

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; 30°
- > 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 @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
L5S-C3000-UV2-1	Super Red, 627nm	30	450.0	715.0	1125.0
L5R-C60E0-ST2-1	Red, 625nm	60	180.0	285.0	450.0
L5A-C3000-VW2-1	Amber, 615nm	30	715.0	1125.0	1800.0
L5Y-C3000-VW2-1	Yellow, 588nm	30	715.0	1125.0	1800.0
L5Y-C60E0-R2T1-1	Yellow, 588nm	60	140.0	285.0	355.0
L5G-C3000-UV2-1	Green, 570nm	30	450.0	715.0	1125.0

NOTE

- Luminous intensity is measured with an accuracy of $\pm 15\%$.
- 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	Min. (V)	Vf @ If = 20mA		Vr @ Ir = 10uA Min. (V)
		Typ. (V)	Max. (V)	
L5X-Cxxxx	1.8	2.0	2.6	12

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (tp $\leq$ 10 μ s, Duty cycle = 0.10)	200	mA
Reverse voltage ; Ir (max) = 10 μ A.	12	V
ESD threshold (HBM)	2000	V
LED junction temperature	120	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	130	mW
Thermal resistance junction to solder, Rth JS	240	K/W

Characteristics

	Symbol		Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 20\text{mA}$; $0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	$TC_{\lambda_{\text{dom}}}$	L5S/L5R	0.02	nm / K
		L5A	0.04	nm / K
		L5Y	0.05	nm / K
		L5G	0.07	nm / K
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}$; $0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_V	L5S/L5R	-3.7	mV / K
		L5A	-1.0	mV / K
		L5Y	-1.2	mV / K
		L5G	-1.8	mV / K
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}$; $0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{I_V}	L5S/L5R	-0.34	% / K
		L5A	-0.55	% / K
		L5Y	-0.60	% / K
		L5G	-0.75	% / K

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

Color	Group	Wavelength distribution (nm)
L5S; Super Red	Full	625 - 640
L5R; Red	Full	620 - 630
L5A; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
L5Y; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594
L5G; Green	Full	564.5 - 576.5
	W	564.5 - 567.5
	X	567.5 - 570.5
	Y	570.5 - 573.5
	Z	573.5 - 576.5

Dominant wavelength is measured with an accuracy of $\pm 1\text{ nm}$.

Brightness Group	Luminous Intensity @ IV (mcd)
R2	140.0...180.0
S1	180.0...224.0
S2	224.0...285.0
T1	285.0...355.0
T2	355.0...450.0
U1	450.0...560.0
U2	560.0...715.0
V1	715.0...900.0
V2	900.0...1125.0
W1	1125.0...1400.0
W2	1400.0...1800.0

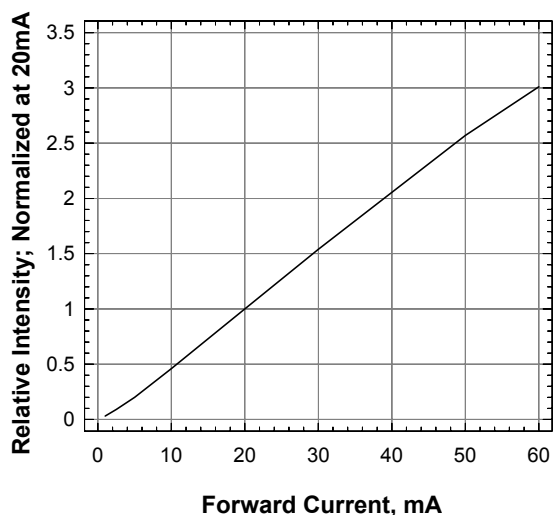
Luminous intensity is measured with an accuracy of $\pm 15\%$.

