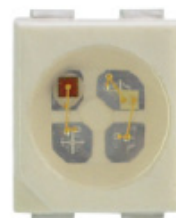


Multi DomiLED

Synonymous with function and performance, the Multi DomiLED series is perfectly suited for a variety of cross-industrial applications due to its small package outline, durability and superior brightness.



Features:

- > High brightness bi-color surface mount LED.
- > 120° viewing angle.
- > Small package outline (LxWxH) of 3.2 x 2.8 x 1.8mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Compliance to automotive standard; AEC-Q101.



Applications:

- > Signage: full colour display video notice board, signage, special effect lighting.
- > Lighting: architecture lighting, general lighting, garden light, channel light.
- > Automotive: interior application, eg: switches, telematics, climate control system, dashboard, etc.



Optical Characteristics at Tj=25°C

Part Ordering Number	Color, λ_{dom} (nm)		Viewing Angle°	Luminous Intensity @ 20mA IV (mcd) Appx. 1.1					
	Chip #1	Chip #2		Min.	Typ.	Max.	Min.	Typ.	Max.
DKST-MJS-UV+WX-1	Super Red, 632nm	True Green, 525nm	120	450.0	715.0	1125.0	1125.0	1800.0	2850.0

Electrical Characteristics at Tj=25°C

	Vf @ If = 20mA Appx. 3.1		
	Min. (V)	Typ. (V)	Max. (V)
Super Red	1.80	2.10	2.60
True Green	2.80	3.10	3.30

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	Super Red; AlInGaP=30; True Green; InGaN=20	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005)	Super Red ; AlInGaP=200; True Green; InGaN=200	mA
Reverse voltage	Super Red; AlInGaP=12; True Green; InGaN=5	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, RthJA (2 chips On)	575	K/W
- Junction / solder point, RthJS (2 chips On)	380	K/W

Wavelength Grouping

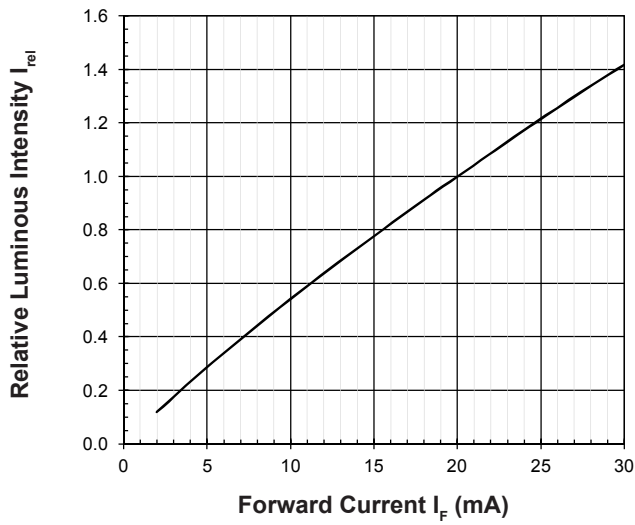
Color	Group	Wavelength distribution (nm) <i>Appx. 2.2</i>
Super Red	Full	625 - 640
True Green	Full	520 - 536
	W	520 - 524
	X	524 - 528
	Y	528 - 532
	Z	532 - 536

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity @ IV (mcd) <i>Appx. 1.1</i>	
	Chip #1	Chip #2
UW	450.0...715.0	1125.0...1800.0
UX	450.0...715.0	1800.0...2850.0
VW	715.0...1125.0	1125.0...1800.0
VX	715.0...1125.0	1800.0...2850.0

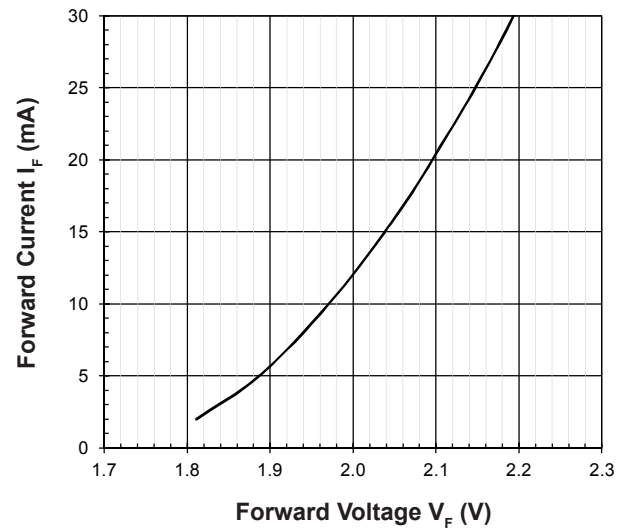
Relative Luminous Intensity Vs Forward Current

