

Power DomiLED

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLED™ 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-Q102.
- > Superior corrosion resistant.



Applications:

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

Optical Characteristics (T_j=25°C)

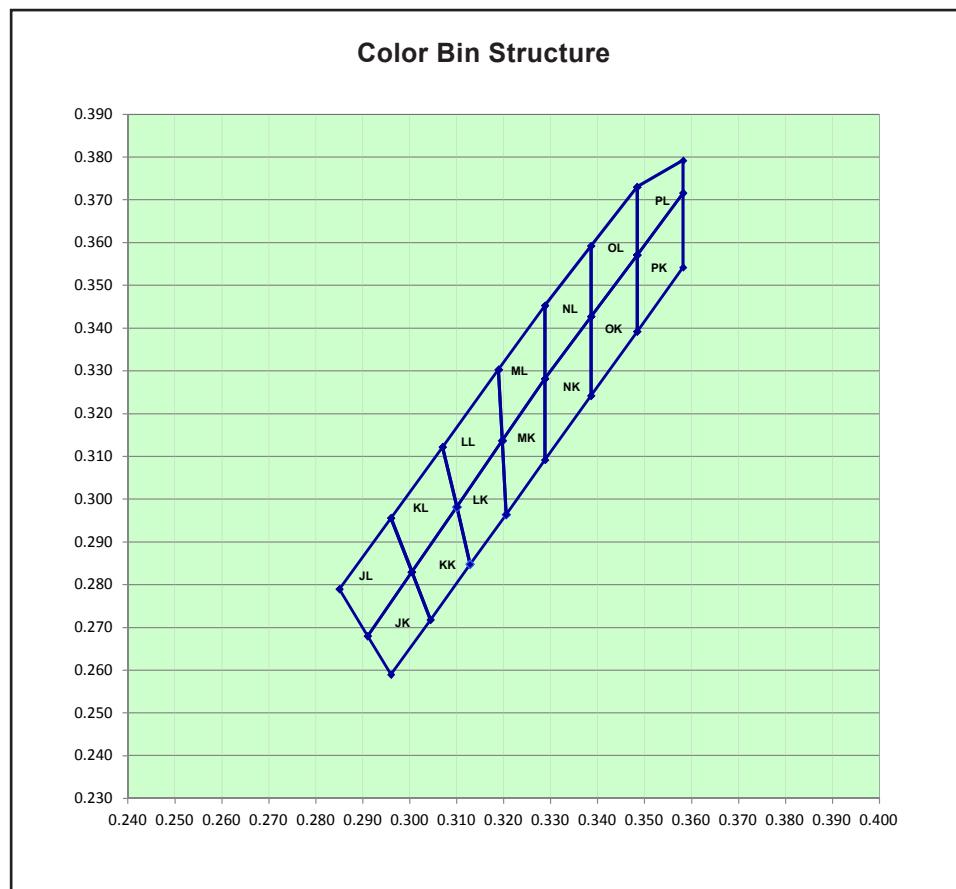
Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 30mA Min.	IV (mcd) ^{Appx. 1.1} Typ.	Max.
DWW-EZKG-XY1-1	White	120	1800.0	2600.0	3550.0

Electrical Characteristics at T_j=25°C

Part Number	V _f @ I _f = 30mA ^{Appx. 3.1}		
	Min. (V)	Typ. (V)	Max. (V)
DWW-EZKG	2.65	2.90	3.30

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (T _s =55 °C, t _p ≤ 100μs, Duty cycle = 0.03)	100	mA
Reverse voltage; I _r (max) = 10μA	Not designed for reverse bias	V
ESD threshold (HBM)	4000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +110	°C
Storage temperature	-40 ... +125	°C
Power dissipation (at room temperature)	300	mW
Thermal resistance (Rated current = 30mA, T _s =25 °C)		
- Real Thermal Resistance		
Junction / ambient, R _{th} JA real	280	K/W
Junction / solder point, R _{th} JS real	130	K/W
- Electrical Thermal Resistance		
Junction / ambient, R _{th} JA el	220	K/W
Junction / solder point, R _{th} 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 purposes.