Vf Binning (Optional)

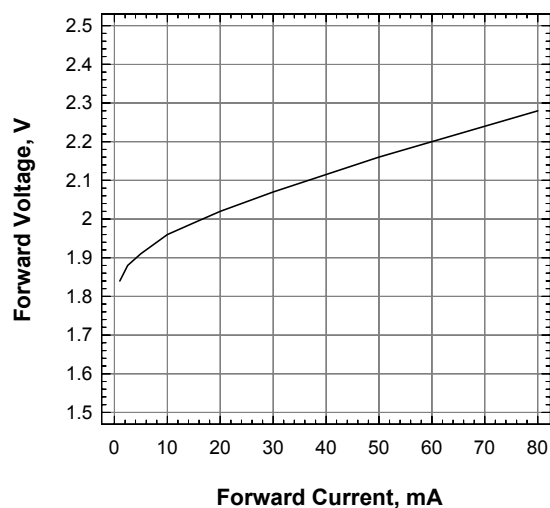
Vf Bin @ 20mA	Forward Voltage (V)
V2	1.80 ... 2.00
V3	2.00 ... 2.20
V4	2.20 ... 2.40
V5	2.40 ... 2.60

Forward voltage, Vf is measured with an accuracy of ± 0.1 V. Parts with the Vf binning option will be defined as L5x-Cxxxx-xxxx-x-Vx. Please consult sales and marketing for special part number to incorporate Vf binning.

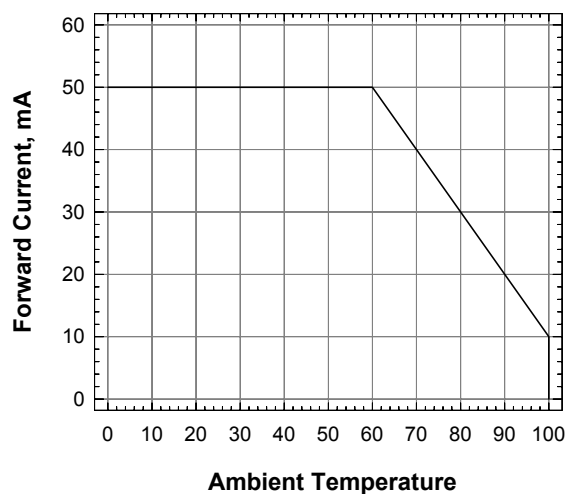
Relative Luminous Intensity Vs Forward Current



