

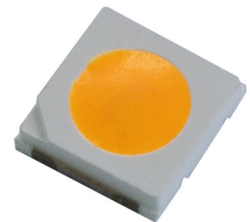
Primax

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. The small package outline (3.7 x 3.5 x 0.8 mm) and high intensity make it an ideal choice for backlighting, signage, exterior automotive lighting and decorative lighting.



Features:

- > Super high brightness surface mount LED
- > 120° viewing angle.
- > Compact package outline (LxW) of 3.7 x 3.5 mm.
- > Ultra low height profile - 0.8mm.
- > Low thermal resistance.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Superior corrosion resistance.
- > Compliance to automotive standard; AEC-Q101.



Applications:

- > Automotive: Exterior application: eg: Turn Indicator, Signal Lighting.

Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Flux @ 150mA (lm) <i>Appx. 1.2</i>		
			Min.	Typ.	Max.
MAZY-SZHG-N3Q-1	InGaN Yellow	120	20.6	30.6	39.8

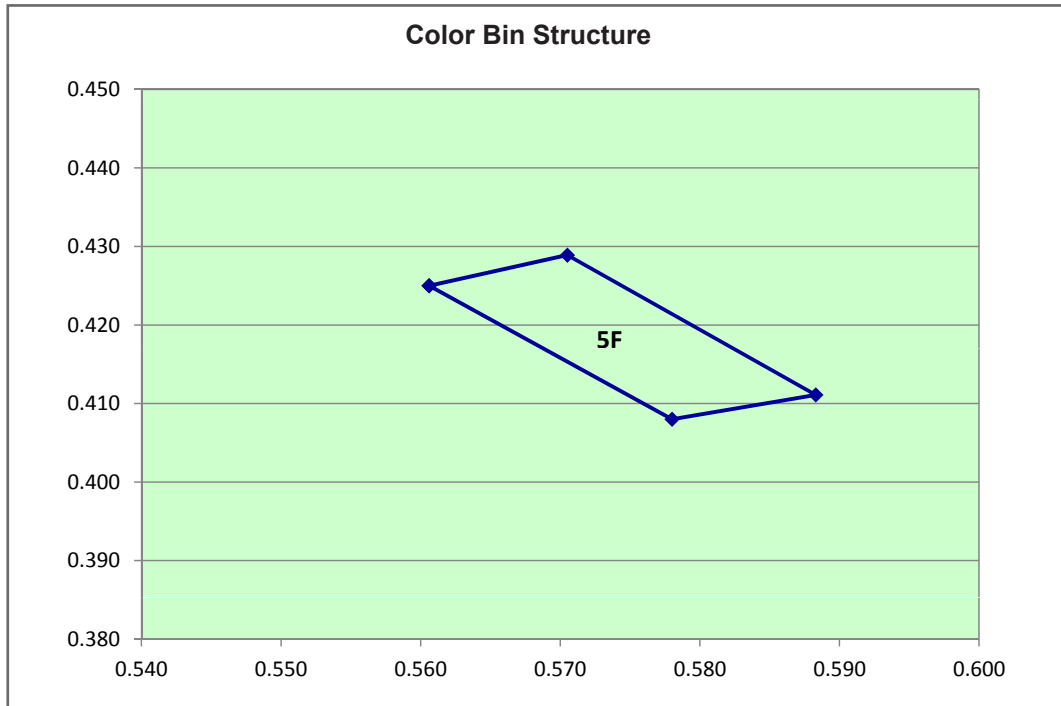
Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 150 mA <i>Appx. 3.1</i>		
	Min. (V)	Typ. (V)	Max. (V)
MAZY-SZHG	2.90	3.25	3.45

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	200	mA
Peak pulse current (tp<=10µs, Duty cycle=0.1)	300	mA
Reverse voltage	Not designed for reverse bias	V
ESD threshold (HBM)	8	kV
LED junction temperature	150	°C
Operating temperature	-40 ... +125	°C
Storage temperature	-40 ... +125	°C
Thermal resistance		
- Real Thermal Resistance		
Junction / solder point, R _{th JS real} (typ = 35)	45	K/W
- Electrical Thermal Resistance		
Junction / solder point, R _{th JS el} (typ = 25)	30	K/W
(Mounted on dual sided FR4 in house PCB, total Cu area >900mm ²)		

MAZY-SZHG, Color Grouping *Appx. 2.1*



Bin		1	2	3	4
5F	Cx	0.5606	0.5705	0.5883	0.5780
	Cy	0.4250	0.4289	0.4111	0.4080

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Flux (lm) <i>Appx. 1.2</i>
N3	20.6 ... 23.5
P2	23.5 ... 26.8
P3	26.8 ... 30.6
Q2	30.6 ... 34.8
Q3	34.8 ... 39.8

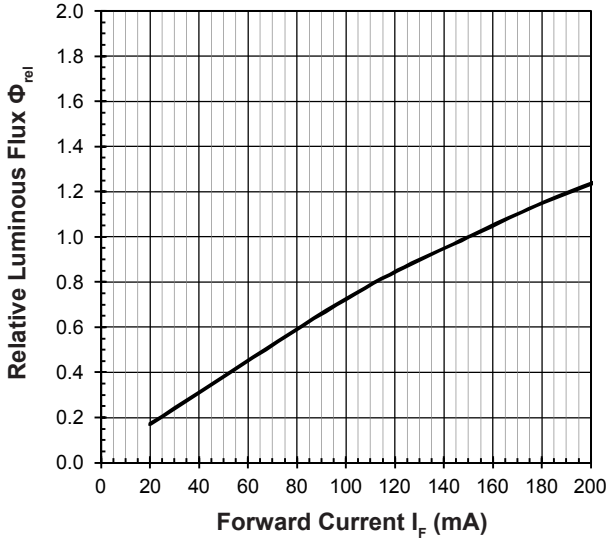
Vf Binning (Optional)

Vf Bin @ 150mA	Forward Voltage (V) <i>Appx. 3.1</i>
VM6	2.7 ... 3.0
VM7	3.0 ... 3.3
VM8	3.3 ... 3.6

Please consult sales and marketing for special part number to incorporate Vf binning.