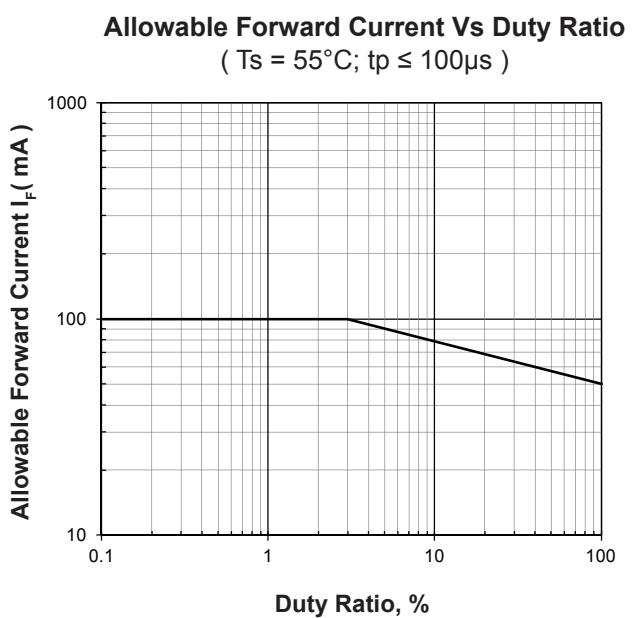
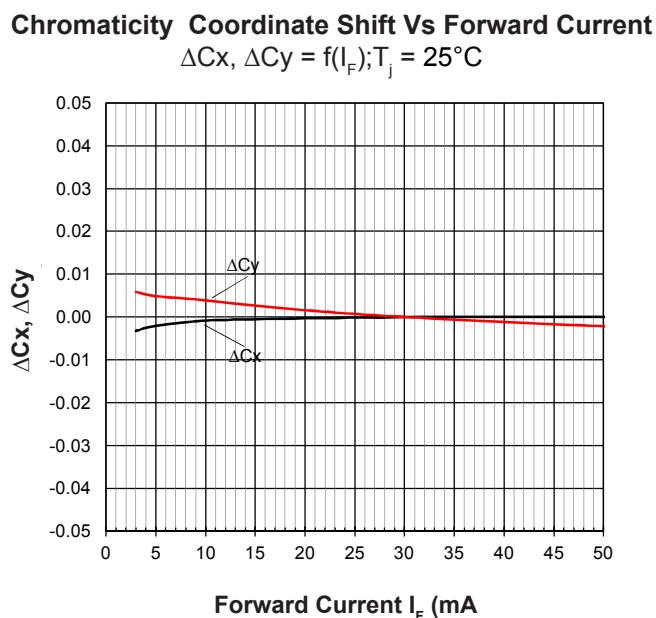
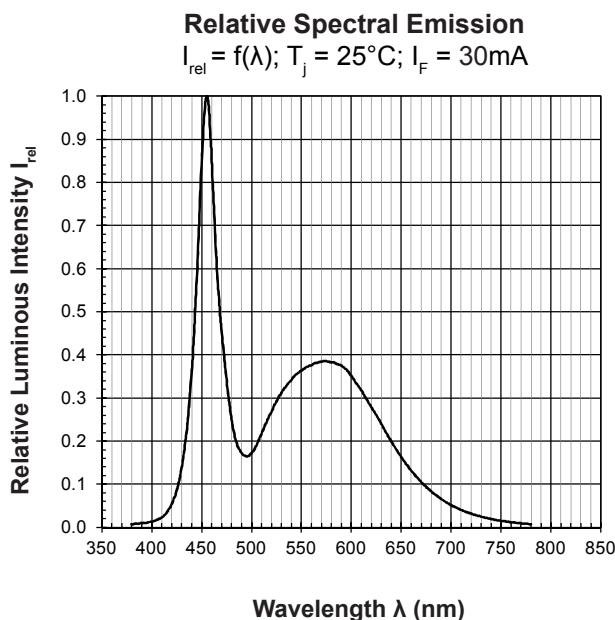
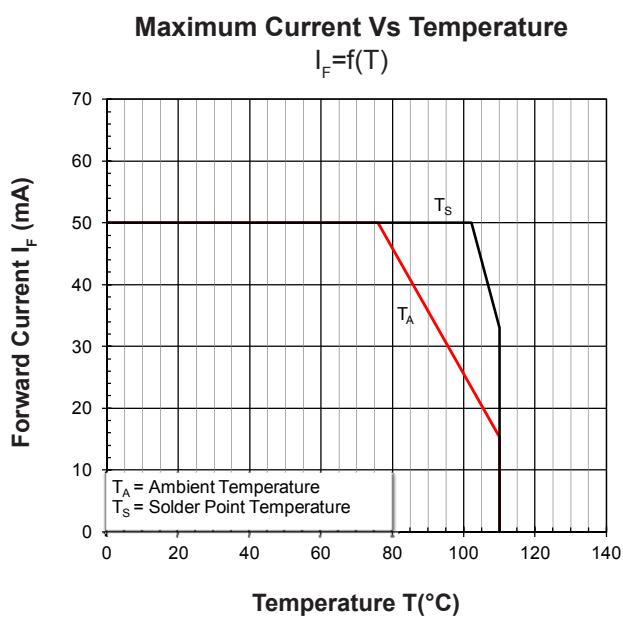
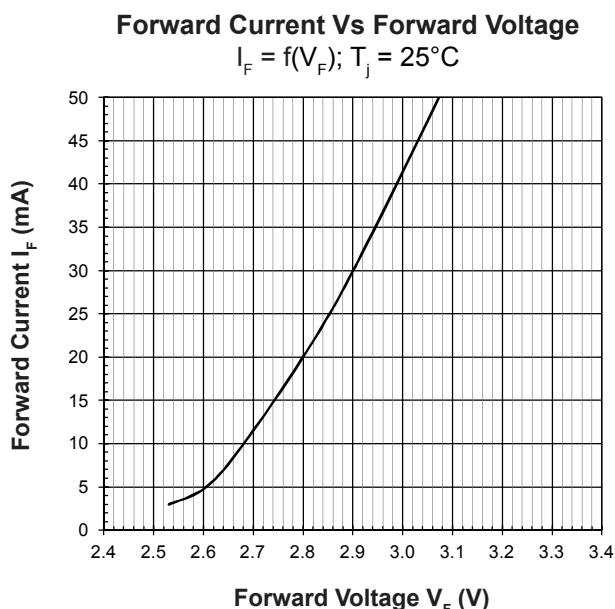
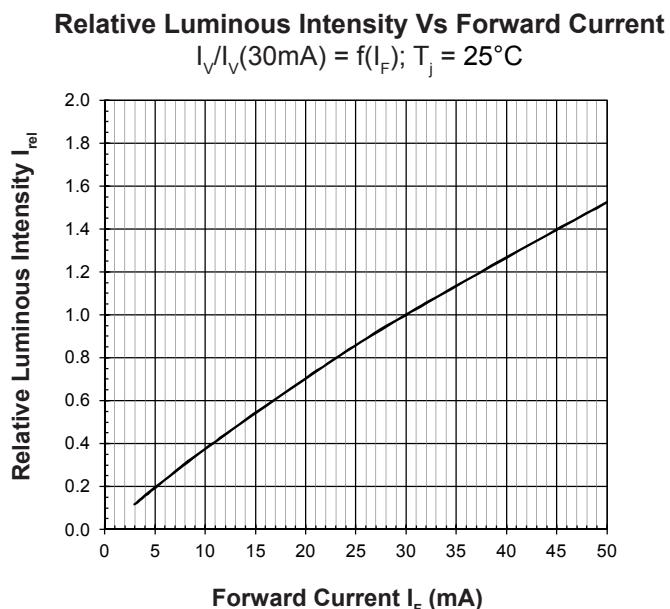
Luminous Intensity Group at Tj=25°C