$$I_V/I_V(20\text{mA}) = f(I_F); T_j = 25^\circ\text{C} (\text{AlInGaP})$$



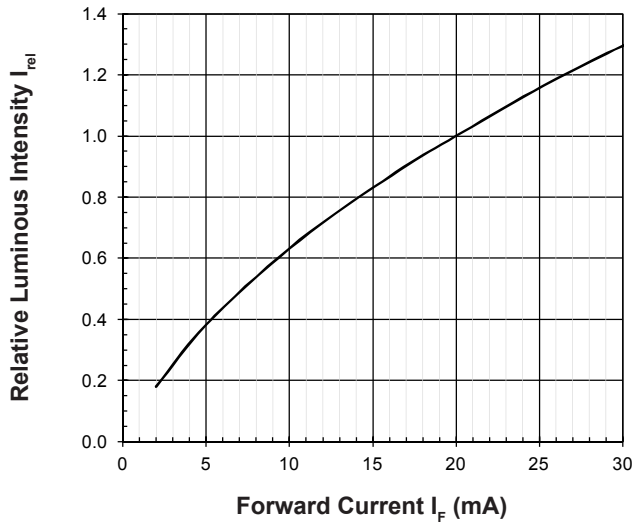
Forward Current Vs Forward Voltage

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



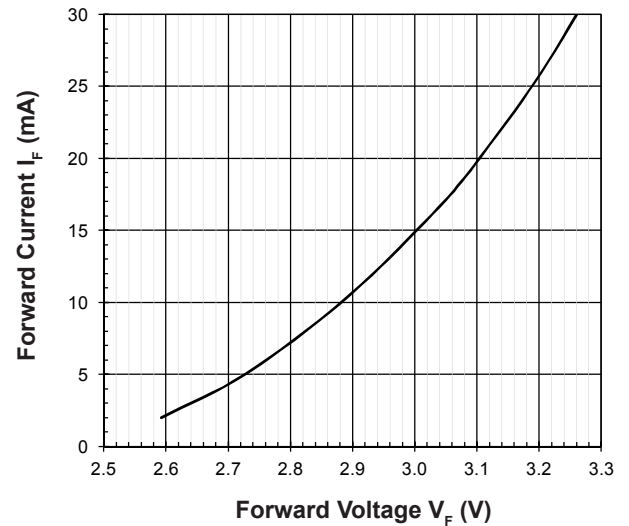
Relative Luminous Intensity Vs Forward Current

$$I_V/I_V(20\text{mA}) = f(I_F); T_j = 25^\circ\text{C} (\text{InGaN})$$



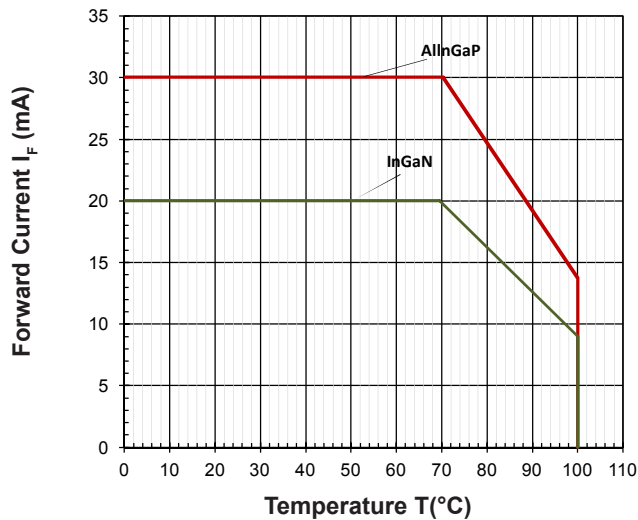
Forward Current Vs Forward Voltage

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



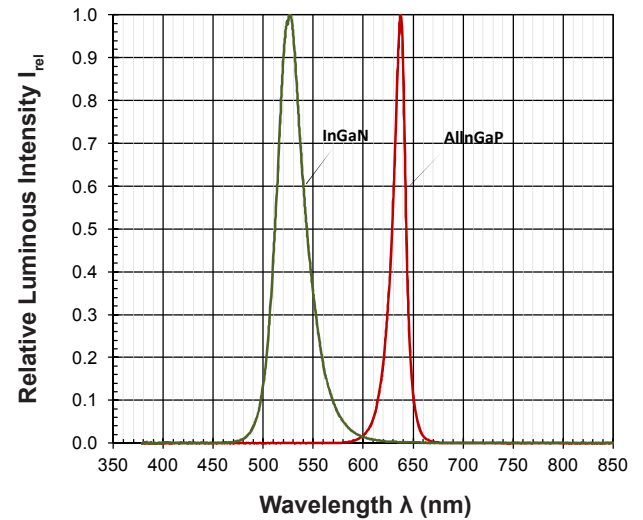
Maximum Current Vs Temperature

$$I_F = f(T)$$

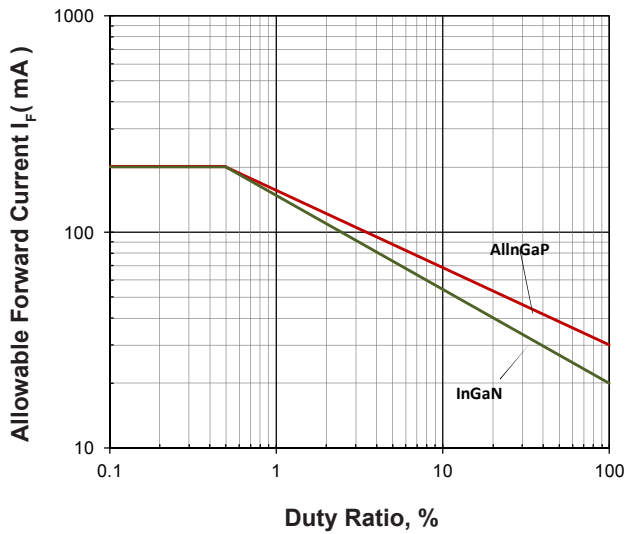


Relative Spectral Emission

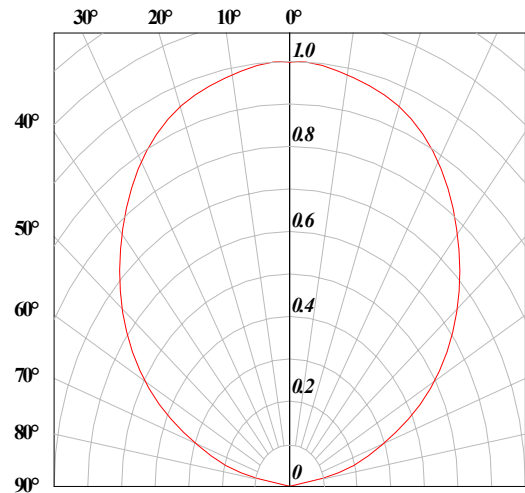
$$I_{rel} = f(\lambda); T_j = 25^\circ\text{C}; I_F = \text{AlInGaP } 20\text{mA}; \text{InGaN } 20\text{mA}$$