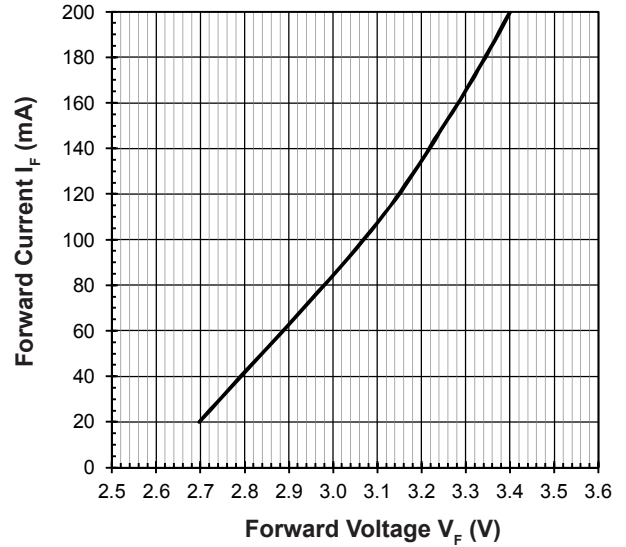
Relative Luminous Flux Vs Forward Current

$\Phi_v/\Phi_v(150\text{mA}) = f(I_F); T_j = 25^\circ\text{C}$



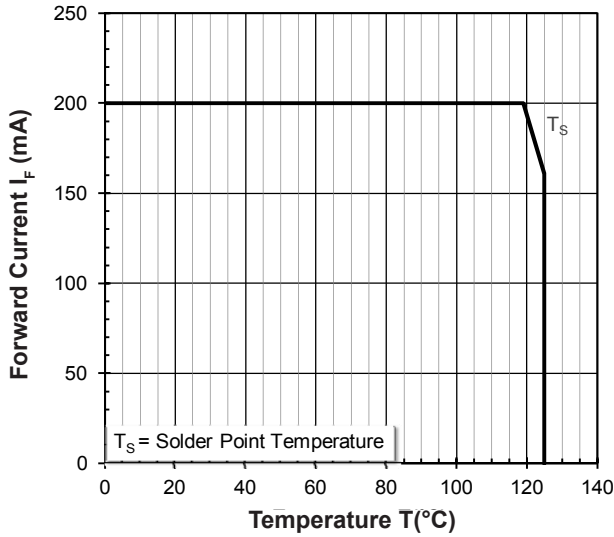
Forward Current Vs Forward Voltage

$I_F = f(V_F); T_j = 25^\circ\text{C}$



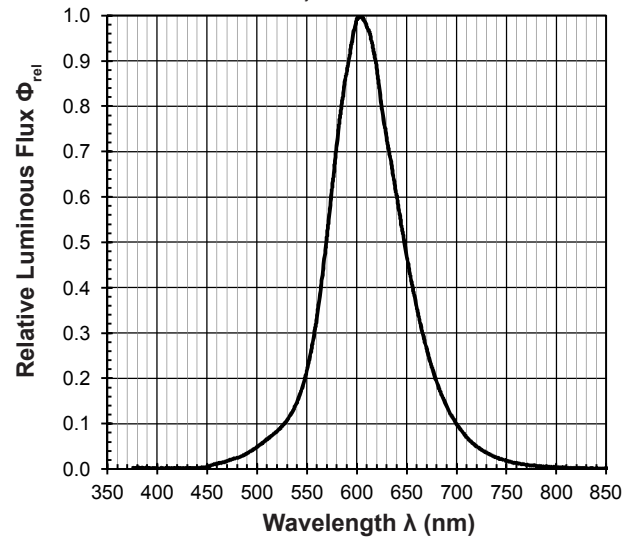
Maximum Current Vs Temperature

$I_F = f(T)$



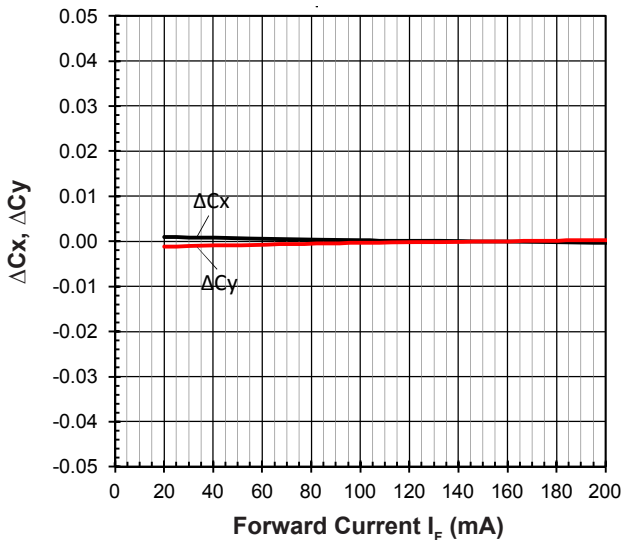
Relative Spectral Emission

$\Phi_{rel} = f(\lambda); T_j = 25^\circ\text{C}; I_F = 150\text{mA}$



