

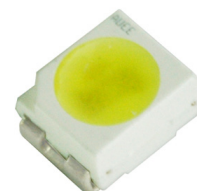
Power DomiLED

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLEDTM truly is a standout performer! Ideal for automotive interior lighting as well as home, office and industrial applications, it is also a proven performer in electronic signs and signals.



Features:

- > High brightness 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.
- > Built in ESD protection.
- > Compliance to automotive standard; AEC-Q101.
- > Superior corrosion resistant.



Applications:

- > Automotive:
 - Exterior applications, eg: position lamp, license plate lamp, side marker.
- > Interior, eg: switches, cluster, climate control, dash boards, mirror lamp, ambient lighting.



Optical Characteristics (Tj=25°C)

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 60mA IV (mcd) <i>Appx. 1.1</i>		
			Min.	Typ.	Max.
DWW-KZKG-Y2Z-1	White	120	3550.0	5600.0	7150.0

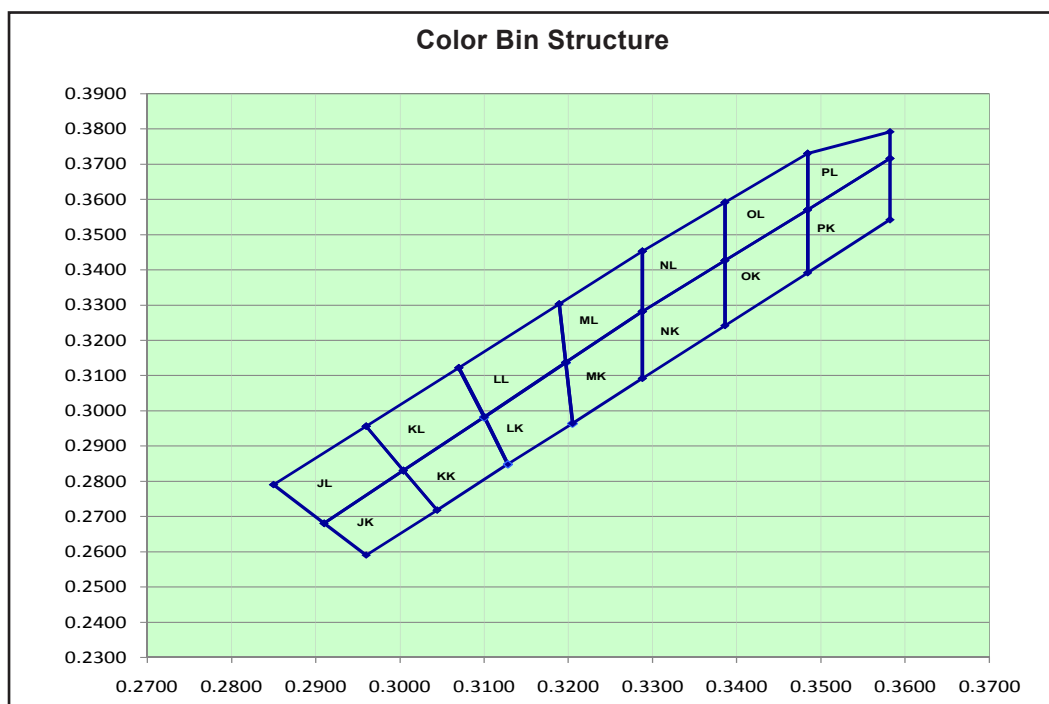
Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 60mA <i>Appx. 3.1</i>		
	Min. (V)	Typ. (V)	Max. (V)
DWW-KZKG	2.90	3.10	3.50

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	80	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.1)	120	mA
Reverse voltage; Ir (max) = 10μA	Not designed for reverse bias	V
ESD threshold (HBM)	4000	V
LED junction temperature	150	°C
Operating temperature	-40 ... +110	°C
Storage temperature	-40 ... +125	°C
Power dissipation (at room temperature)	300	mW
Thermal resistance		
- Real Thermal Resistance		
Junction / ambient, Rth JA real	280	K/W
Junction / solder point, Rth JS real	130	K/W
- Electrical Thermal Resistance		
Junction / ambient, Rth JA el	220	K/W
Junction / solder point, Rth JS el	100	K/W
(Mounting on DOMINANT standard PCB)		

DWW, White Color Grouping *Appx. 2.1*



Bin		1	2	3	4
JK	Cx	0.2910	0.2960	0.3044	0.3004
	Cy	0.2680	0.2590	0.2718	0.2830
JL	Cx	0.2850	0.2910	0.3004	0.2960
	Cy	0.2790	0.2680	0.2830	0.2956
KK	Cx	0.3004	0.3044	0.3128	0.3100
	Cy	0.2830	0.2718	0.2848	0.2982
KL	Cx	0.2960	0.3004	0.3100	0.3070
	Cy	0.2956	0.2830	0.2982	0.3122
LK	Cx	0.3100	0.3128	0.3205	0.3197
	Cy	0.2982	0.2848	0.2964	0.3137
LL	Cx	0.3070	0.3100	0.3197	0.3189
	Cy	0.3122	0.2982	0.3137	0.3303
MK	Cx	0.3197	0.3205	0.3288	0.3288
	Cy	0.3137	0.2964	0.3092	0.3282
ML	Cx	0.3189	0.3197	0.3288	0.3288
	Cy	0.3303	0.3137	0.3282	0.3453
NK	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3282	0.3092	0.3242	0.3427
NL	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3453	0.3282	0.3427	0.3592

Bin		1	2	3	4
OK	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3427	0.3242	0.3392	0.3571
OL	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3592	0.3427	0.3571	0.3730
PK	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3571	0.3392	0.3542	0.3716
PL	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3730	0.3571	0.3716	0.3792

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 purposed.