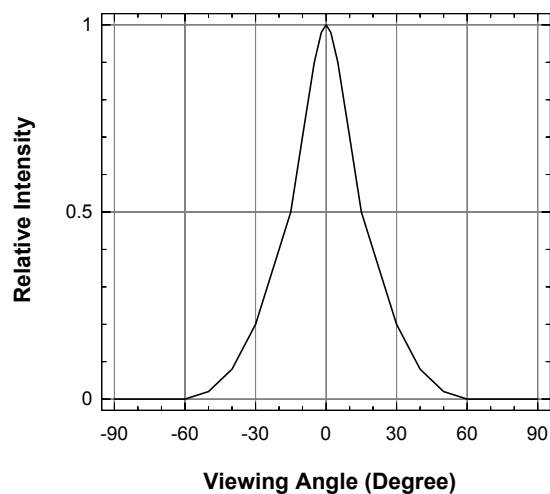
Forward Current Vs Forward Voltage



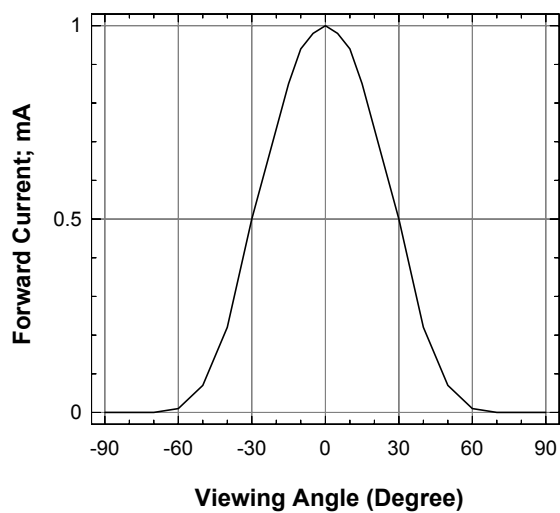
Maximum Current Vs Temperature



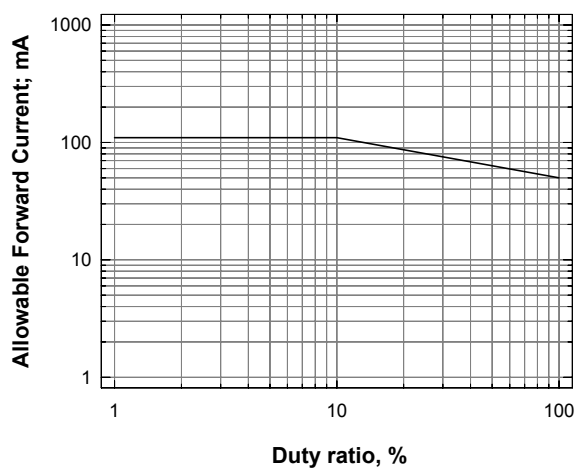
Radiation Pattern ($2\theta=30^\circ$)



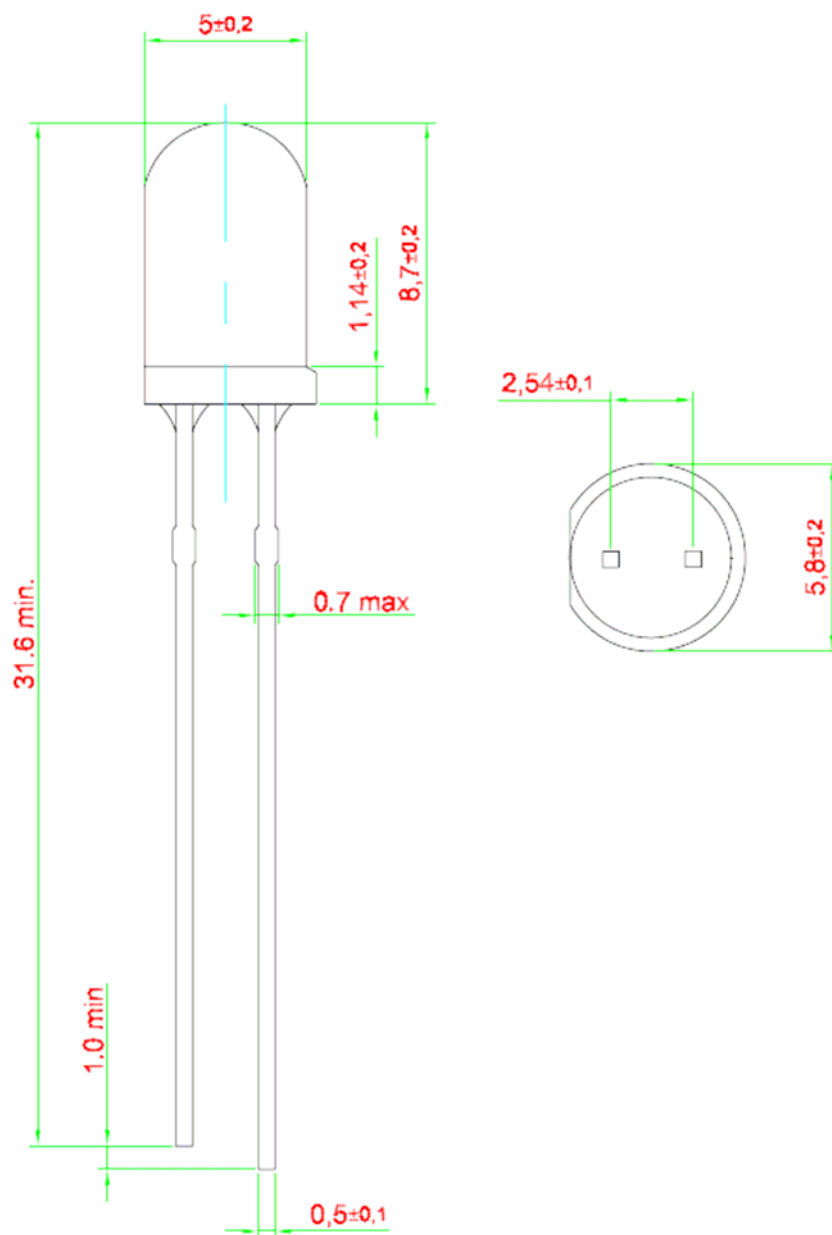
Radiation Pattern ($2\theta=60^\circ$)