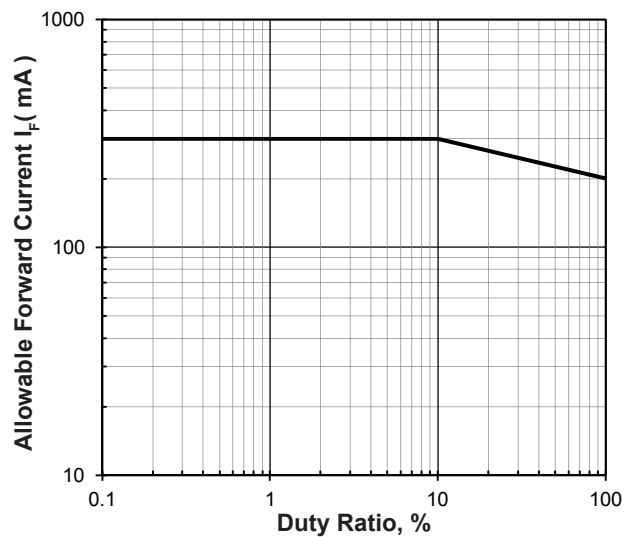
Chromaticity Coordinate Shift Vs Forward Current

$\Delta Cx, \Delta Cy = f(I_F); T_j = 25^\circ\text{C}$

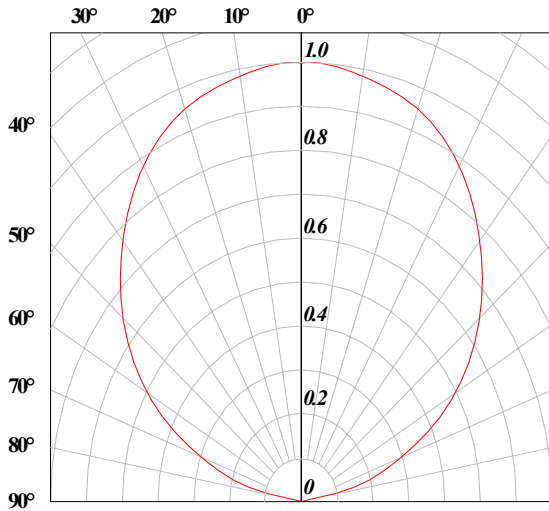


Allowable Forward Current Vs Duty Ratio

$(T_j = 25^\circ\text{C}; t_p \leq 10\mu\text{s})$

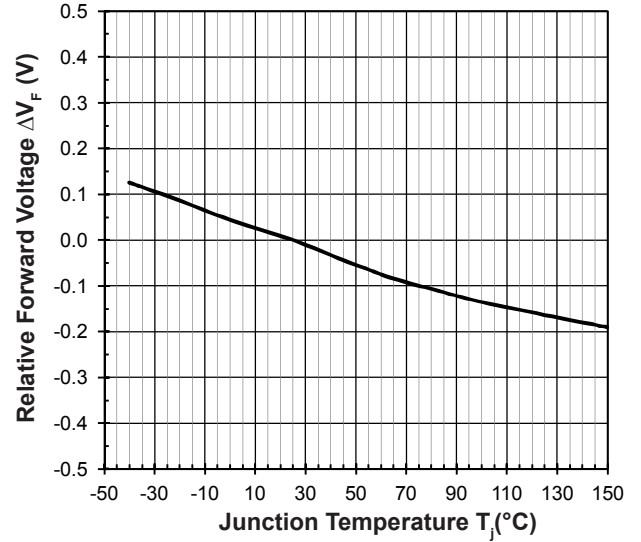


Radiation Pattern



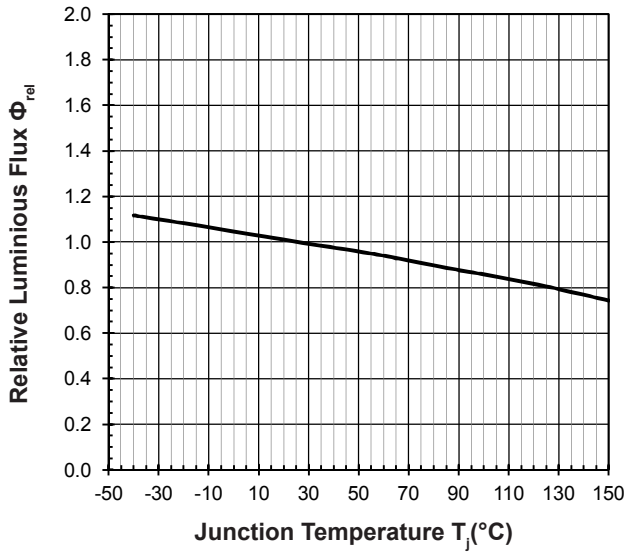
Relative Forward Voltage Vs Junction Temperature