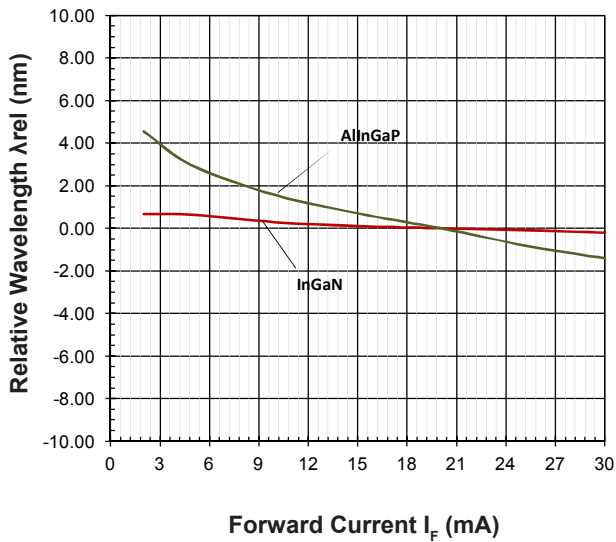
Allowable Forward Current Vs Duty Ratio
 ($T_j = 25^\circ\text{C}$; $t_p \leq 10\mu\text{s}$)



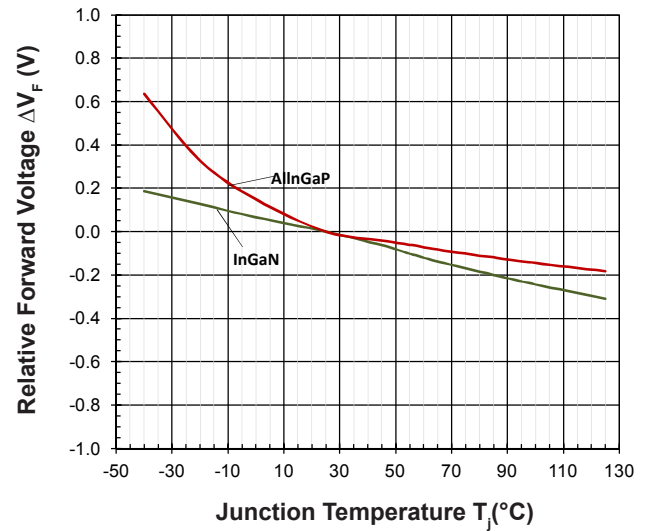
Radiation Pattern



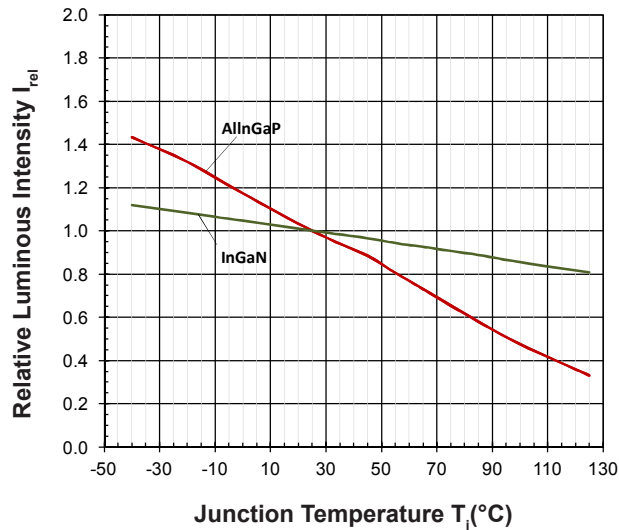
Relative Wavelength Shift Vs Forward Current
 $\lambda_{\text{dom}} = f(I_F)$; $T_j = 25^\circ\text{C}$



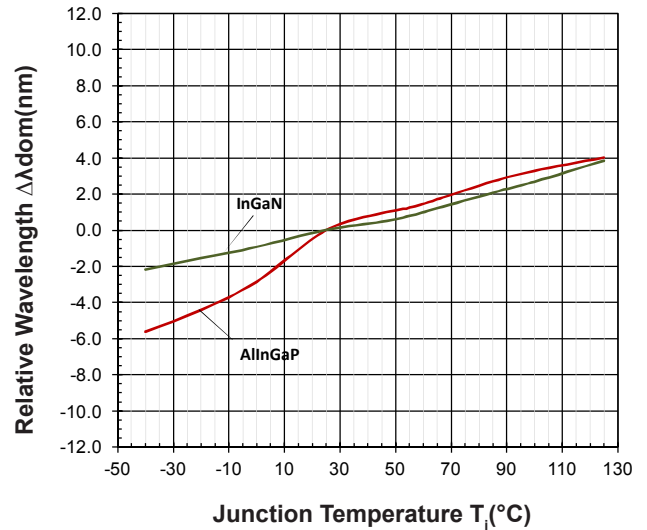
Relative Forward Voltage Vs Junction Temperature
 $\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j)$; $I_F = 20\text{mA}$



