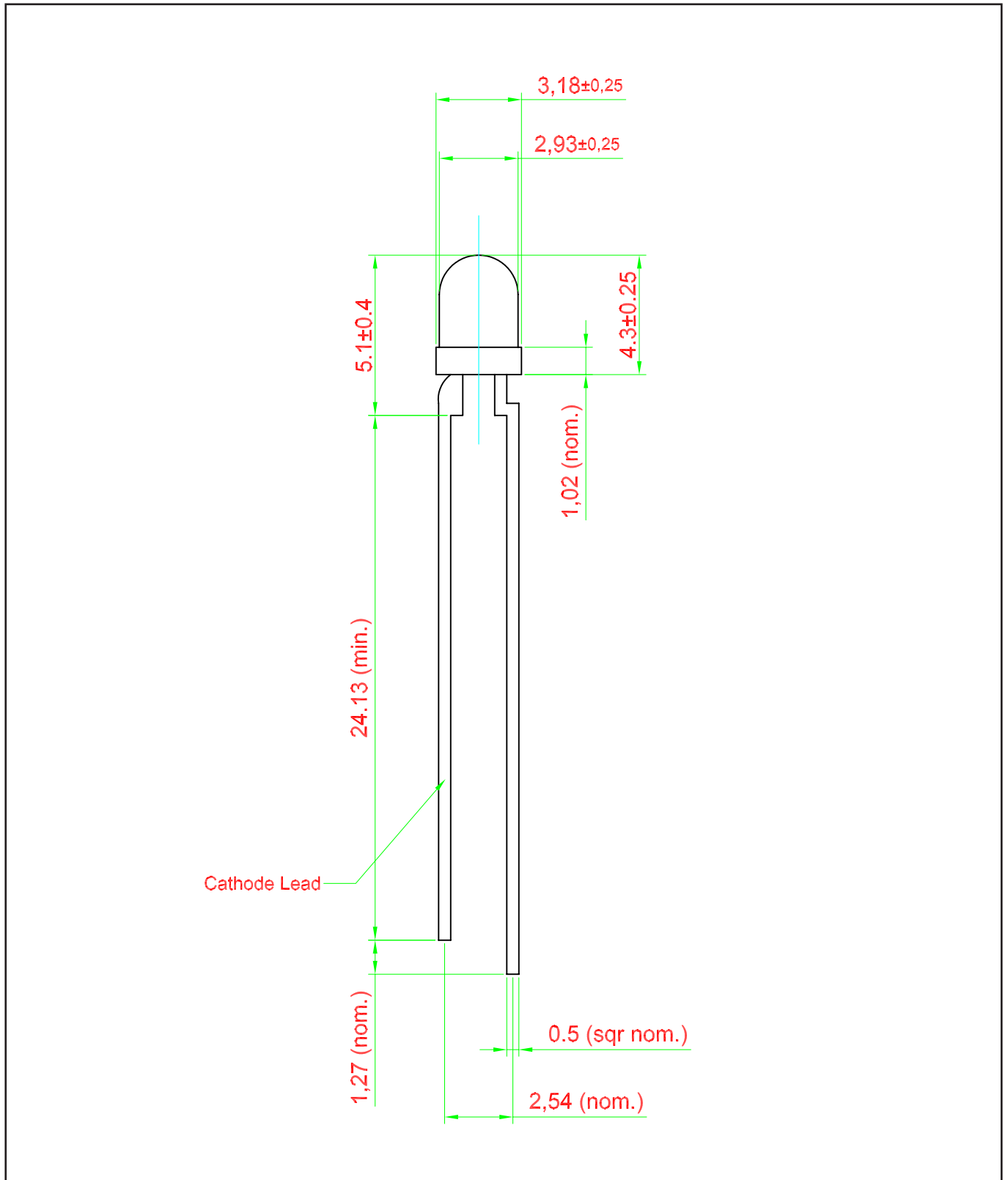
**Relative Intensity Vs Wavelength**



**Radiation Pattern (2Θ=45°)**



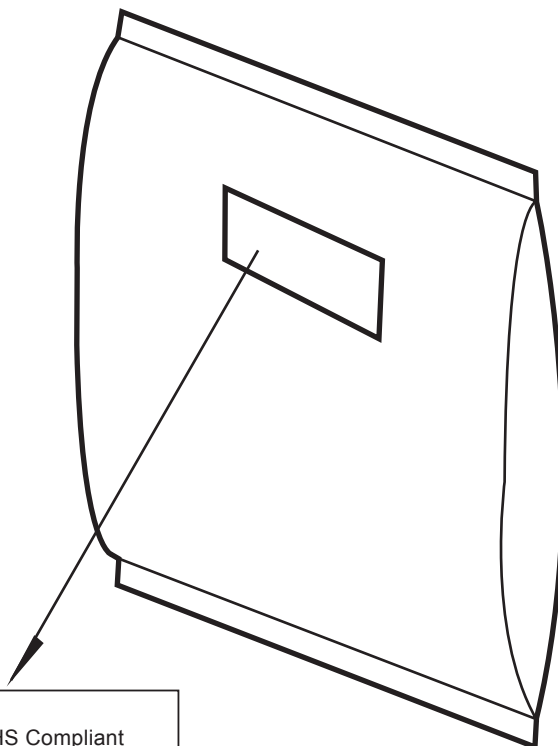
### 3mm Lamp • InGaN White Package Outlines






**Packaging Specification**

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

	Average 1pc 3mm Lamp	1 completed pack (500pcs)
<b>Weight (gram)</b>	<b>0.29</b>	<b>70 ± 10</b>