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity ^{Appx. 1.1} IV (mcd)
Y2	3550.0 ... 4500.0
Z1	4500.0 ... 5600.0
Z2	5600.0 ... 7150.0

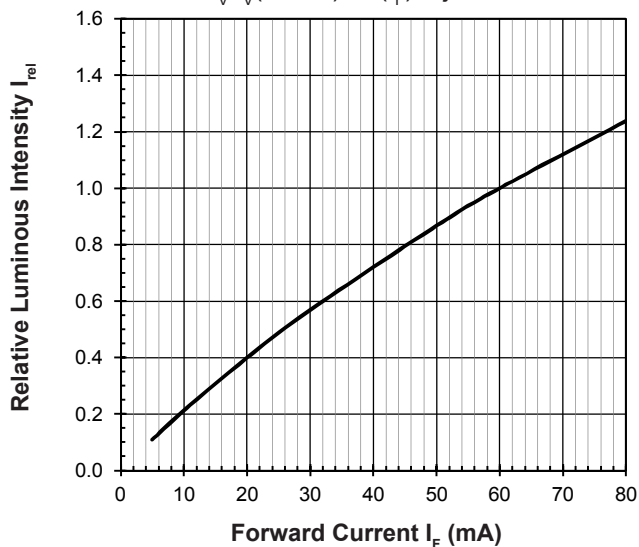
Vf Bining (Optional)

Vf Bin @ 60 mA	Forward Voltage (V) ^{Appx. 3.1}
V0	2.70 ... 3.00
V1	3.00 ... 3.30
V2	3.30 ... 3.60

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

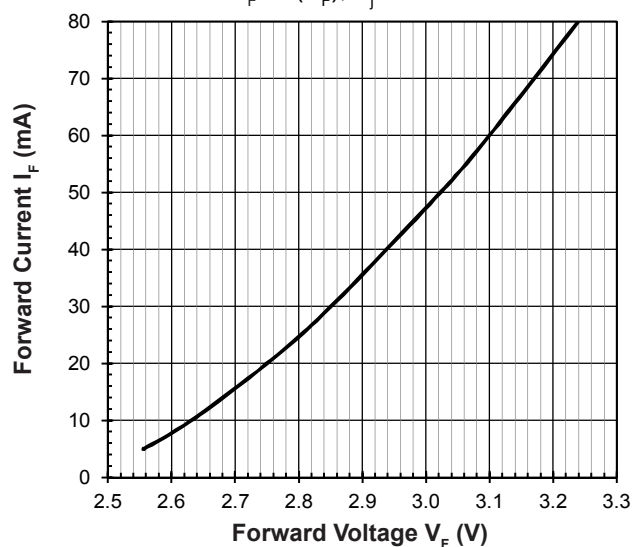
Relative Luminous Intensity Vs Forward Current