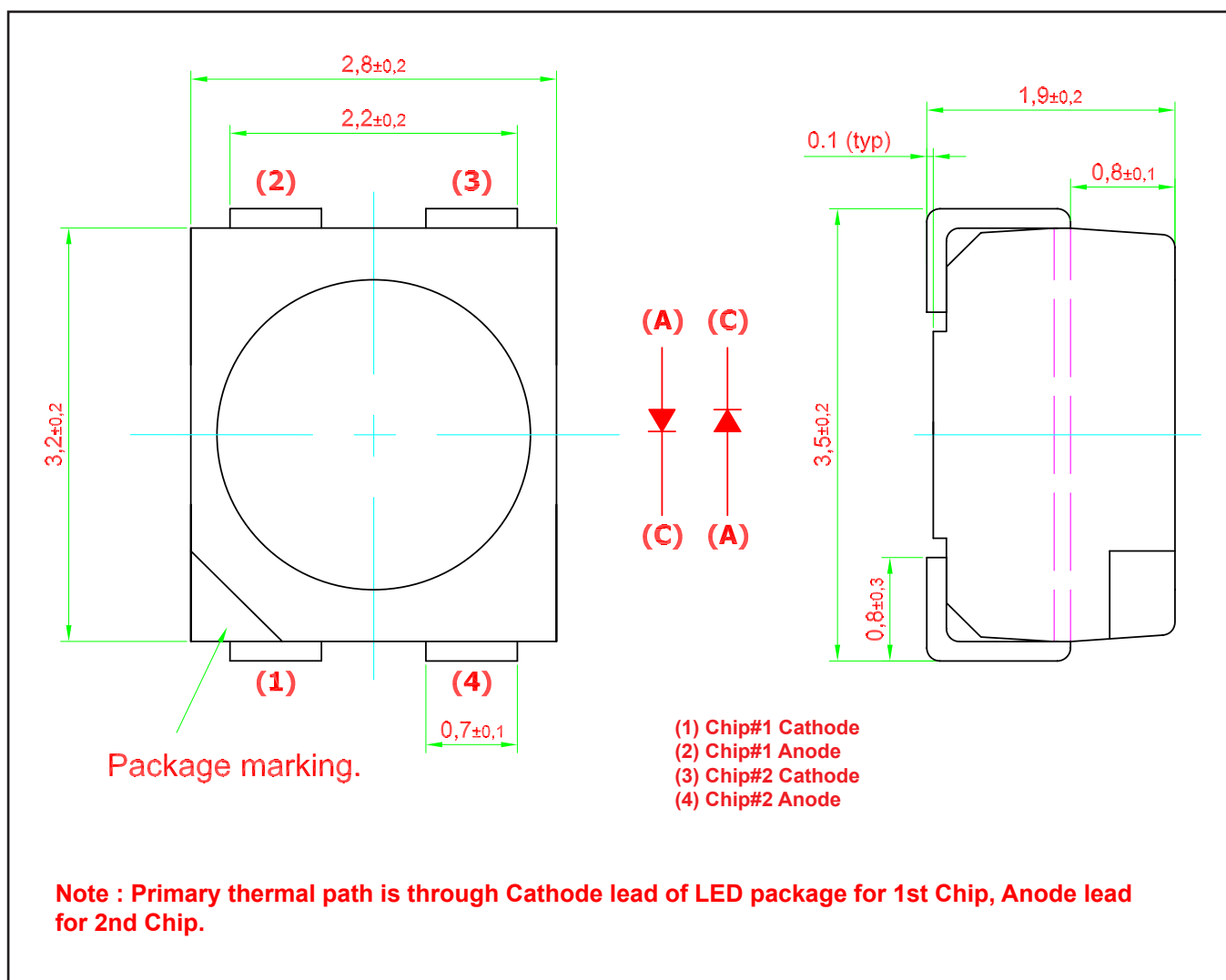
Relative Luminous Intensity Vs Junction Temperature
 $I_V/I_V(25^\circ\text{C}) = f(T_j)$; $I_F = 20\text{mA}$



Relative Wavelength Vs Junction Temperature
 $\Delta\lambda_{\text{dom}} = \lambda_{\text{dom}} - \lambda_{\text{dom}}(25^\circ\text{C}) = f(T_j)$; $I_F = 20\text{mA}$