$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 150\text{mA}$



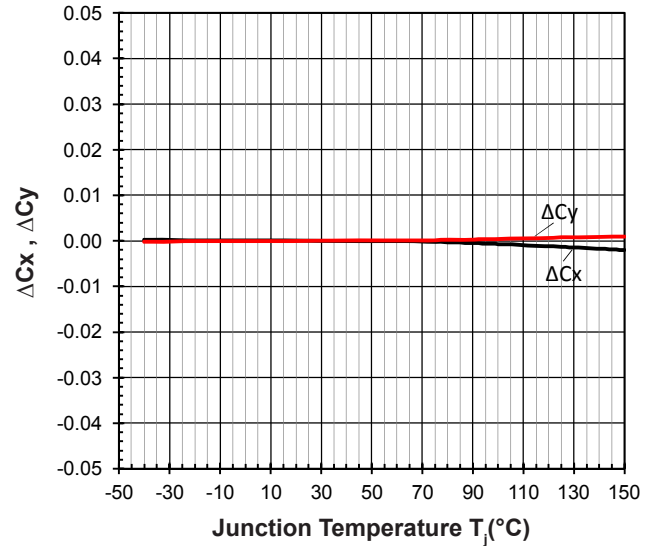
Relative Luminous Flux Vs Junction Temperature