**Allowable Forward Current VS Duty Ratio
 (Ta=25 Deg C, tp<10uS)**



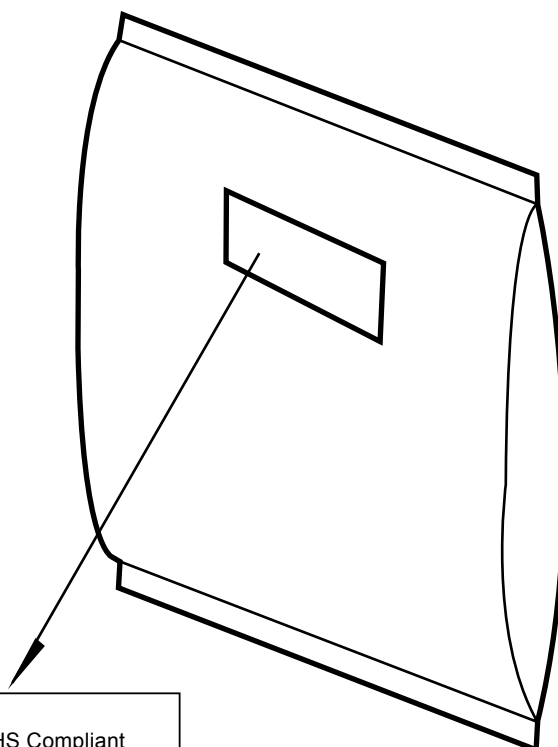
5mm Lamp • AllnGaP : Package Outlines



Packaging Specification

1. Loose pack of 500pcs/pack: L5x-Cxxxx-xxxx-x-x-0

	Average 1pc 5mm Lamp	1 completed pack (500pcs)