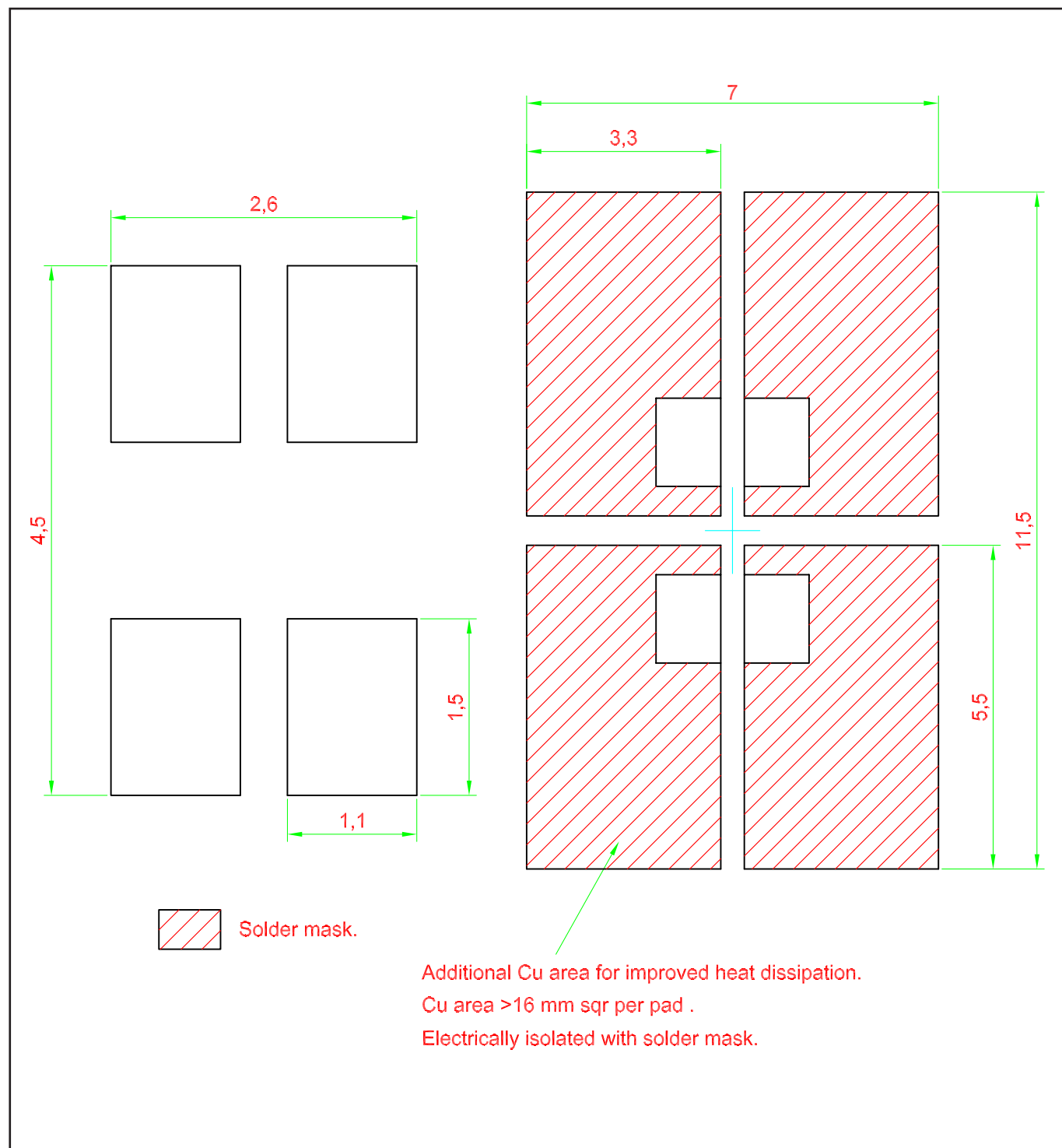
Multi DomiLED • Bi-Color : DKxx-MJS Package Outlines