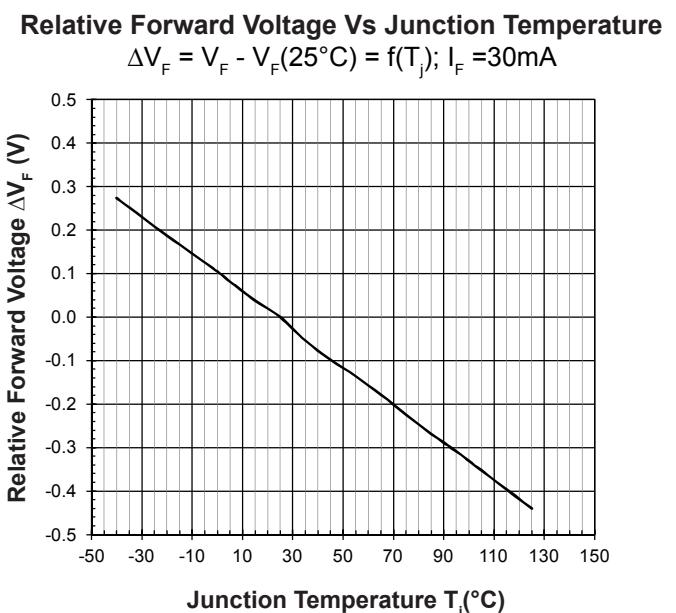
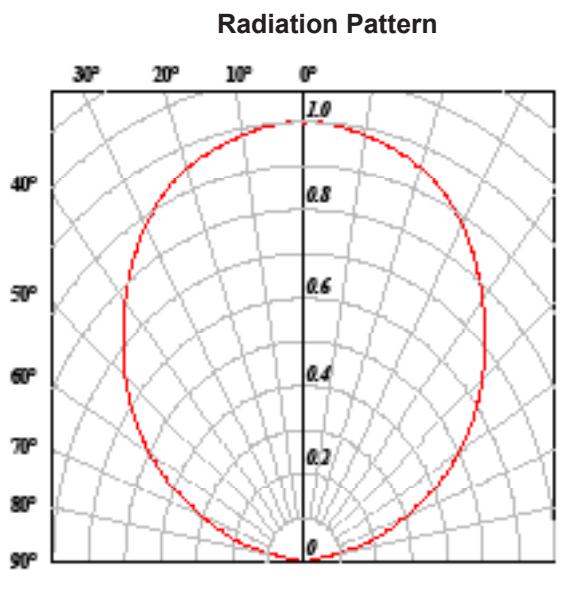
Brightness Group	Luminous Intensity <small>Appx. 1.1</small> IV (mcd)
X1	1800.0 ... 2240.0
X2	2240.0 ... 2850.0
Y1	2850.0 ... 3550.0

Vf Bining (Optional)

Vf Bin @ 30 mA	Forward Voltage (V) <small>Appx. 3.1</small>
VV5	2.60 ... 2.90
VV6	2.90 ... 3.20
VV7	3.20 ... 3.50

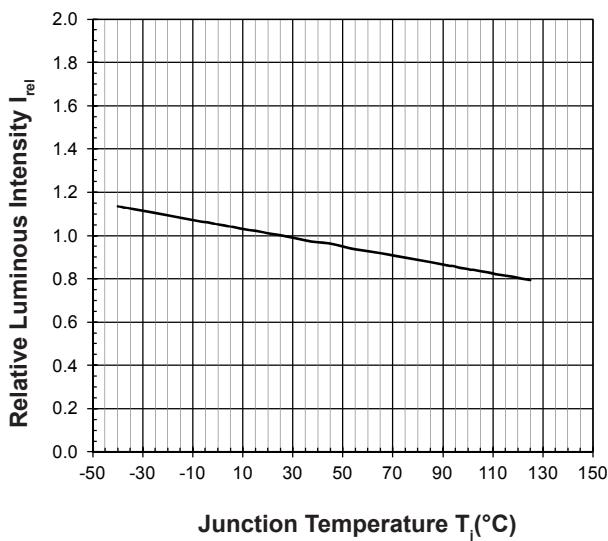
Please consult sales and marketing for special part number to incorporate Vf binning.