$$I_V/I_V(60\text{mA}) = f(I_F); T_j = 25^\circ\text{C}$$



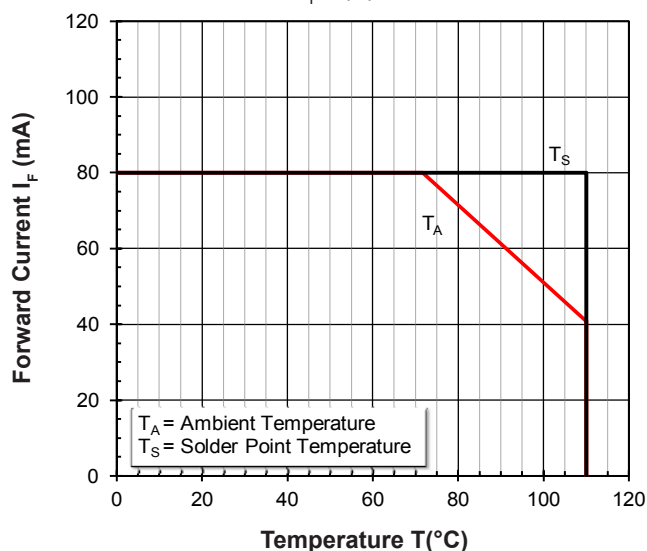
Forward Current Vs Forward Voltage

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



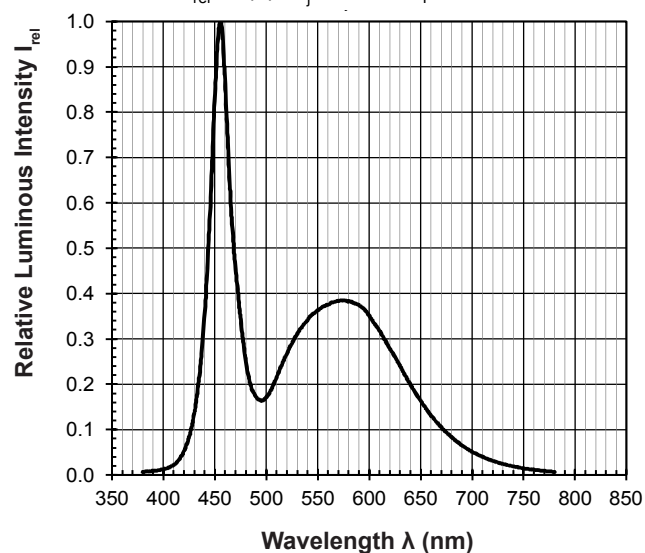
Maximum Current Vs Temperature

$$I_F = f(T)$$



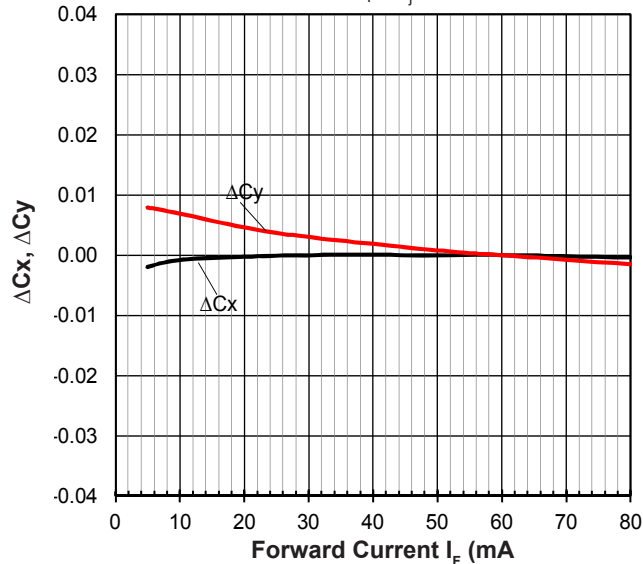
Relative Spectral Emission

$$I_{rel} = f(\lambda); T_j = 25^\circ\text{C}; I_F = 60\text{mA}$$



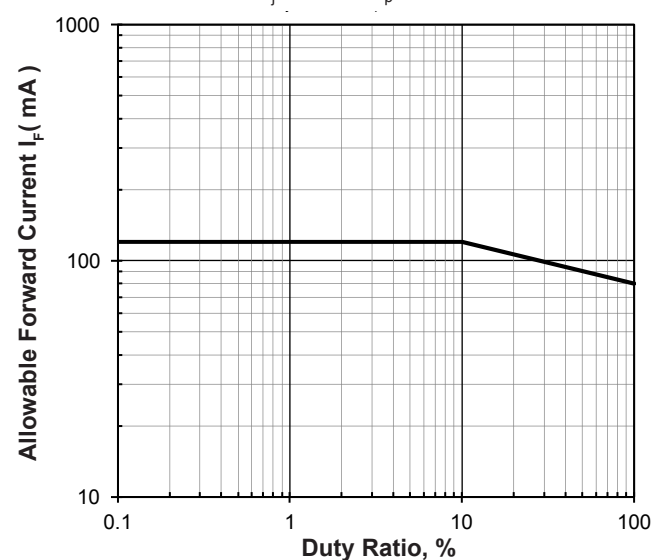
Chromaticity Coordinate Shift Vs Forward Current