$\Phi_V/\Phi_V(25^\circ\text{C}) = f(T_j); I_F = 150\text{mA}$

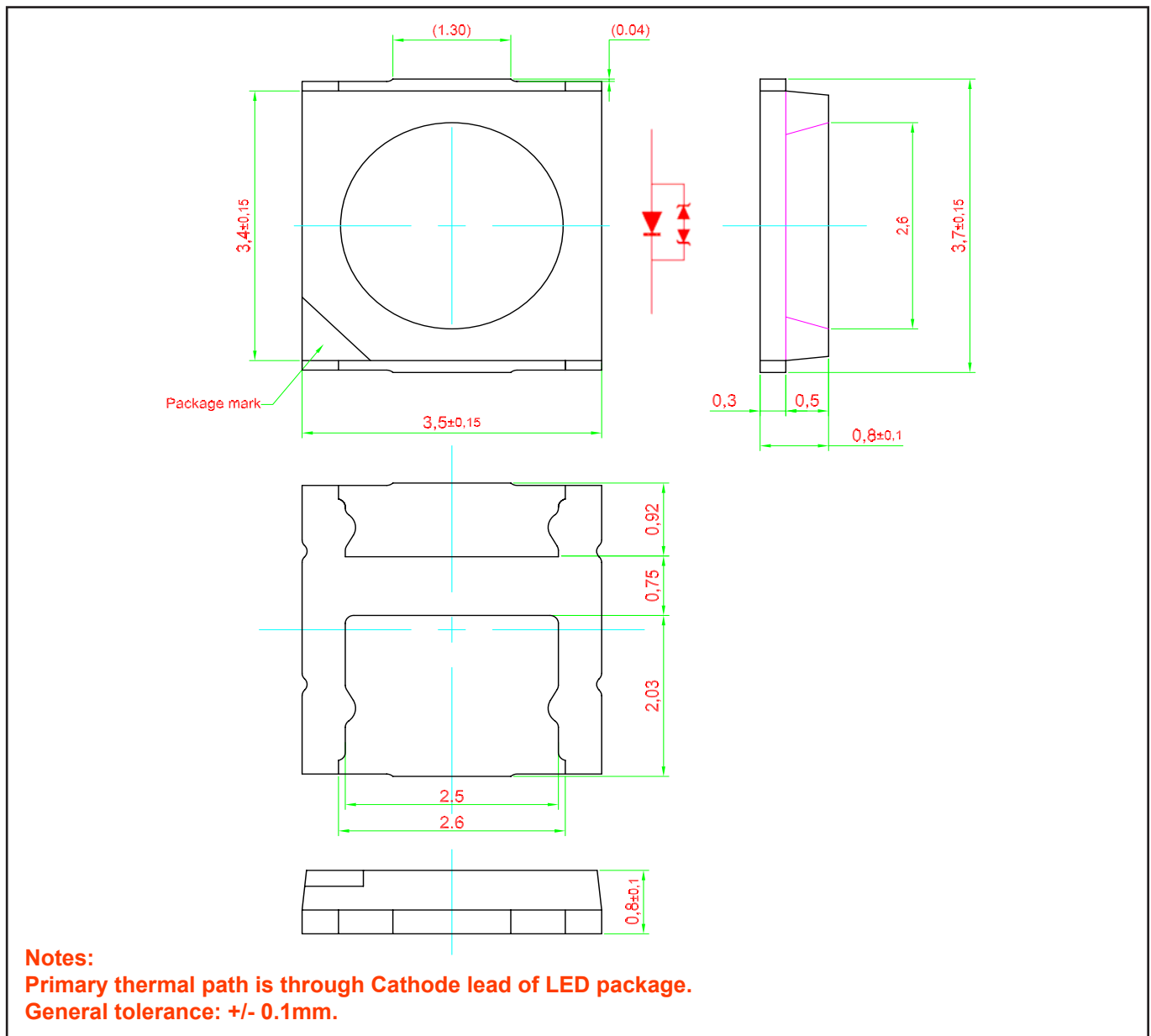


Chromaticity Coordinate Shift Vs Junction Temperature

$\Delta C_x, \Delta C_y = f(T_j); I_F = 150\text{mA}$



PrimaxPlus • 150 InGaN Yellow: MAZY-SZHG Package Outlines

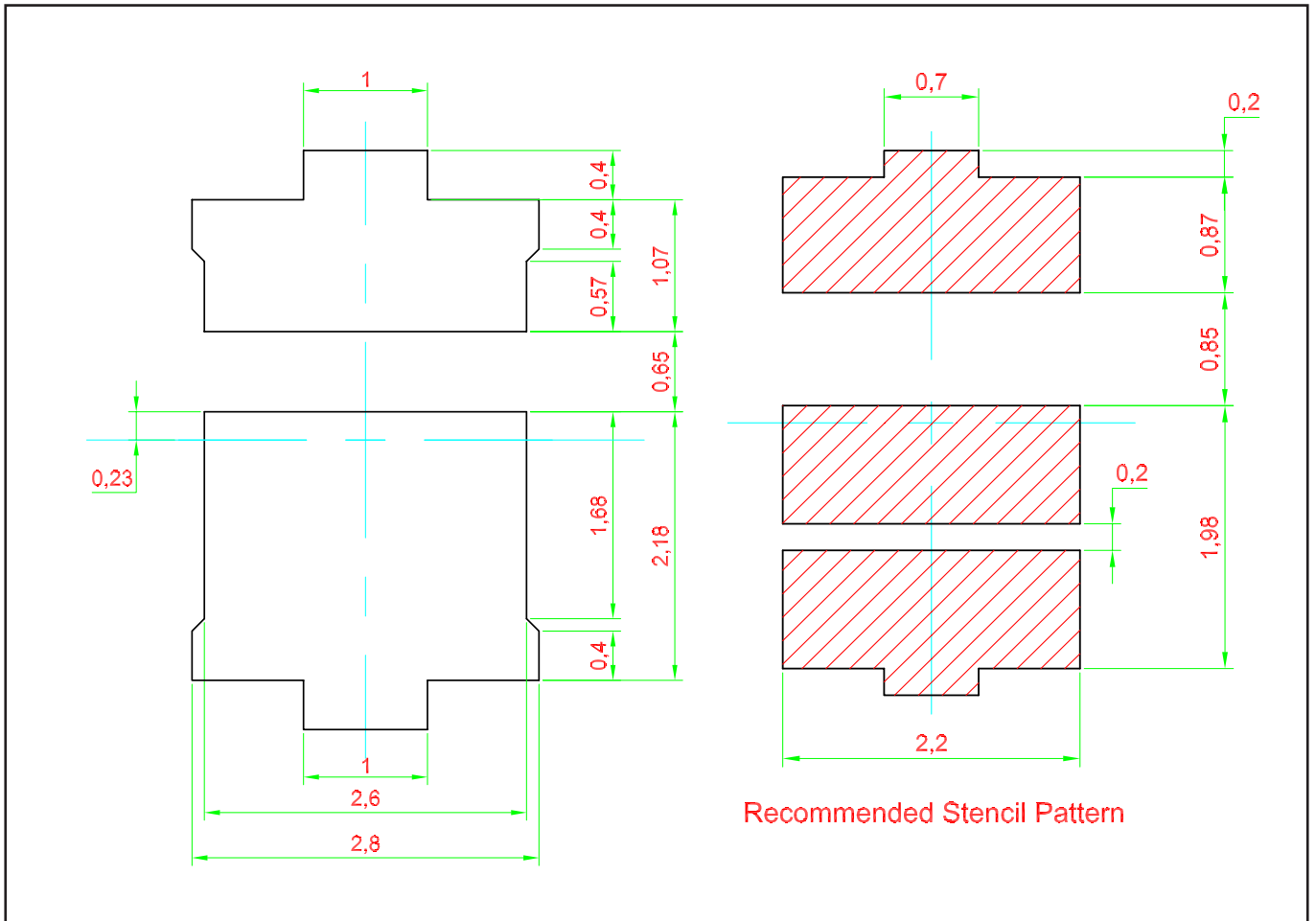


Material

Material	
Lead-frame	Cu Alloy With Au Plating
Package	High Temperature Resistant Plastic
Encapsulant	Silicone
Soldering Leads	Au Plating