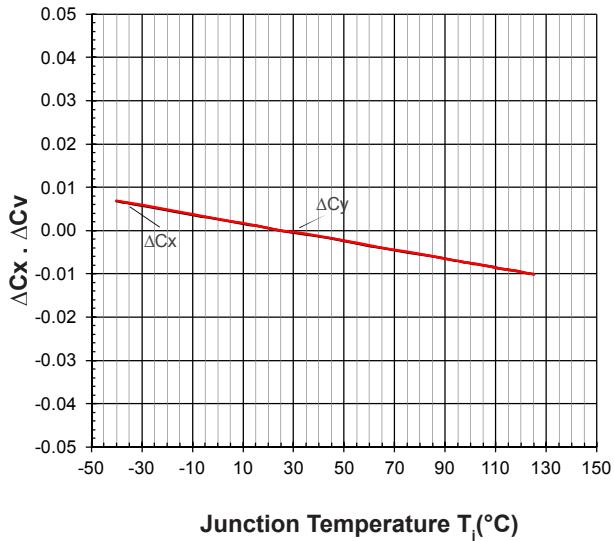
Relative Luminous Intensity Vs Junction Temperature

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 30\text{mA}$$

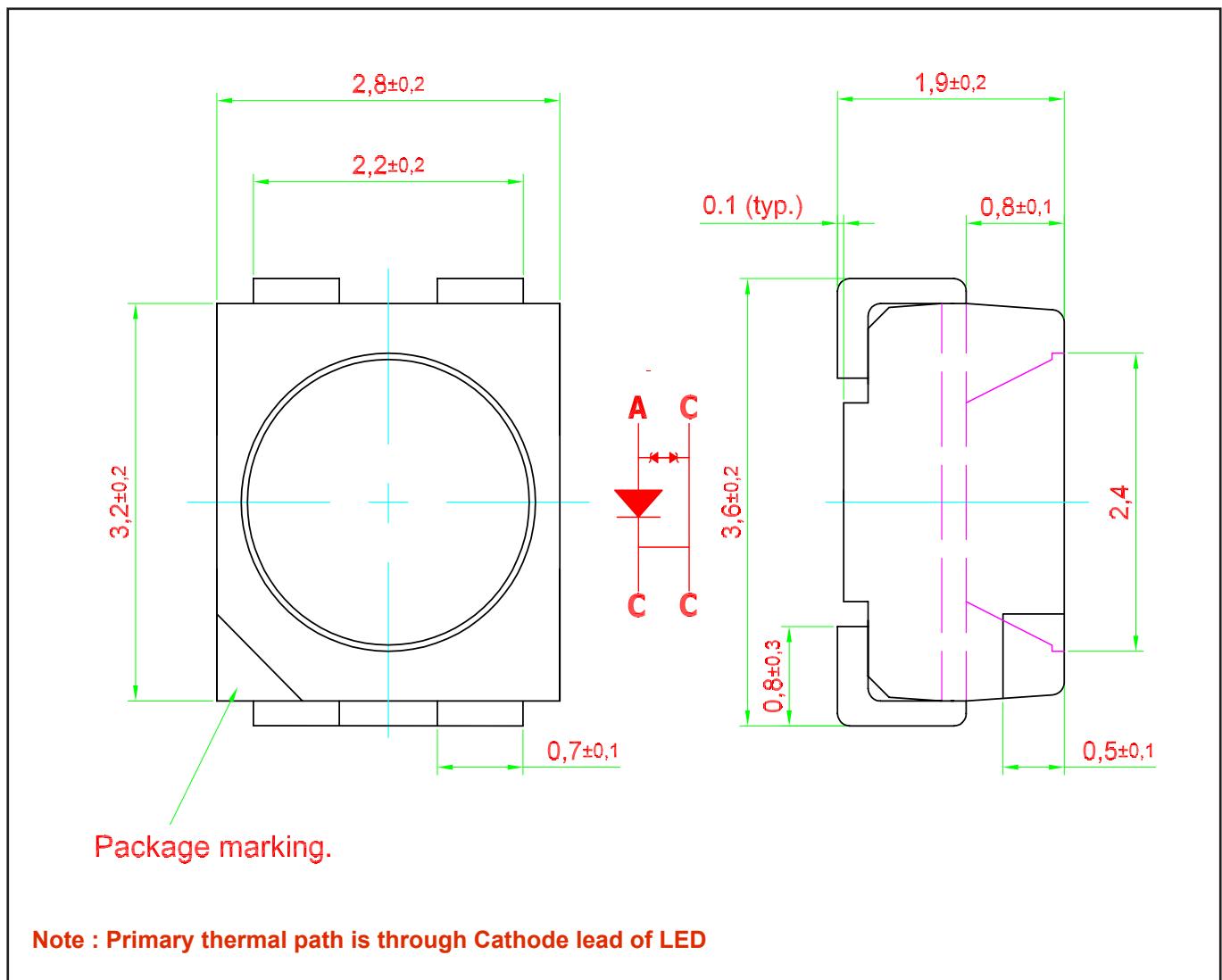