Weight (gram)	0.29	155 ± 10

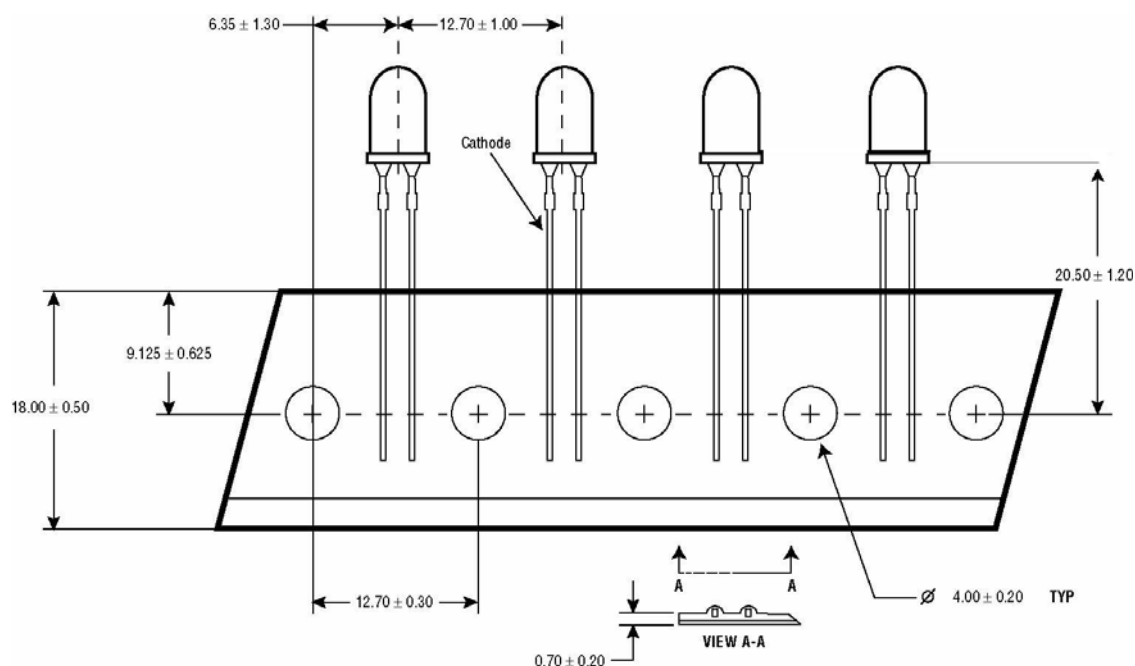


Barcode label

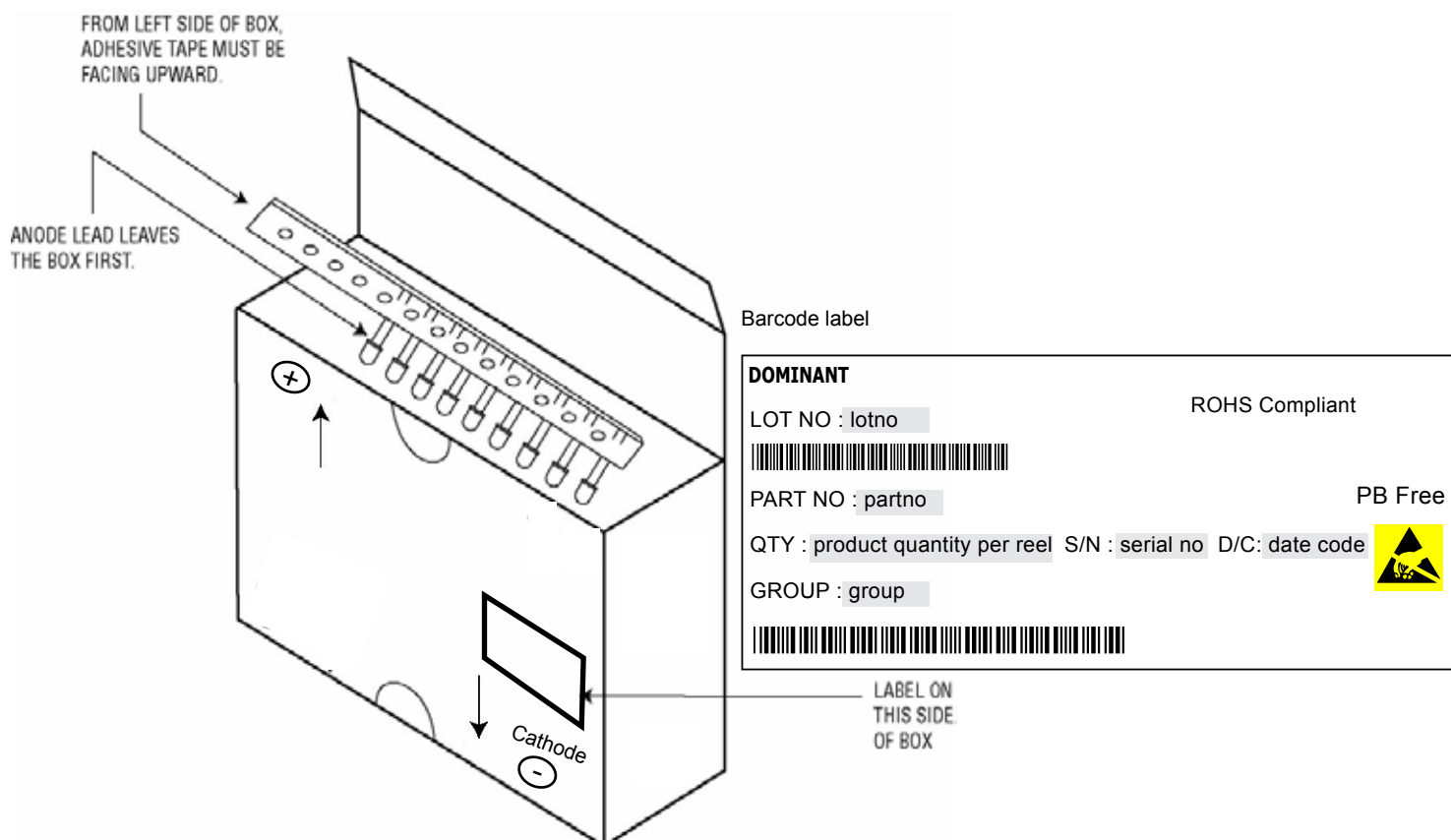
DOMINANT		ROHS Compliant
LOT NO : lotno		
		
PART NO : partno	PB Free	
QTY : product quantity per reel	S/N : serial no	D/C: date code
GROUP : group		
		