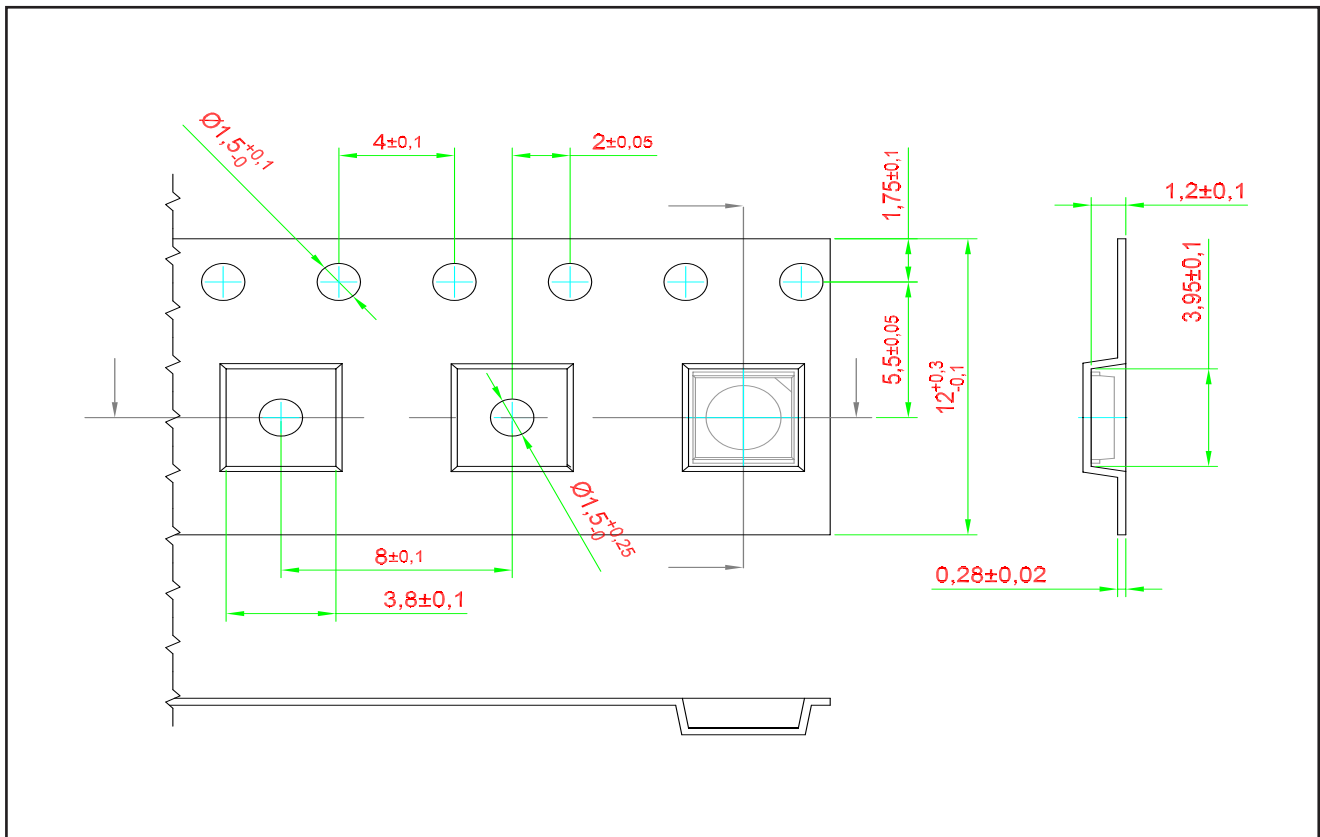
Note: This product is Pb free

Recommended Solder Pad

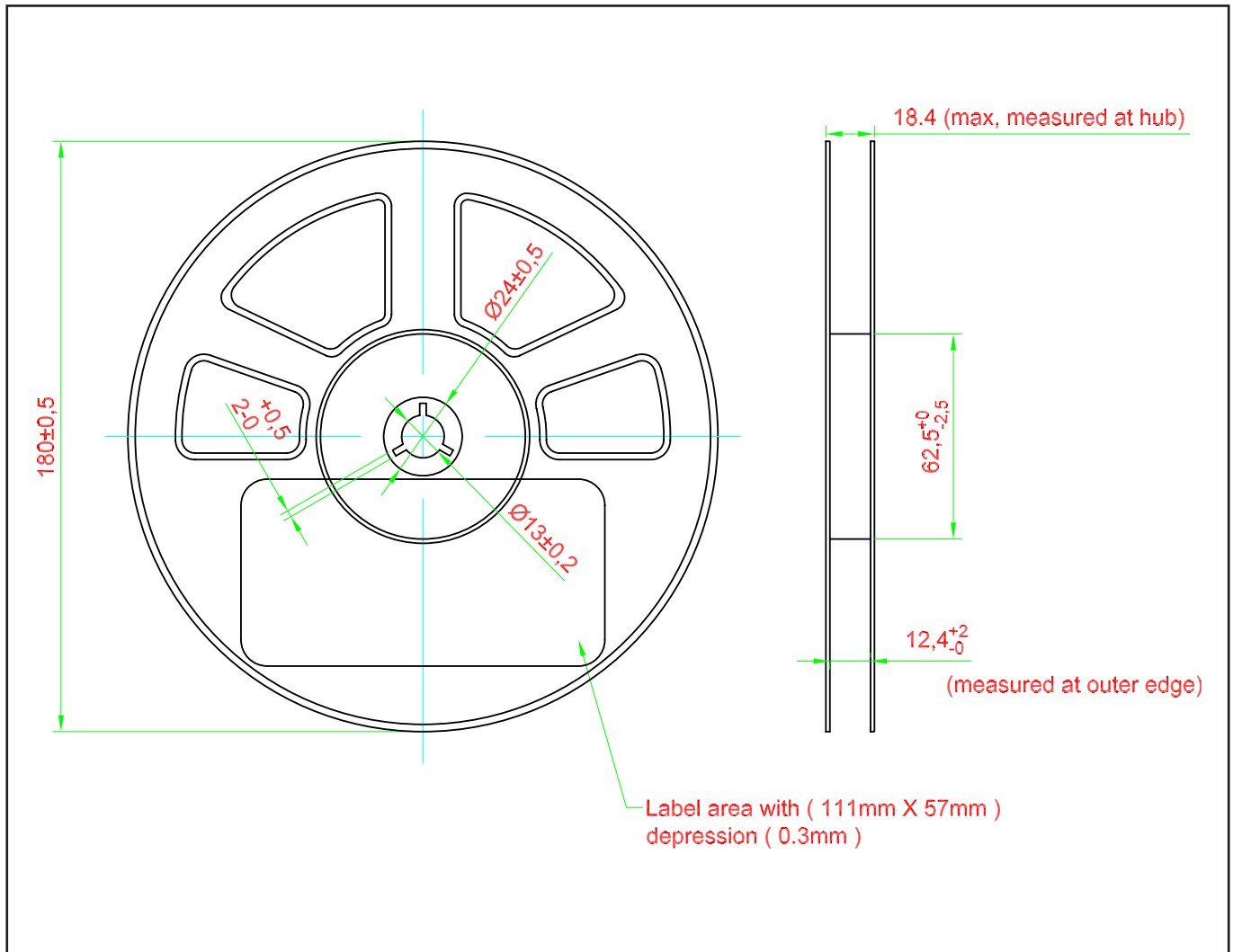