Chromaticity Coordinate Shift Vs Junction Temperature

$$\Delta Cx, \Delta Cy = f(T_j); I_F = 30\text{mA}$$



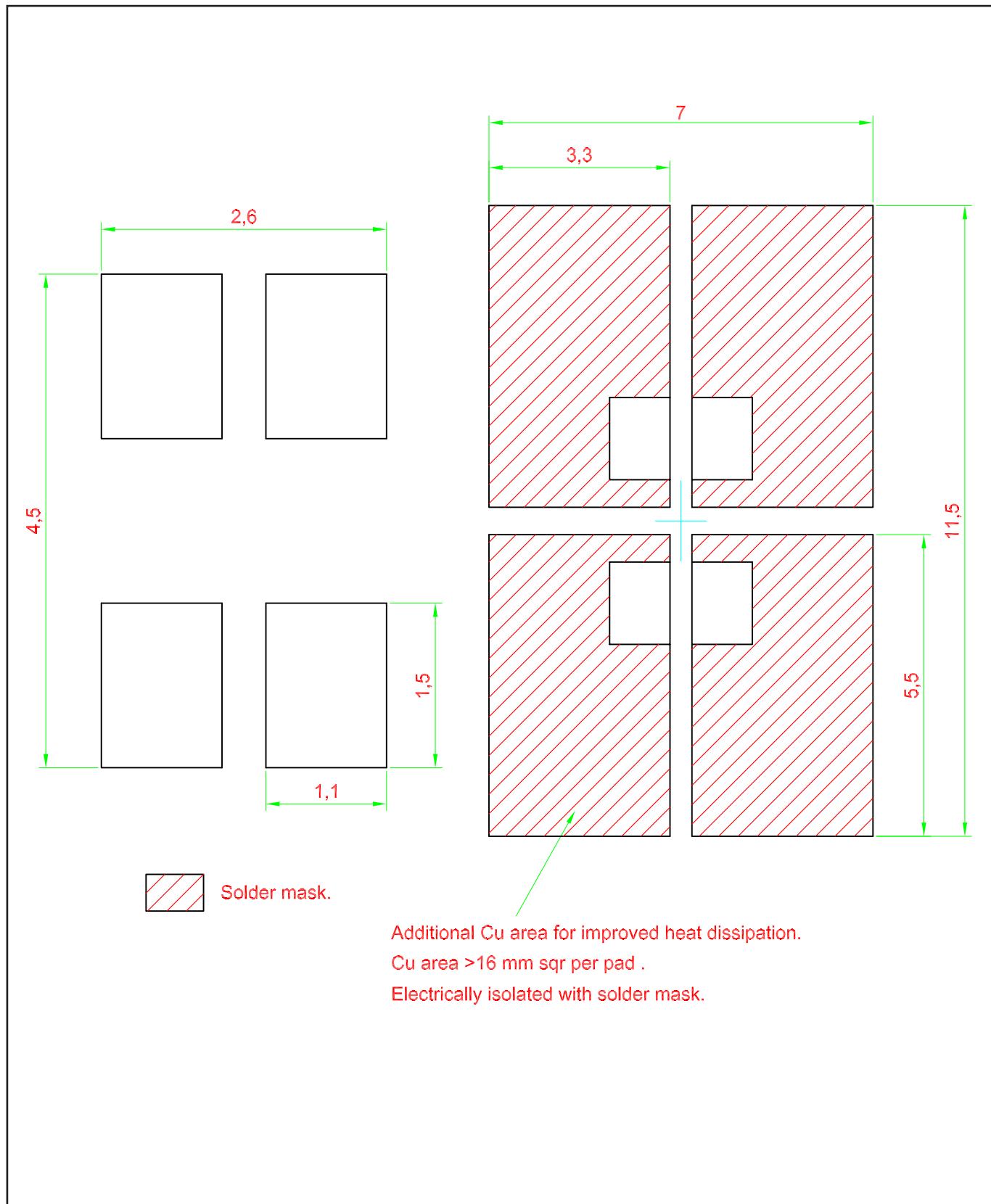
Power DomiLED • InGaN : DWW-EZKG-1 Package Outlines