Material

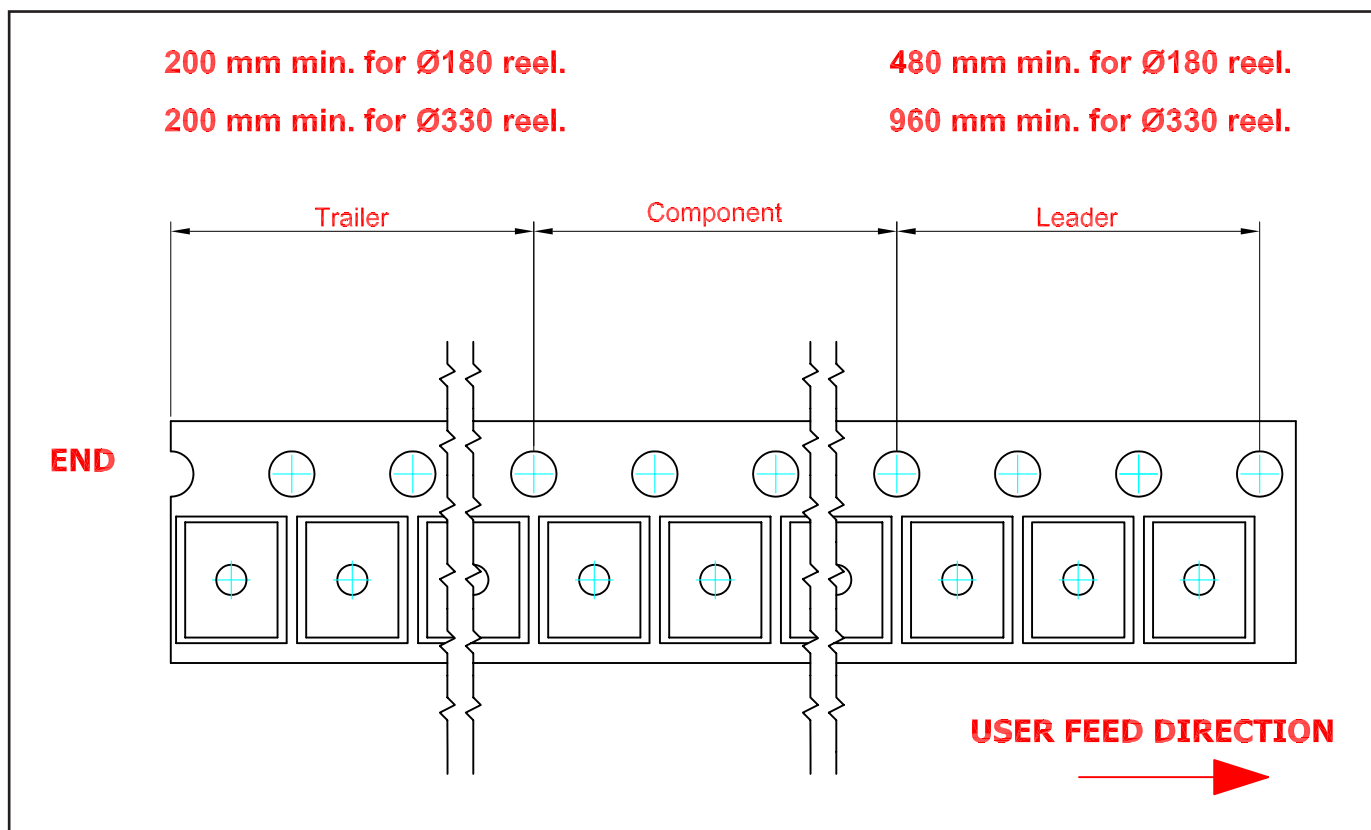
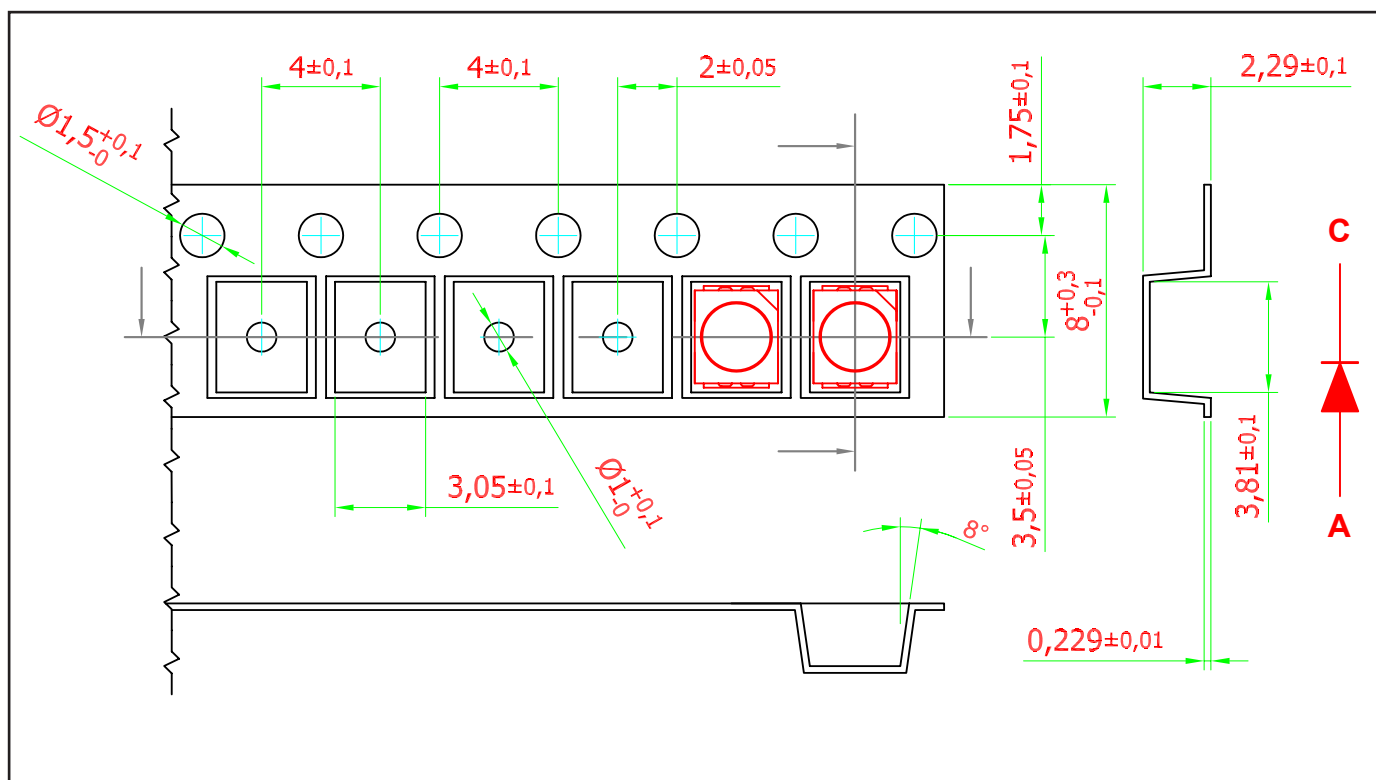
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn Plating