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

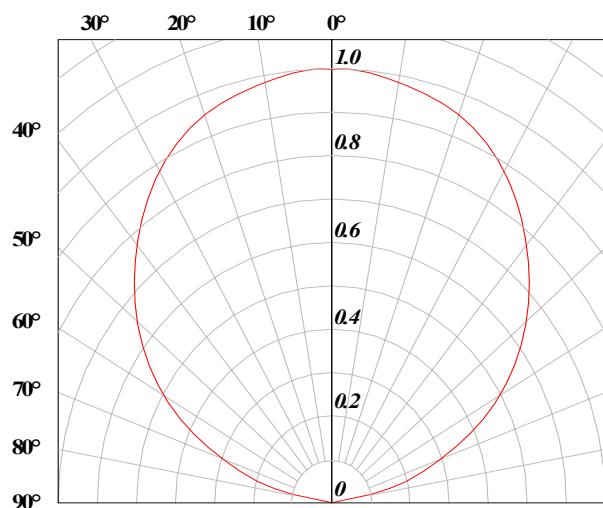


Allowable Forward Current Vs Duty Ratio

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

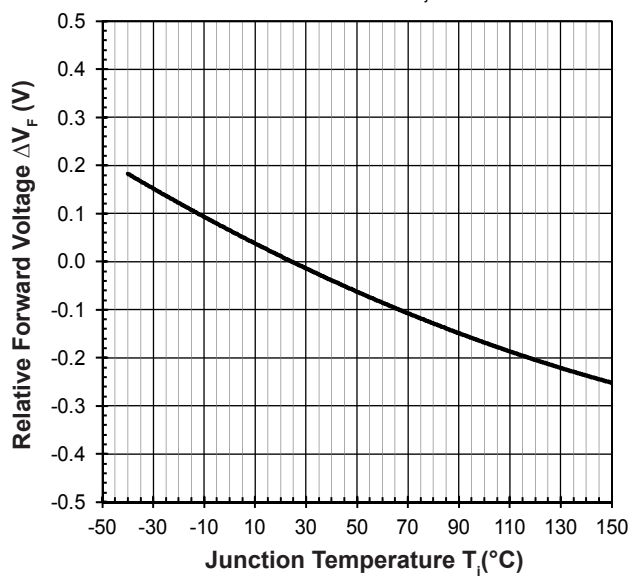


Radiation Pattern



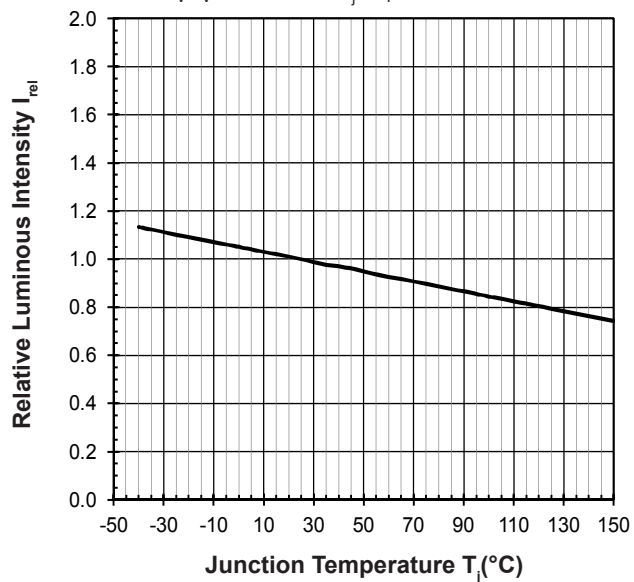
Relative Forward Voltage Vs Junction Temperature

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 60\text{mA}$$



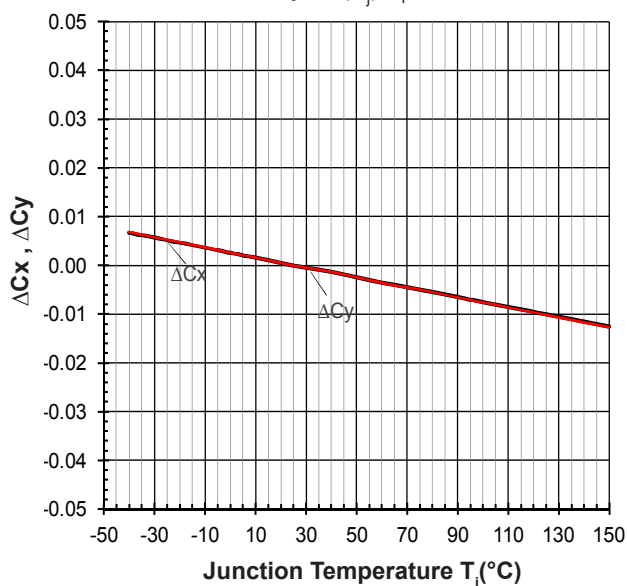
Relative Luminous Intensity Vs Junction Temperature