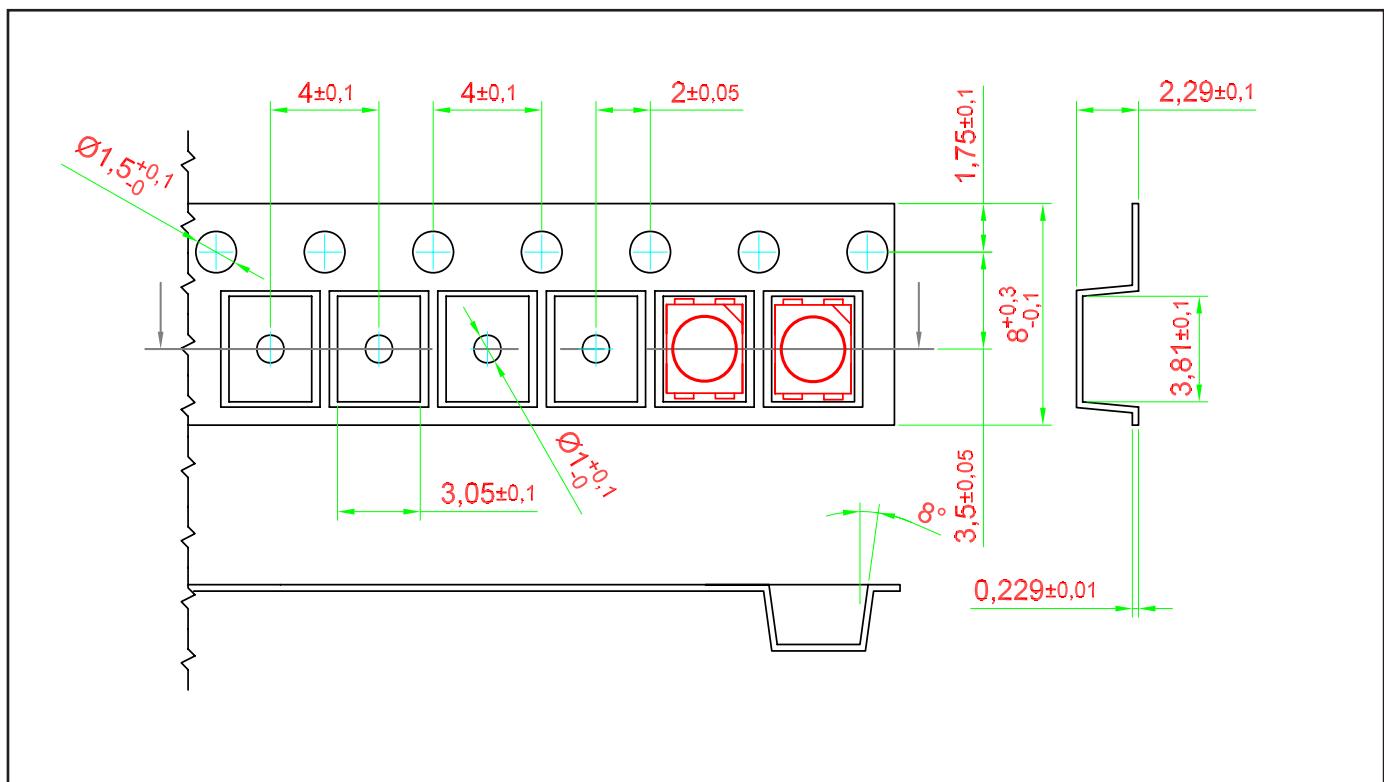
Material

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

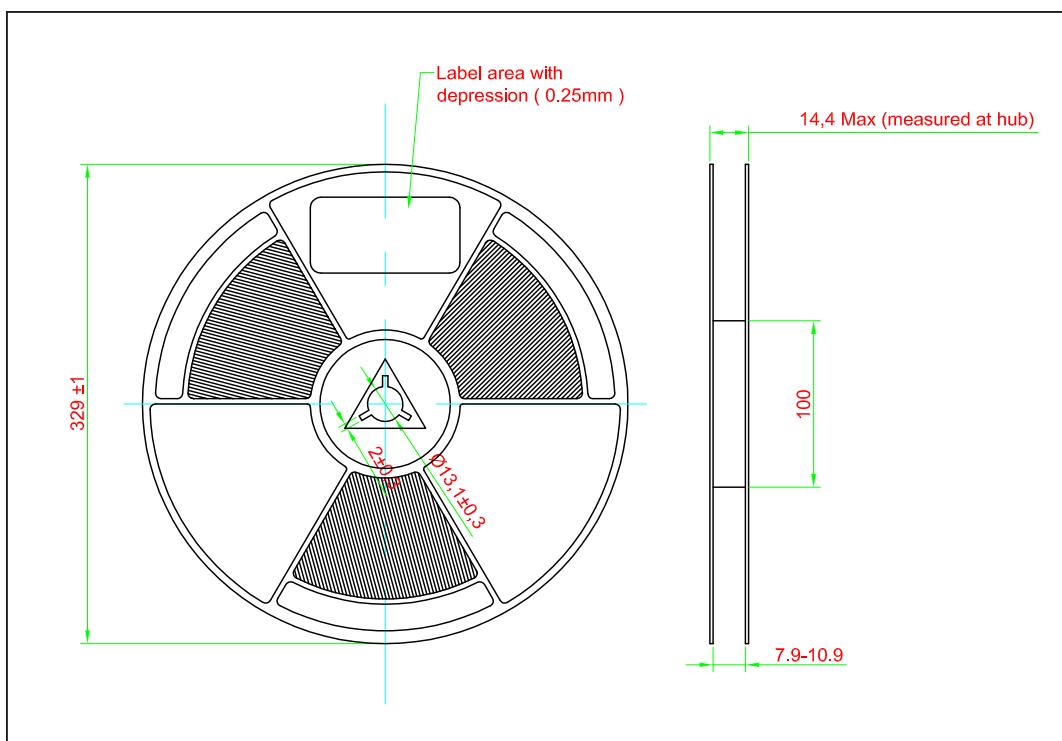
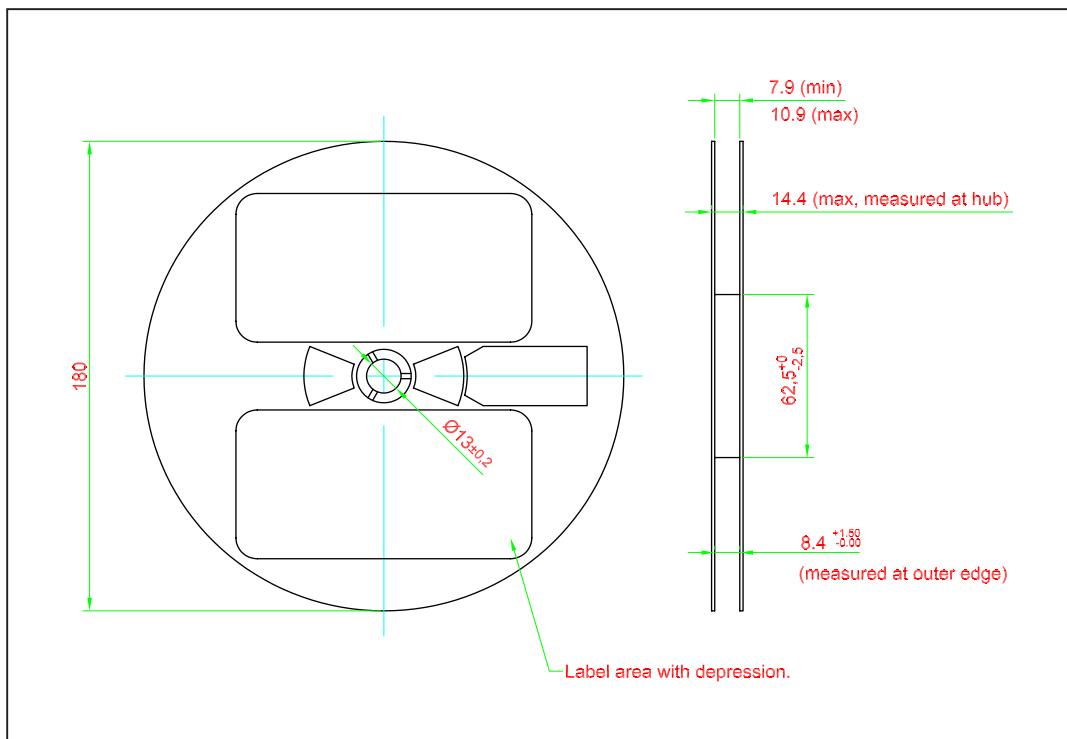
Recommended Solder Pad