Recommended Solder Pad

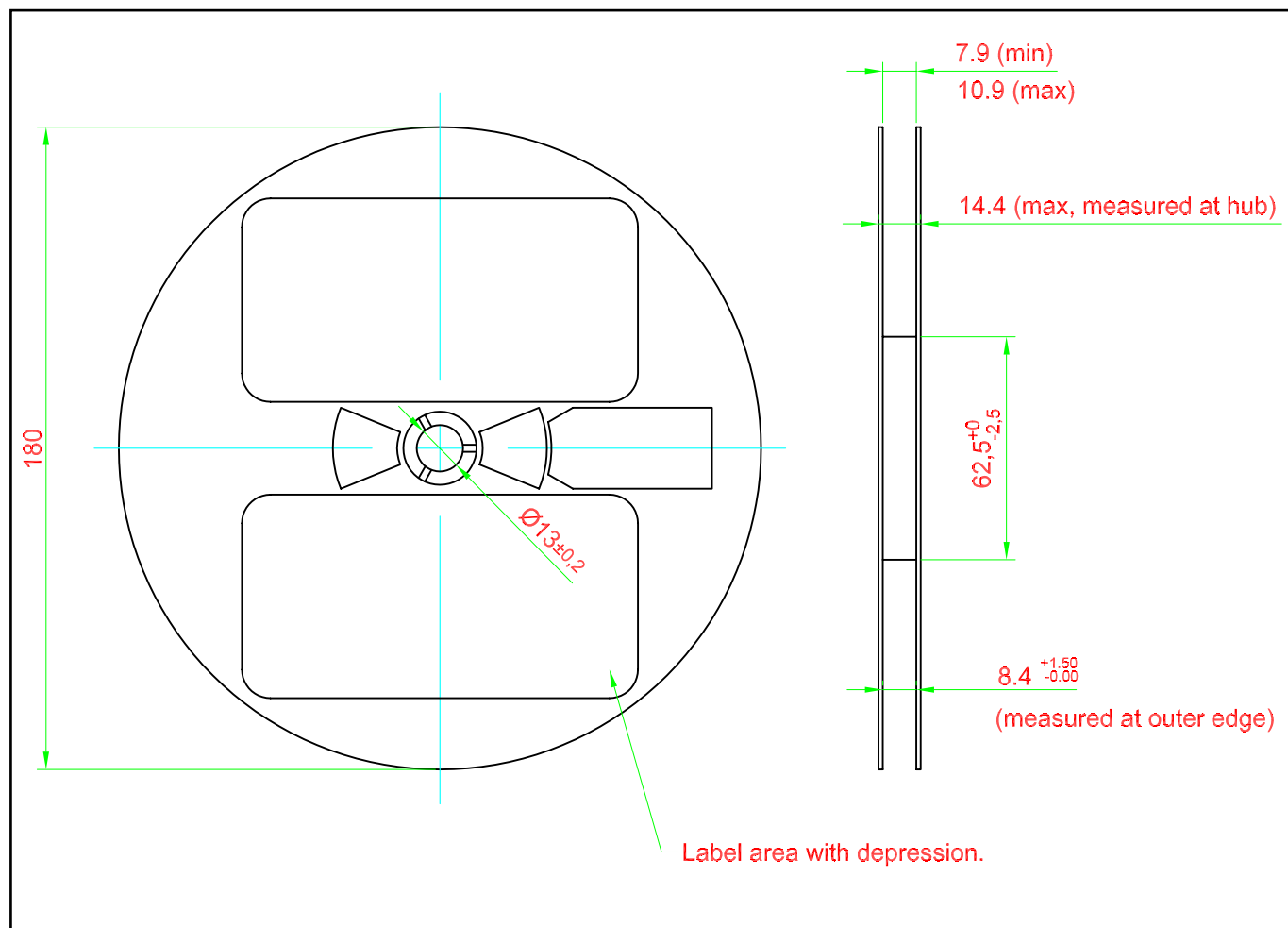


Taping and orientation

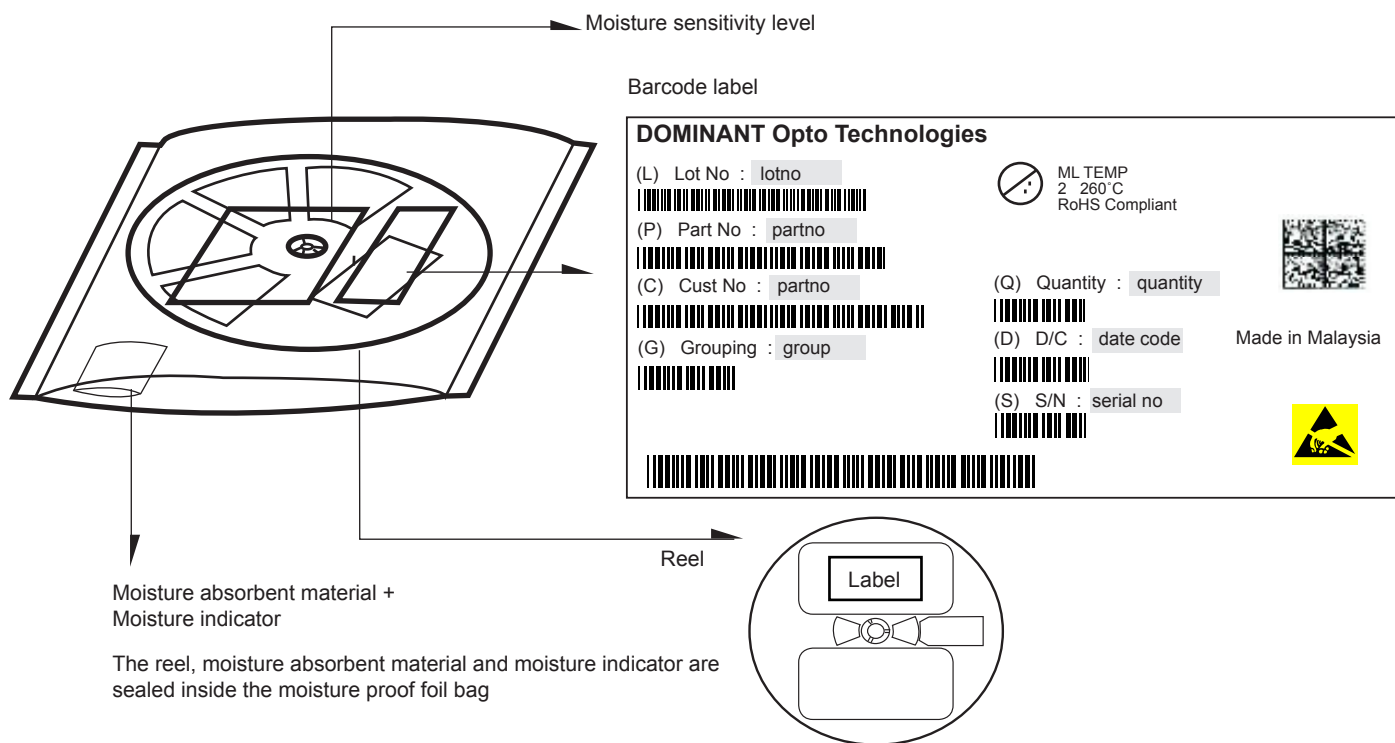
- Reels come in quantity of 2000 units.
- Reel diameter is 180 mm.