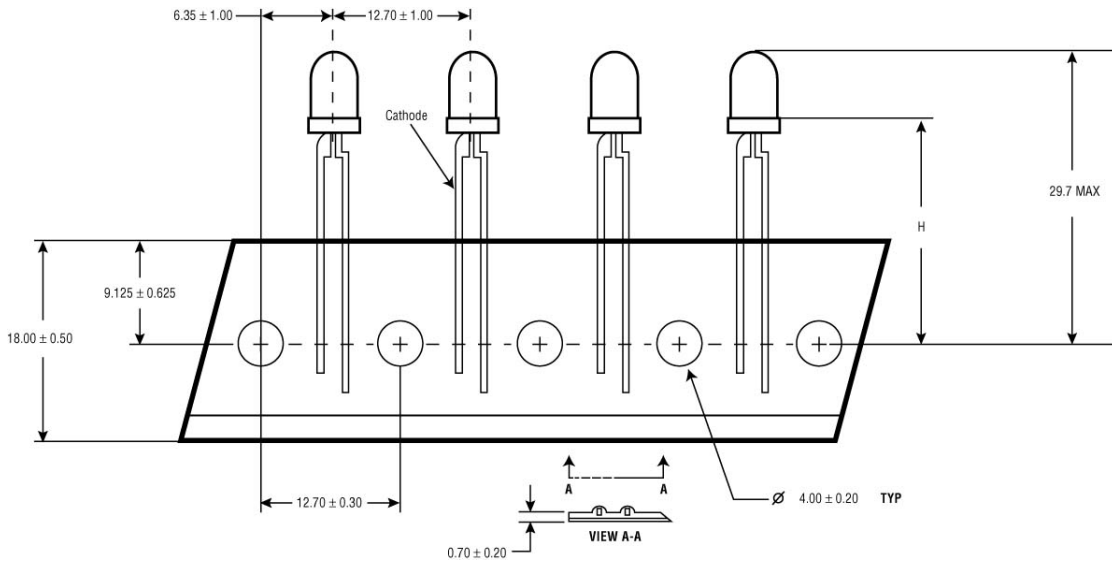
Barcode label

<b>DOMINANT</b>		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		
		

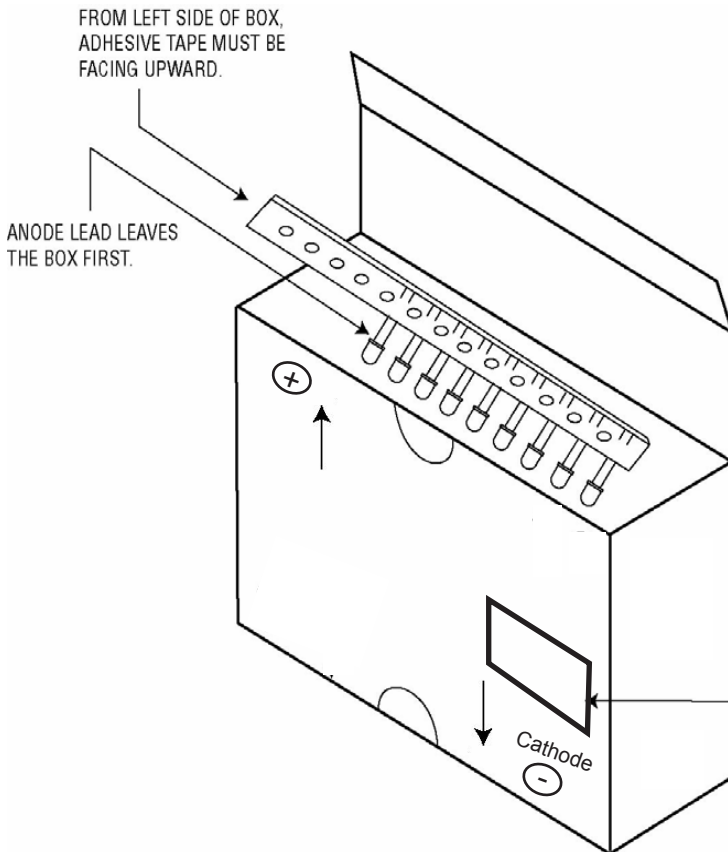


**Packaging Specification**

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



Average 1pc 3mm Lamp (g)	Box Dimensions (mm)	Empty Box Weight (kg)	Quantity / Box (pcs)	1 Completed Box With Units (kg)
0.12	335 x 135 x 48	0.16	1,800	0.85 ± 0.1