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 60\text{mA}$$

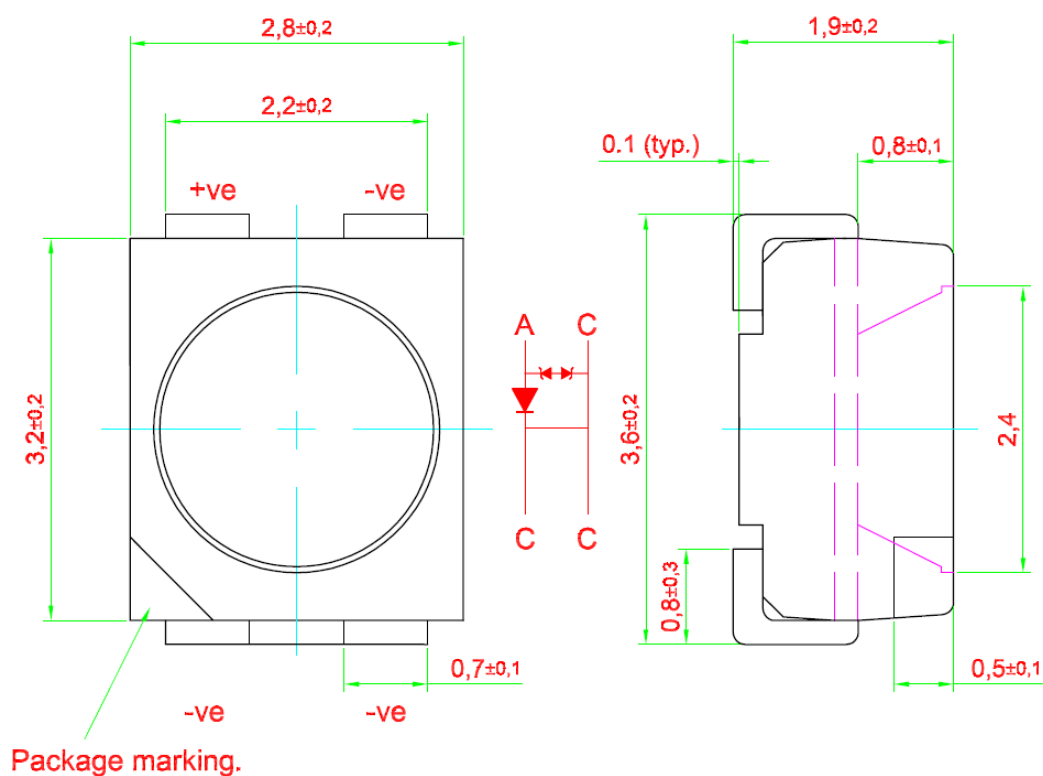


Chromaticity Coordinate Shift Vs Junction Temperature

$$\Delta Cx, \Delta Cy = f(T_j); I_F = 60\text{mA}$$



Power DomiLED™ • InGaN White : DWW-KZKG Package Outlines

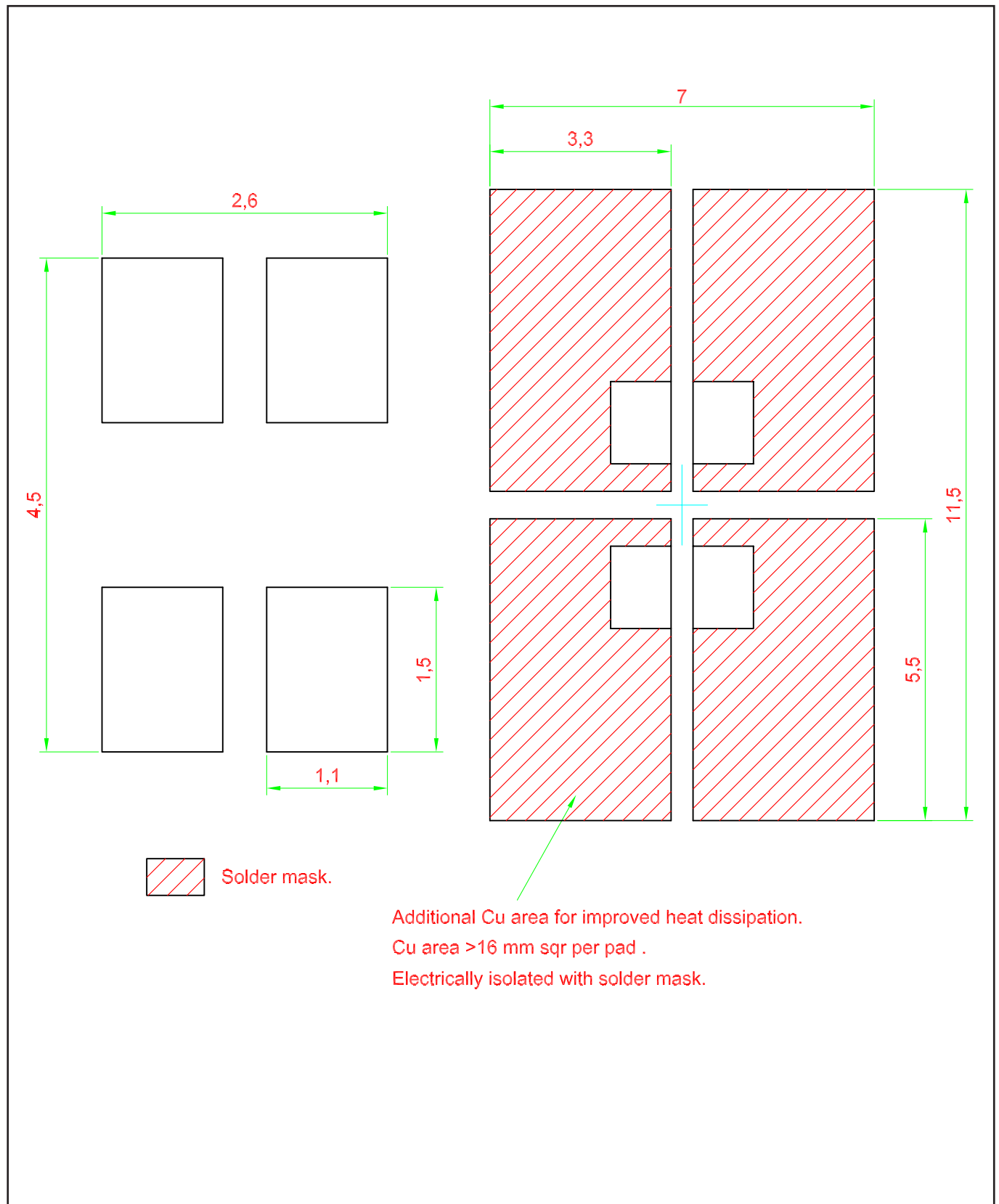


Note : Primary thermal path is through Cathode lead of LED package.