Taping and orientation

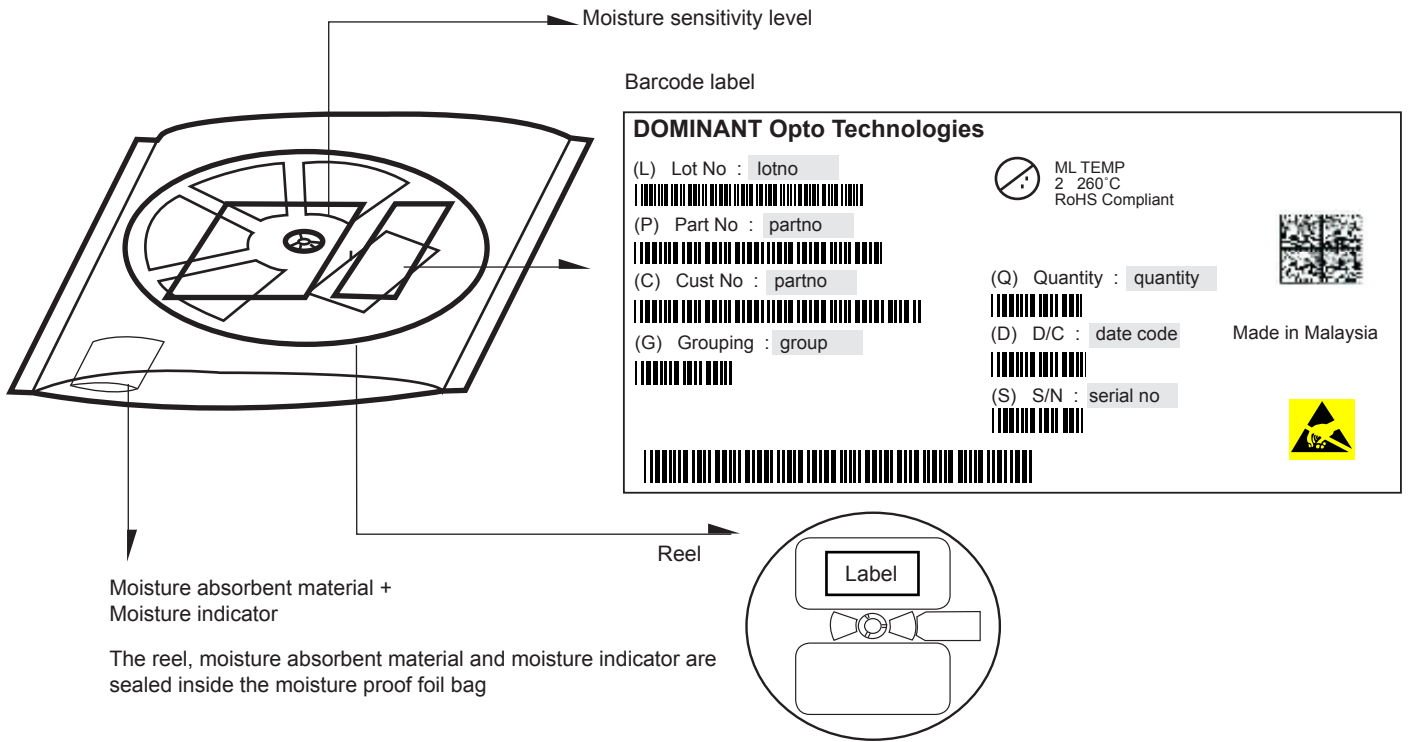
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