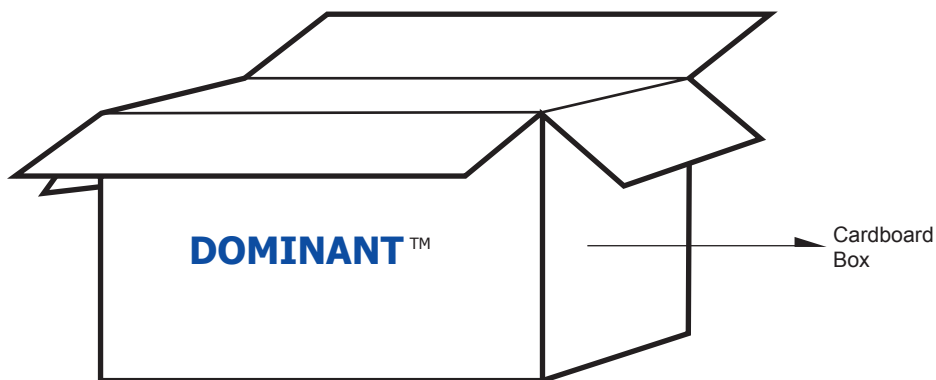
Packaging Specification



Packaging Specification



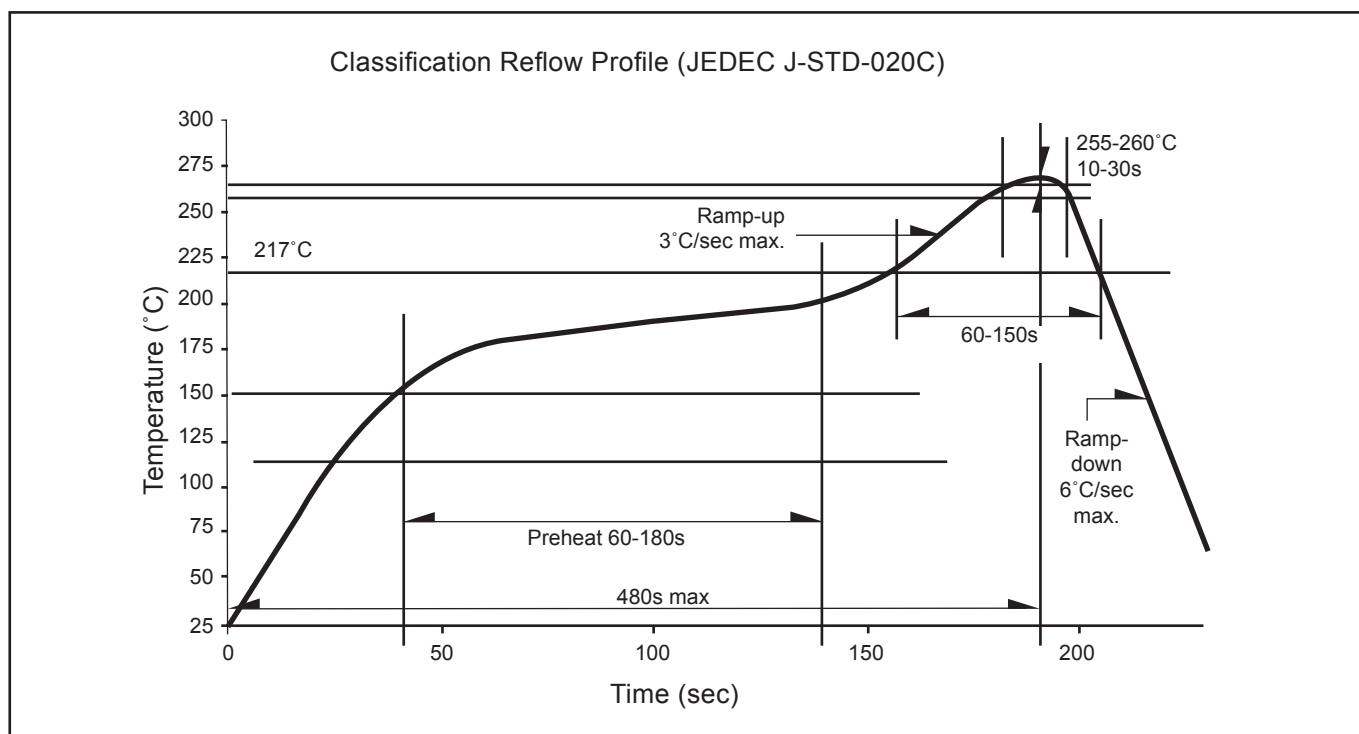
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	240 ± 10



For Multi DomiLED

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	9 reels MAX
Small	325 x 225 x 280	0.54	15 reels MAX
Medium	570 x 440 x 230	1.46	60 reels MAX
Large	570 x 440 x 460	1.92	120 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 $k=3$).
- 1.3 Radiant 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 $k=3$).
- 1.4 Radiant 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 $k=3$).

Revision History

Page	Subjects	Date of Modification
-	Initial Release	19 Apr 2017
2, 4	Update Vf for True Green Update Graph- Forward Current Vs Forward Voltage (InGaN) Update Appendix	25 Oct 2017

NOTE

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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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