Material

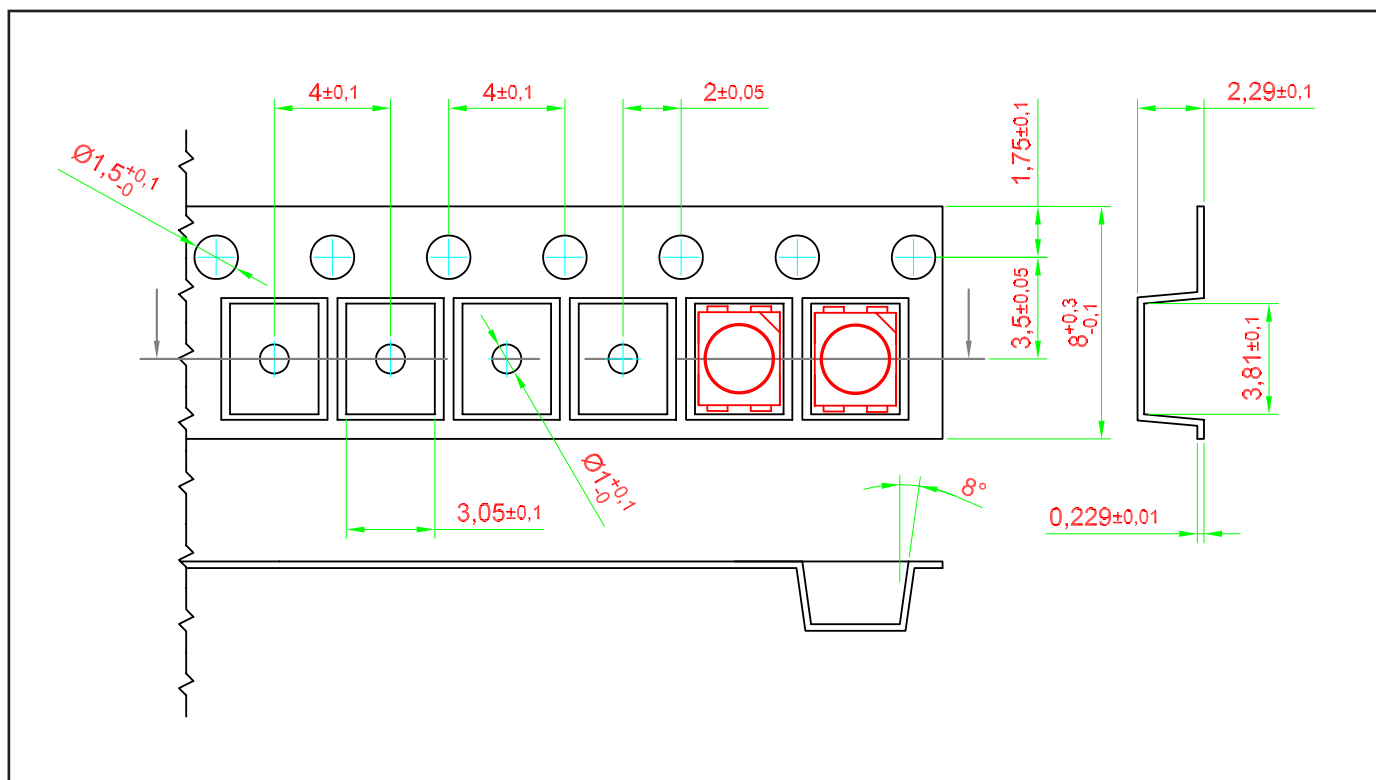
Material	
Lead-frame	Cu Alloy With Au Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone
Soldering Leads	Au Plating