Packaging Specification

2. Ammopack: L5x-Cxxxx-xxxx-x-x-A

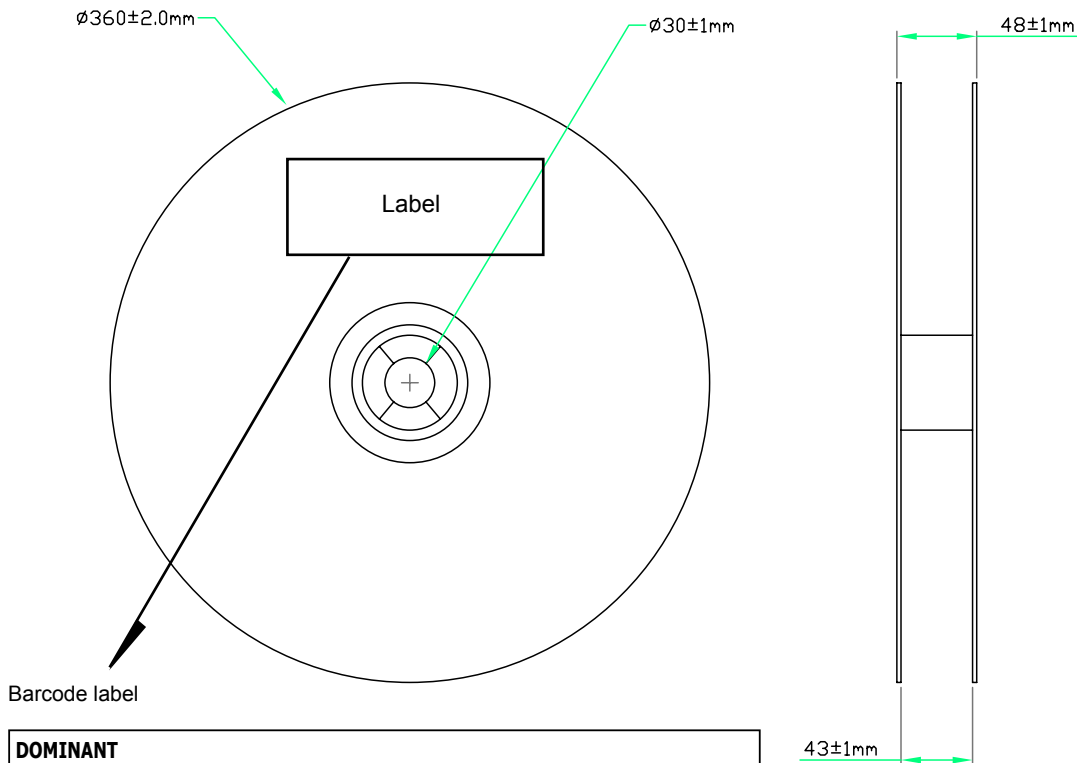


Average 1pc 5mm Lamp (g)	Box Dimensions (mm)	Empty Box Weight (kg)	Quantity / Box (pcs)	1 Completed Box With Units (kg)
0.29	335 x 235 x 48	0.14	2,000	0.95 ± 10