Taping and orientation

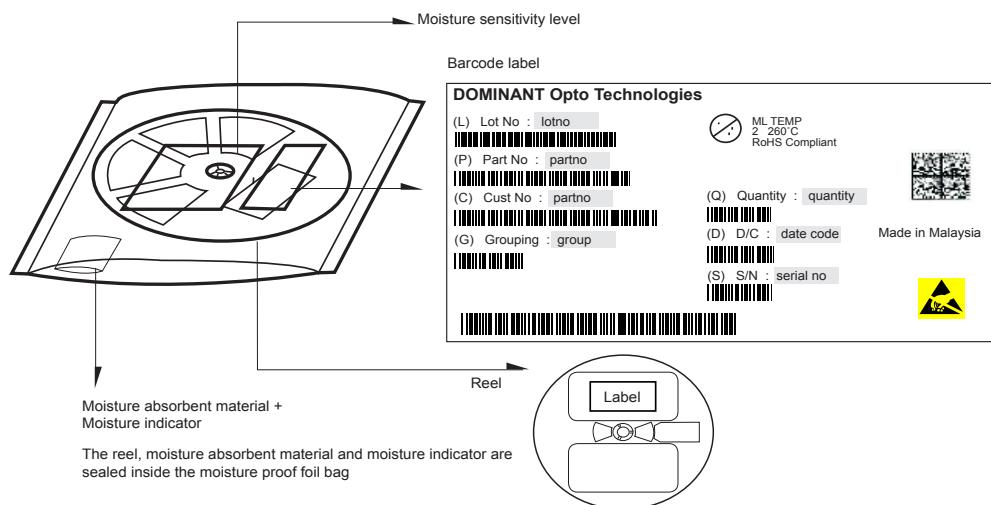


Packaging Specification

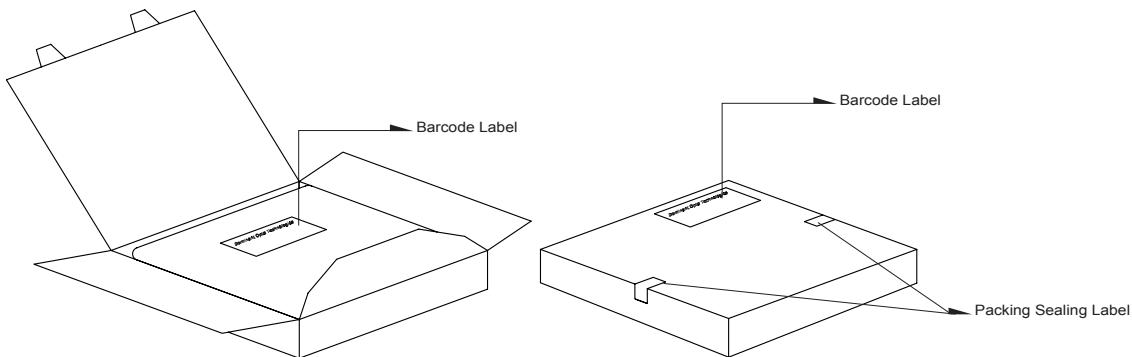


	Reel Diameter (mm)	Quantity (pcs)	Partno
Standard Packing	180	2000	DWW-EZKG-xxx-x
Optional Packing	329	8000	DWW-EZKG-xxx-x-8

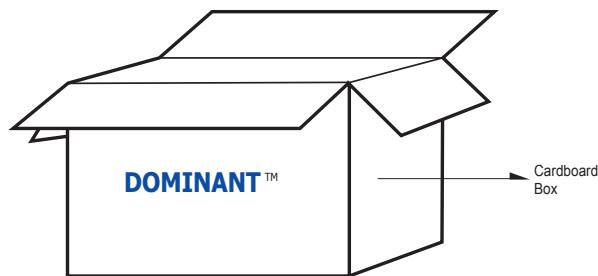
Packaging Specification



Quantity per bag (pcs)	Average 1pc Power DomiLED (gram)	1 completed bag (gram)
2000	0.034	240 ± 10
8000	0.034	750 ± 10