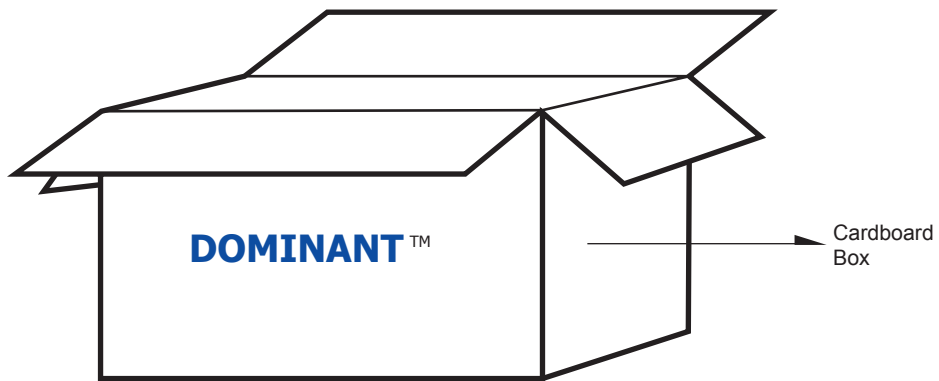
Packaging Specification



Packaging Specification



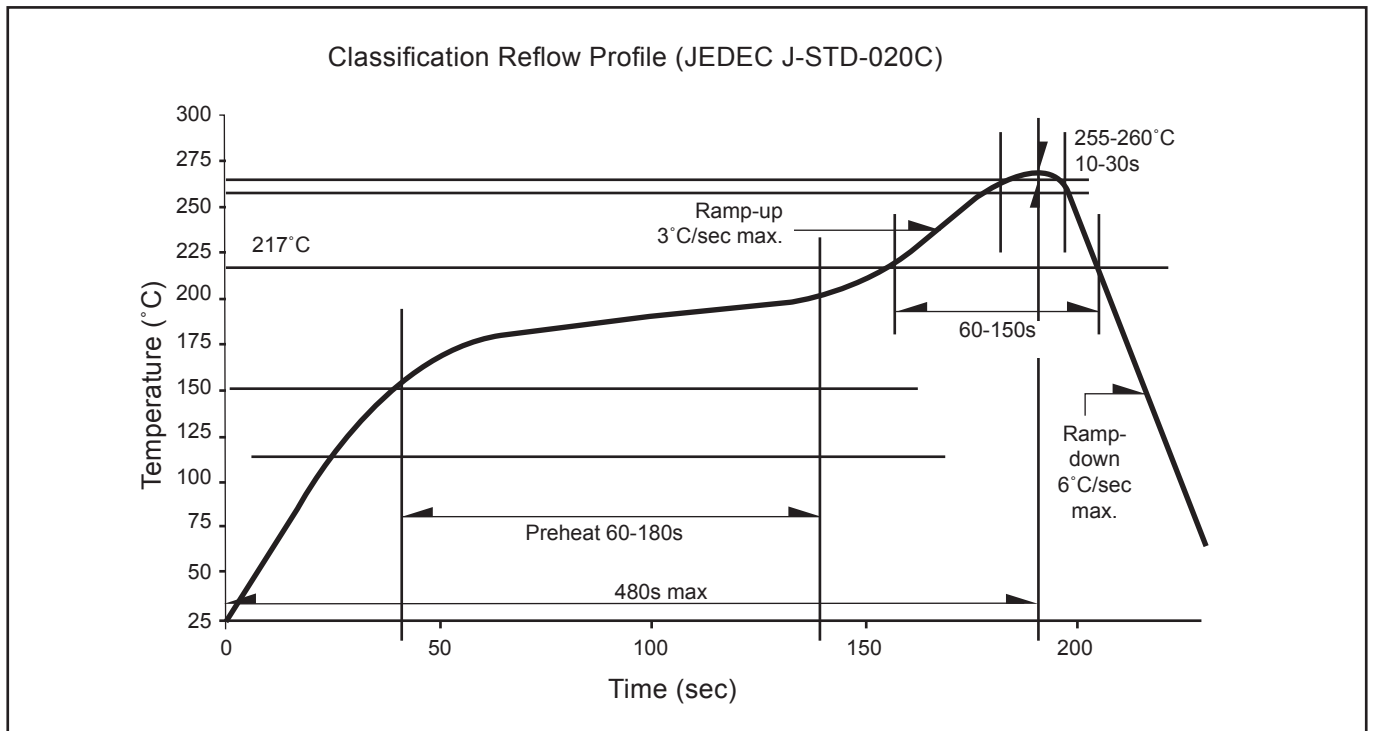
	Average 1pc PrimaxPlus	1 completed bag (1000pcs)
Weight (gram)	0.034	230 ± 10



For PrimaxPlus

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	7 reels MAX
Small	325 x 225 x 280	0.54	11 reels MAX
Medium	570 x 440 x 230	1.46	48 reels MAX
Large	570 x 440 x 460	1.92	96 reels MAX

Recommended Pb-free Soldering Profile



Appendix

1) **Brightness:**

- 1.1 Luminous intensity is measured with an internal reproducibility of $\pm 8 \%$ and an expanded uncertainty of $\pm 11 \%$ (according to GUM with a coverage factor of $k=3$).
- 1.2 Luminous flux is measured with an internal reproducibility of $\pm 8 \%$ and an expanded uncertainty of $\pm 11 \%$ (according to GUM with a coverage factor of $k=3$).

2) **Color:**

- 2.1 Chromaticity coordinate groups are measured with an internal reproducibility of ± 0.005 and an expanded uncertainty of ± 0.01 (accordingly to GUM with a coverage factor of $k=3$).
- 2.2 DOMINANT wavelength is measured with an internal reproducibility of $\pm 0.5\text{nm}$ and an expanded uncertainty of $\pm 1\text{nm}$ (accordingly to GUM with a coverage factor of $k=3$).

3) **Voltage:**

- 3.1 Forward Voltage, V_f is measured with an internal reproducibility of $\pm 0.05\text{V}$ and an expanded uncertainty of $\pm 0.1\text{V}$ (accordingly to GUM with a coverage factor of $k=3$).

About Us

DOMINANT Opto Technologies is a dynamic company that is amongst the world's leading automotive LED manufacturers. With an extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing and development capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Opto Technologies, a ISO/TS 16949 and ISO 14001 certified company, can be found under <http://www.dominant-semi.com>.

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