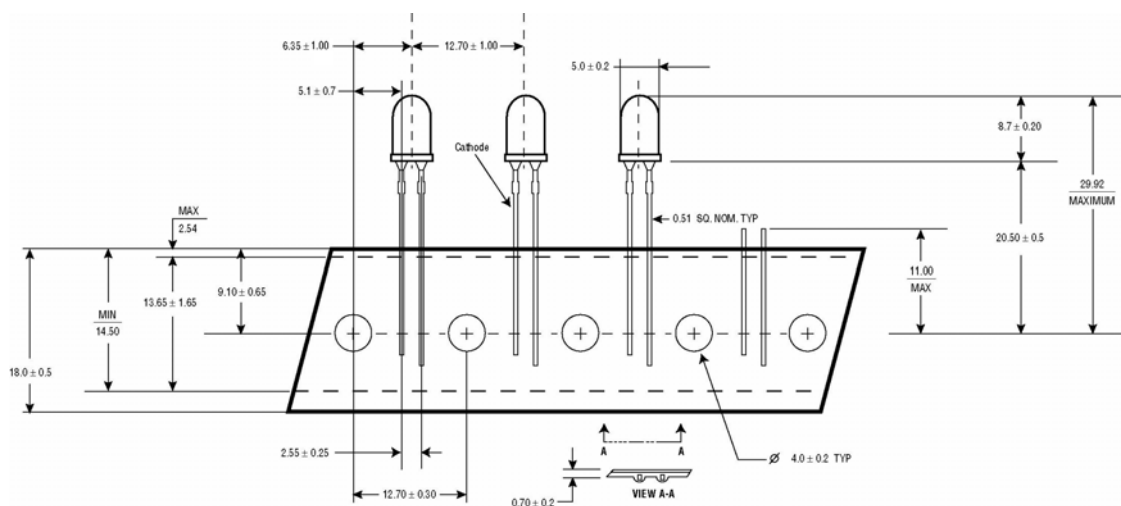
Packaging Specification

3. Reel: L5x-Cxxxx-xxxx-x-x-T



DOMINANT		ROHS Compliant
LOT NO : lotno		
PART NO : partno		
QTY : product quantity per reel		PB Free
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