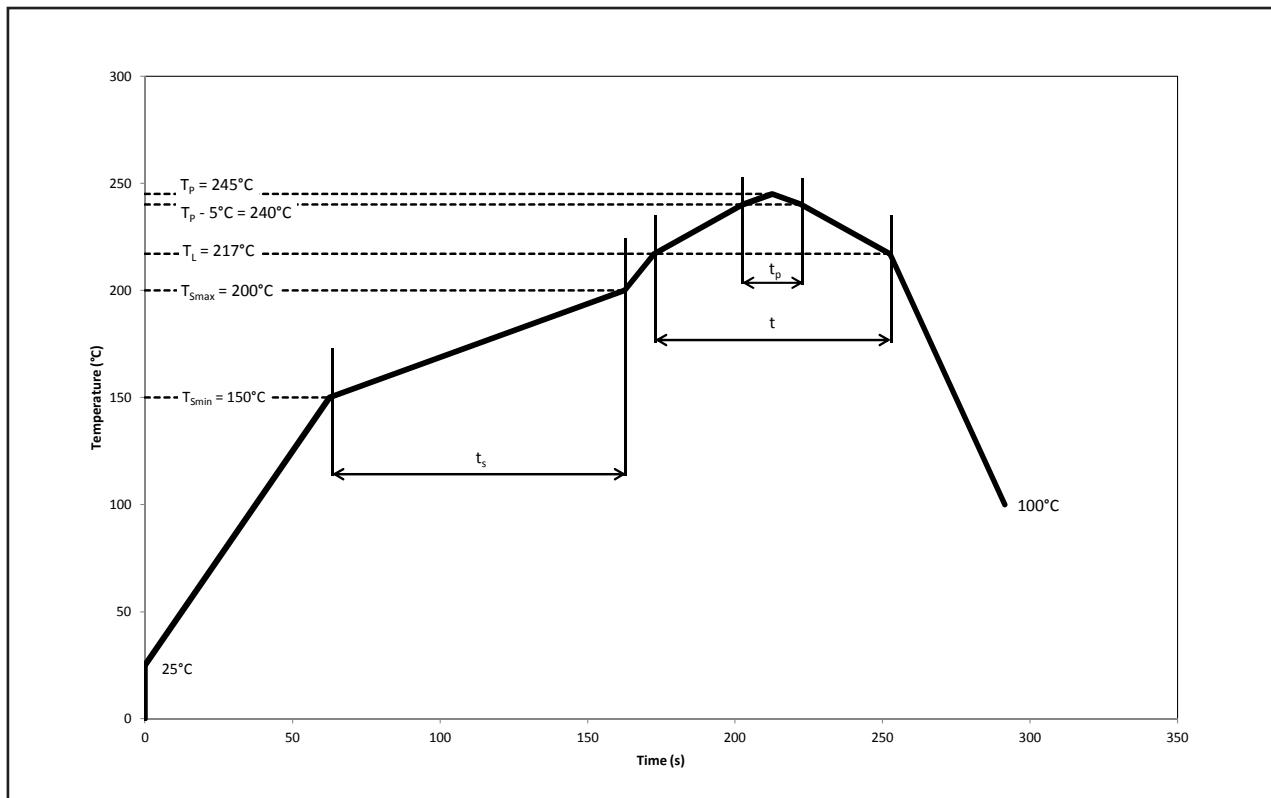
Reel Diameter (mm)	Packing Box Dimensions (mm)
180	210 x 210 x 16
329	345 x 345 x 16



Reel Diameter (mm)	Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
180	Super Small	325 x 225 x 190	0.38	9 reels MAX
180	Small	325 x 225 x 280	0.54	15 reels MAX
180	Medium	570 x 440 x 230	1.46	60 reels MAX
180	Large	570 x 440 x 460	1.92	120 reels MAX
329	Medium	373 x 373 x 285	1.02	13 reels MAX
329	Large	580 x 373 x 405	1.50	30 reels MAX

Recommended Pb-free Soldering Profile

Product complies to MSL Level 2 acc. to JEDEC



Pb-Free Assembly					
Profile Feature	Symbol	Min.	Recommended	Max.	Unit
Ramp-up rate to preheat 25°C to T_{Smin}	-	-	2	3	°C/s
Time t_s T_{Smin} to T_{Smax}	t_s	60	100	120	s
Ramp-up rate to peak T_L to T_p	-	-	2	3	°C/s
Liquidous temperature	T_L	-	217	-	°C
Time above liquidous temperature	t	60	80	150	s
Peak temperature	T_p	-	245	260	°C
Time within 5°C of the specified peak temperature $T_p - 5^\circ\text{C}$	T_p	10	20	30	s
Ramp-down rate T_p to 100°C	-	-	3	6	°C/s
Time 25°C to T_p	-	-	-	480	s

Appendix**1) Brightness:**

- 1.1 Luminous intensity is measured at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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 at current pulse 25 ms(typ) 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, Vf is measured when a current pulse of 8 ms(typ) 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).

4) Typical Values:

- 4.1 At special conditions of LED manufacturing processes, typical data or calculated correlations of technical parameters only reflect the statistical figures. But not necessarily correspond to the actual parameters of each single product, which could differ from the typical data or calculated correlations or the typical characteristic line. These typical data may change whenever technical improvements happen.

5) Tolerance of Measure

- 5.1 Unless otherwise noted in drawing, tolerances are specified with ± 0.1 and dimension are specific in mm.

Revision History

Page	Subjects	Date of Modification
-	Initial Release	19 Jan 2017
1, 2, 6, 11, 12, 13, 14, 15	Update Features Update Peak Pulse Current Test Condition Update Graph: Allowable Forward Current Vs Duty Ratio Update Package Specification Update Recommended Pb-free Soldering Profile Update Appendix	28 Aug 2020

NOTE

All the information contained in this document is considered to be reliable at the time of publishing. However, DOMINANT Opto Technologies does not assume any liability arising out of the application or use of any product described herein.

DOMINANT Opto Technologies reserves the right to make changes to any products in order to improve reliability, function or design.

DOMINANT Opto Technologies products are not authorized for use as critical components in life support devices or systems without the express written approval from the Managing Director of DOMINANT Opto Technologies.

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, an IATF 16949 and ISO 14001 certified company, can be found under <http://www.dominant-semi.com>.

Please contact us for more information:

DOMINANT Opto Technologies Sdn. Bhd
Lot 6, Batu Berendam, FTZ Phase III, 75350 Melaka, Malaysia.
Tel: +606 283 3566 Fax: +606 283 0566
E-mail: sales@dominant-semi.com