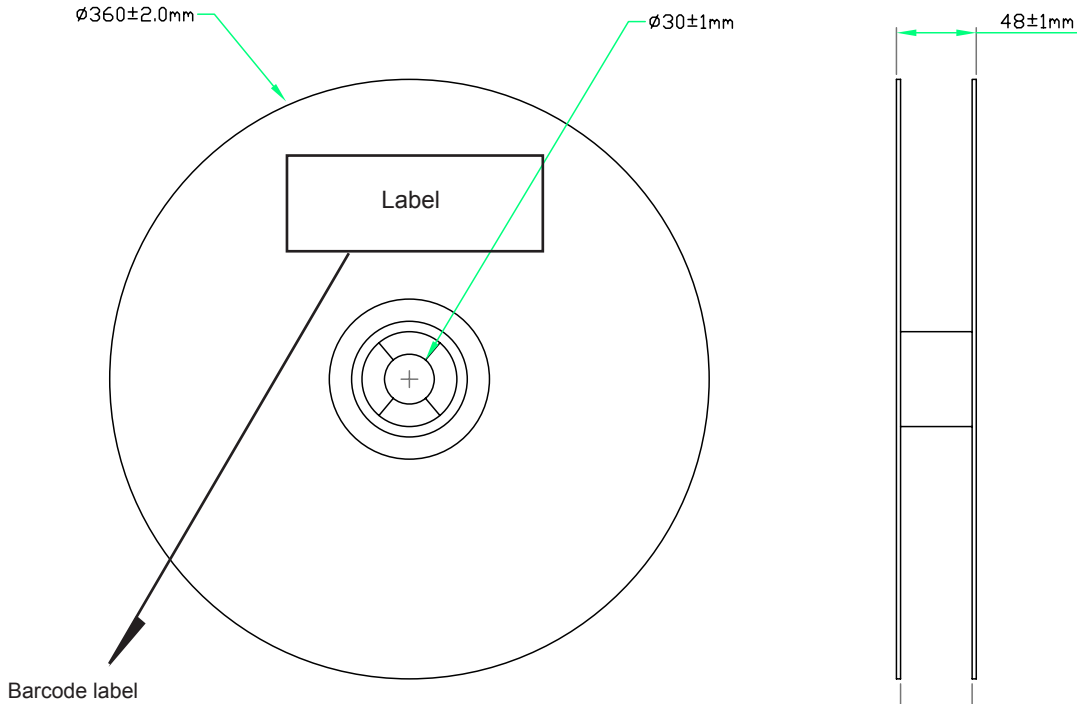
Barcode label




<b>DOMINANT</b>		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		

LABEL ON THIS SIDE OF BOX

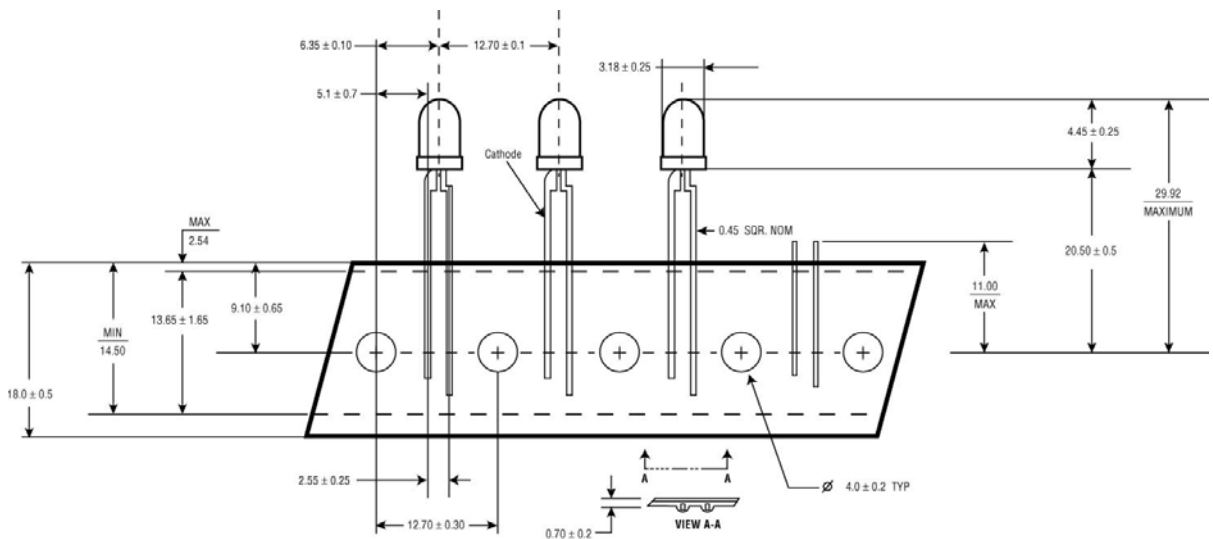
**Packaging Specification**

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



<b>DOMINANT</b>	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 3mm Lamp (g)	Empty Reel Weight (kg)	Quantity / Reel (pcs)	1 Completed Reel (kg)
0.12	0.39	1,800	0.75 ± 0.1