Recommended Solder Pad

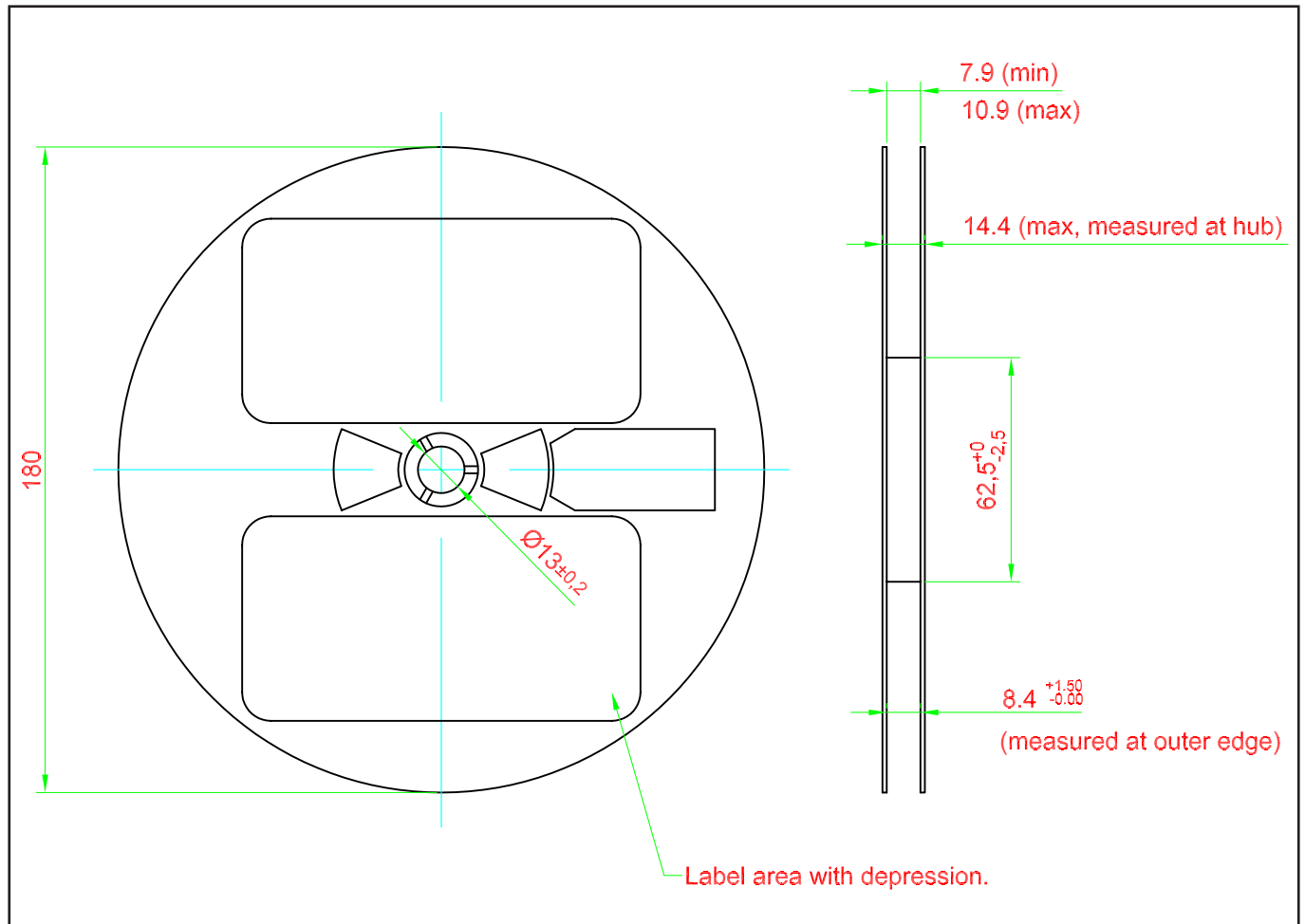


Taping and orientation

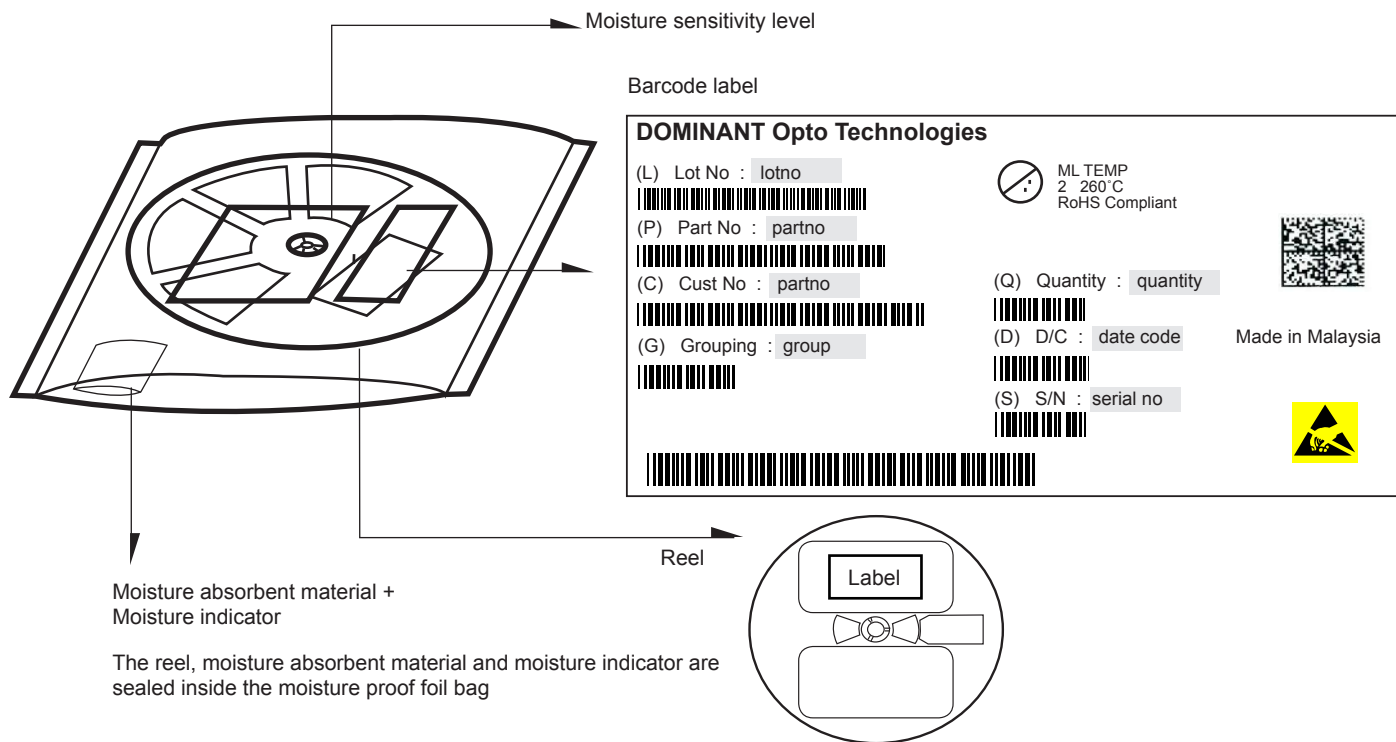
- Reels come in quantity of 2000 units.
- Reel diameter is 180 mm.