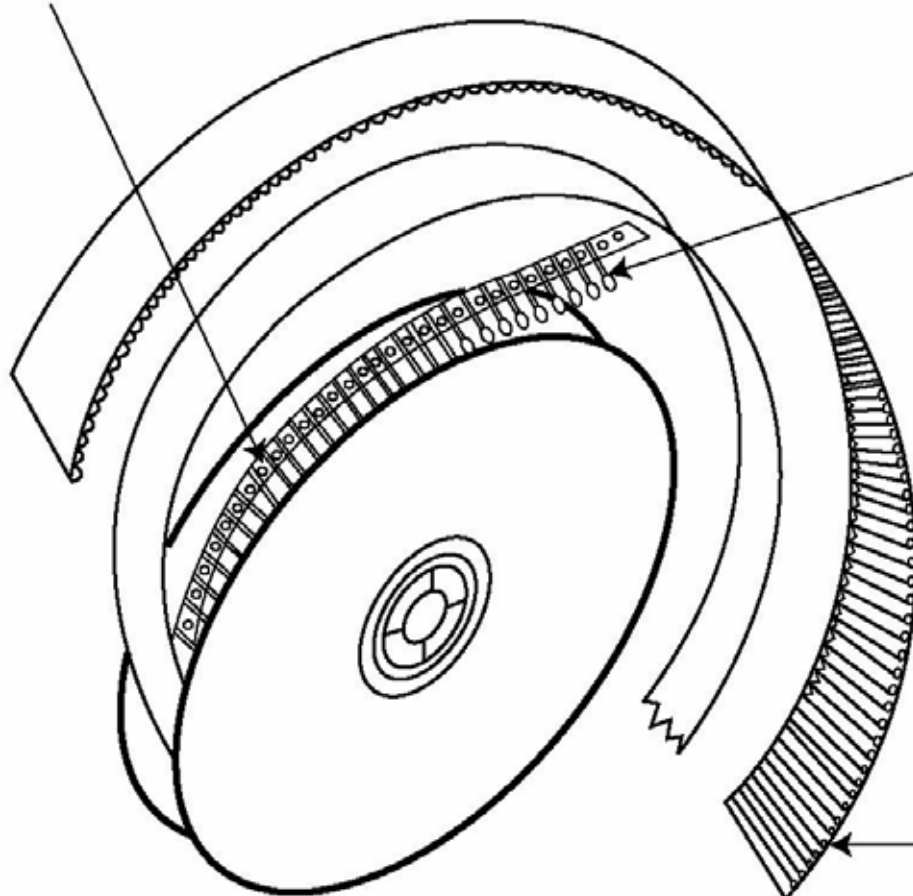
Packaging Specification

Adhesive Tape Must
Be Facing Towards
The Outside Of The Reel

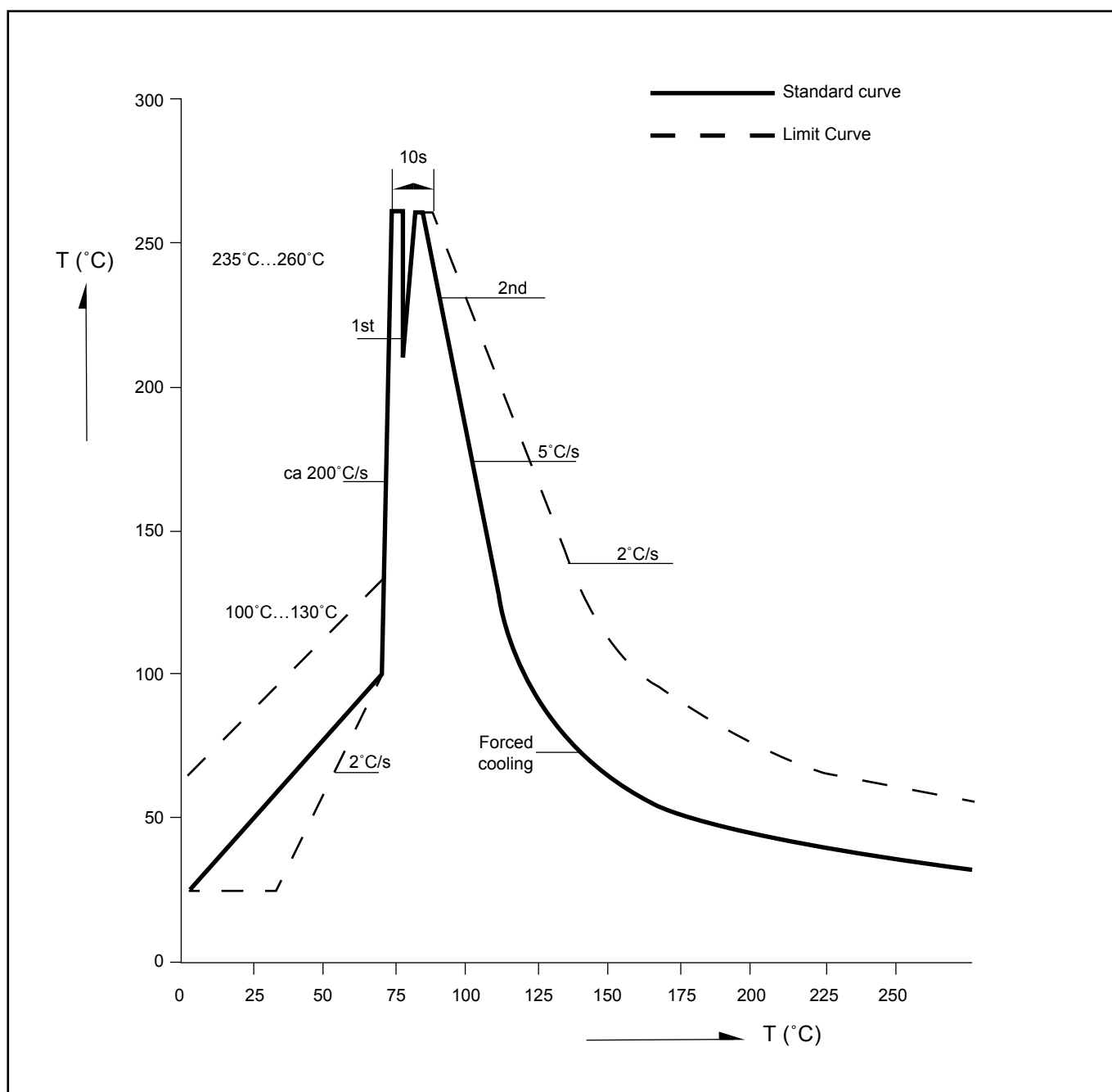
Reeling Orientation
Clockwise

Anode Lead
Leaves The
Reel First

Protective
Cardboard



Recommended TTW Soldering Profile (acc. to CECC 00802)



Revision History

Page	Subjects	Date of Modification
-	Initial Release	18 Apr 2008
3	Add Vf binning option	05 Aug 2008
2	Add new partno: L5G-C3000-UV2-1 L5Y-C60E0-R2T1-1 L5R-C60E0-ST2-1	16 Jan 2009
-	Update company name	18 Jun 2010

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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