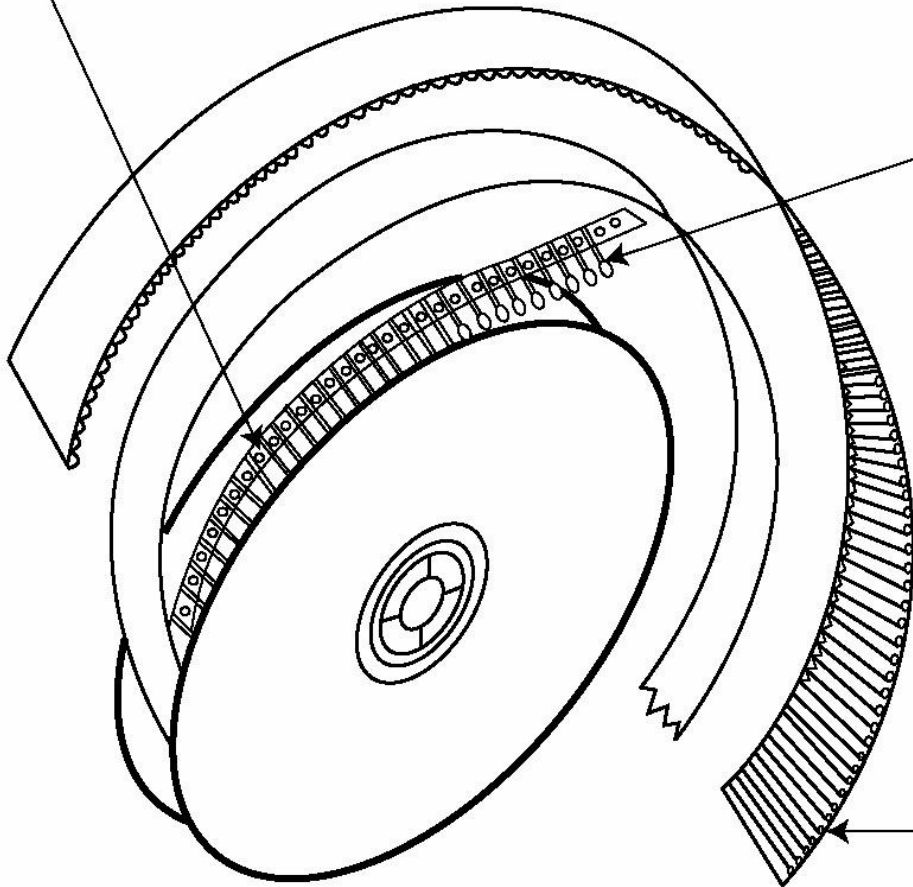
**Packaging Specification**

Adhesive Tape Must  
Be Facing Towards  
The Outside Of The Reel

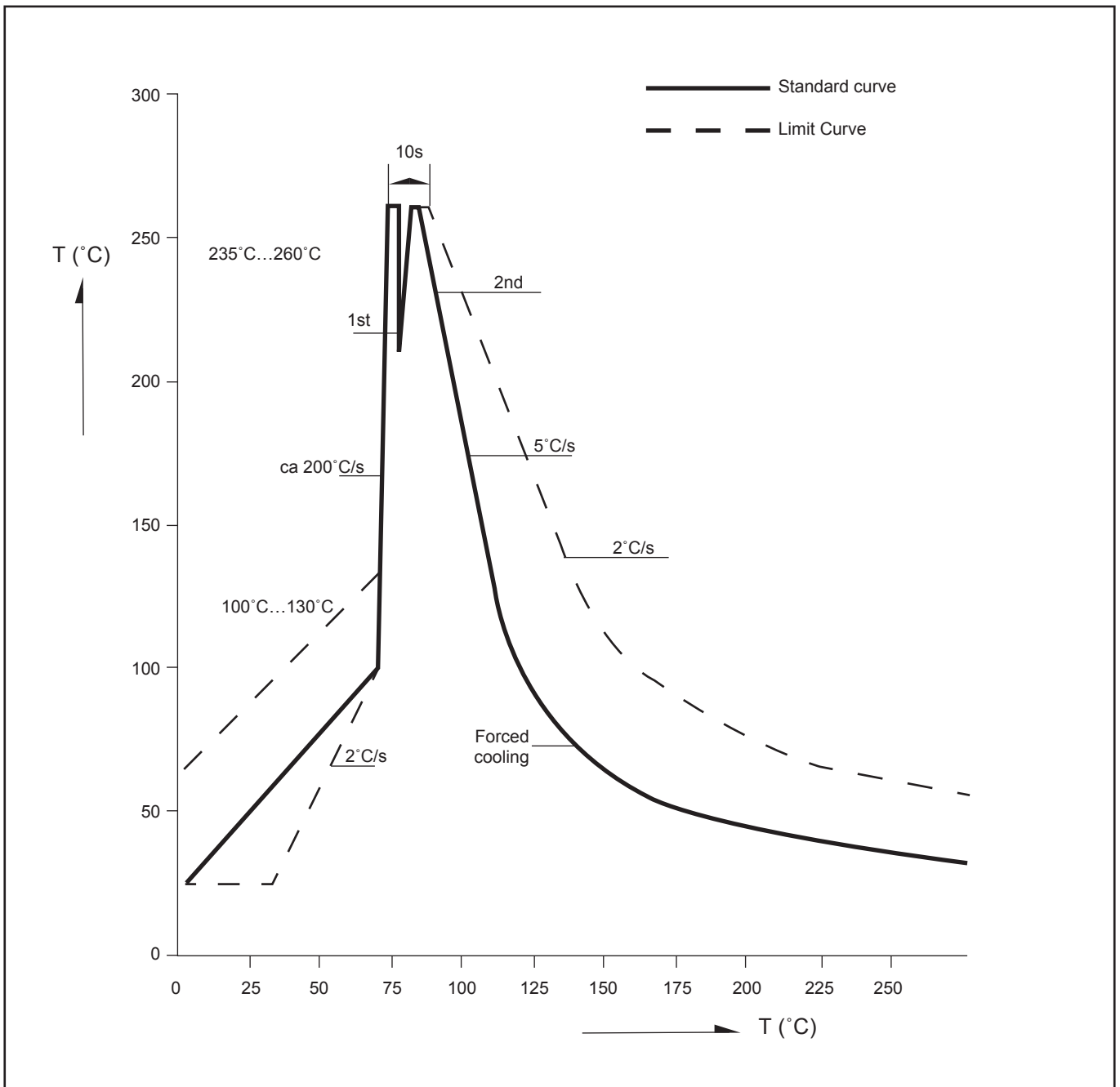
Reeling Orientation  
Clockwise

Anode Lead  
Leaves The  
Reel First

Protective  
Cardboard



**Recommended TTW Soldering Profile (acc. to CECC 00802)**





## 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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