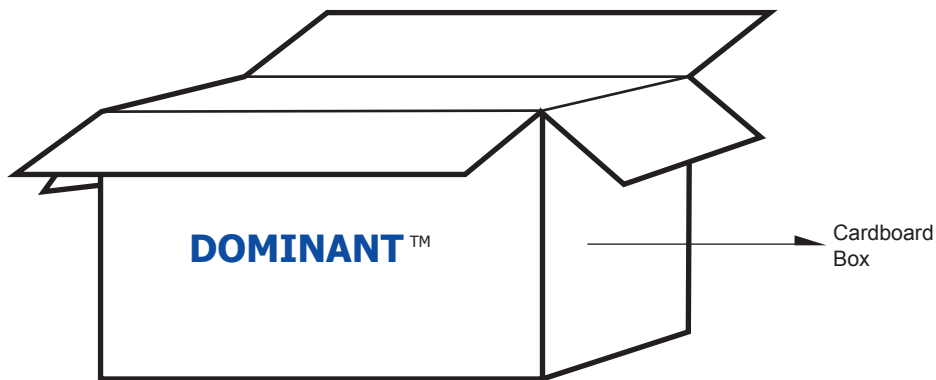
Packaging Specification



Packaging Specification



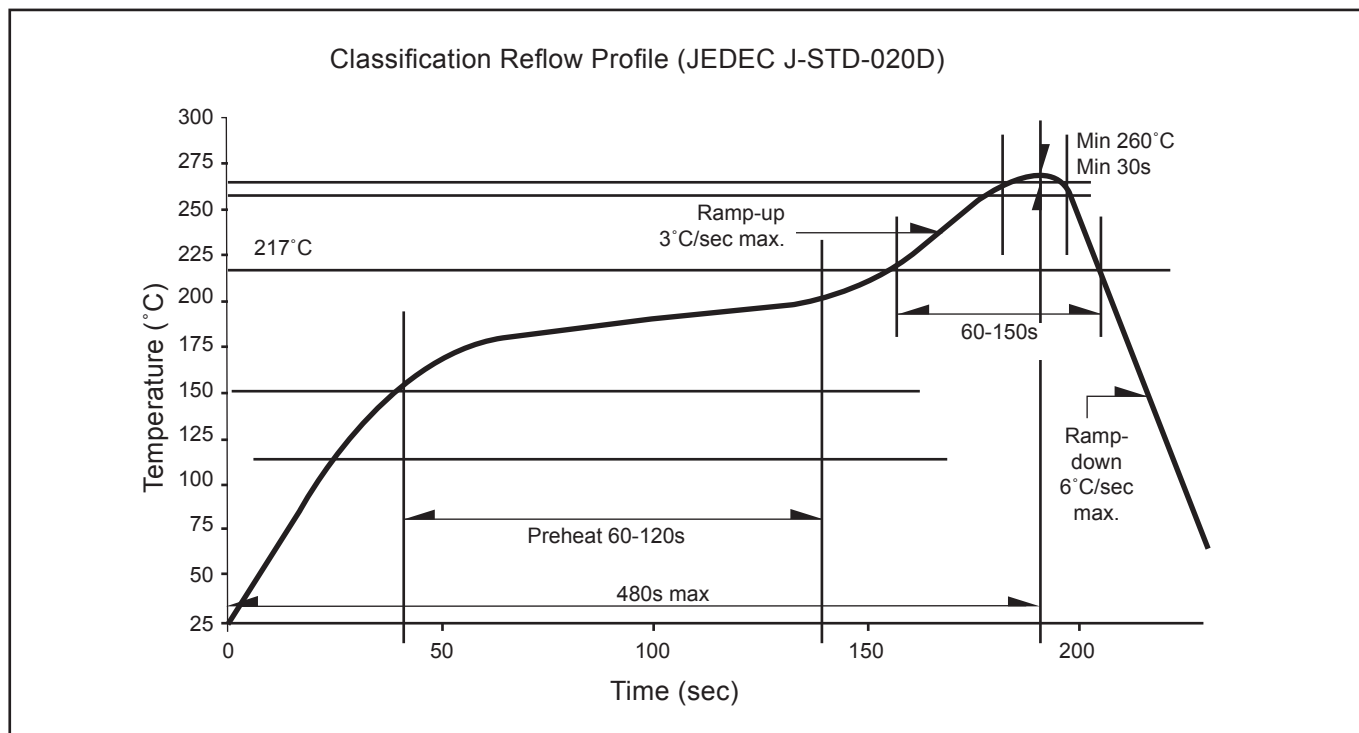
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	240 ± 10



For Power 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 $k=3$).

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	13 Jan 2015
3	Add Characteristics	26 Feb 2015
1, 2, 6, 7, 12	Update Features and Applications Update Graph Update Thermal Resistance Update Packaging Specification	09 May 2016
7, 8, 14	Add Notes in Package Outline Typo Error in Material Update Graph: Relative Luminous Intensity Vs Junction Temperature Add Appendix	03 Nov 2016

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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