

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.
- > Compliance to automotive standard; AEC-Q102.



Applications:

- > Automotive: Interior applications, eg: switches, telematics, climate control system, dashboard, etc.



Optical Characteristics (Tj=25°C)

Part Number	Color	Viewing Angle°	Luminous Intensity @ 30mA IV (mcd) <i>Appx. 1.1</i>		
			Min.	Typ.	Max.
● DWT-LJG-WX2-1	True Green; 525nm	120	1125.0	1800.0	2850.0
DWT-LJG-X2Y-1	True Green; 525nm	120	2240.0	3550.0	4500.0
DWB-LJG-T2V1-1	Blue; 470nm	120	355.0	560.0	900.0
● Not for new design					

Electrical Characteristics at Tj=25°C

Part Number	Min. (V)	Vf @ If = 30mA <i>Appx. 3.1</i>			Vr @ Ir = 10uA <i>Appx. 6.1</i>	
		Typ. (V)	Max. (V)		Min. (V)	
DWx-LJG	3.00	3.30	4.00		5	

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (Ts=55 °C, tp ≤ 100µs, Duty cycle = 0.03)	100	mA
Reverse voltage <i>Appx. 6.1</i>	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +110	°C
Storage temperature	-40 ... +110	°C
Power dissipation (at room temperature)	200	mW
Thermal resistance		
- Junction / ambient, Rth JA	300	K/W
- Junction / solder point, Rth JS	180	K/W

Wavelength Grouping at Tj=25°C

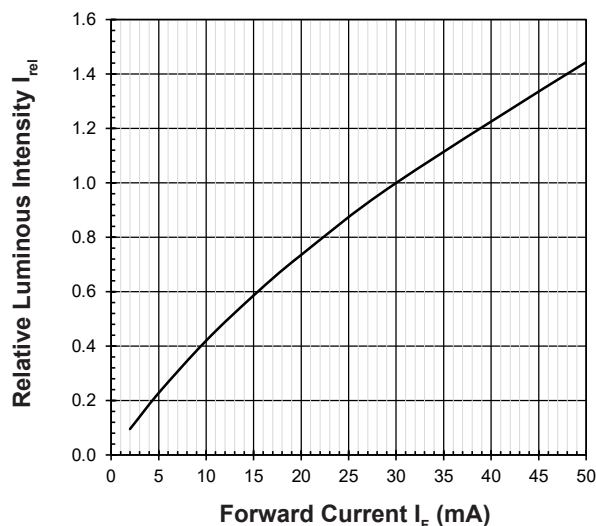
Color	Group	Wavelength distribution (nm) <i>Appx.2.2</i>
DWT; True Green	Full	520 - 535
	A	520 - 525
	B	525 - 530
	C	530 - 535
DWB; Blue	Full	460 - 475
	A0	460 - 465
	A	465 - 470
	B	470 - 475

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity <i>Appx. 1.1</i> IV (mcd)
T2	355.0 ... 450.0
U1	450.0 ... 560.0
U2	560.0 ... 715.0
V1	715.0 ... 900.0
W1	1125.0 ... 1400.0
W2	1400.0 ... 1800.0
X1	1800.0 ... 2240.0
X2	2240.0 ... 2850.0
Y1	2850.0 ... 3550.0
Y2	3550.0 ... 4500.0

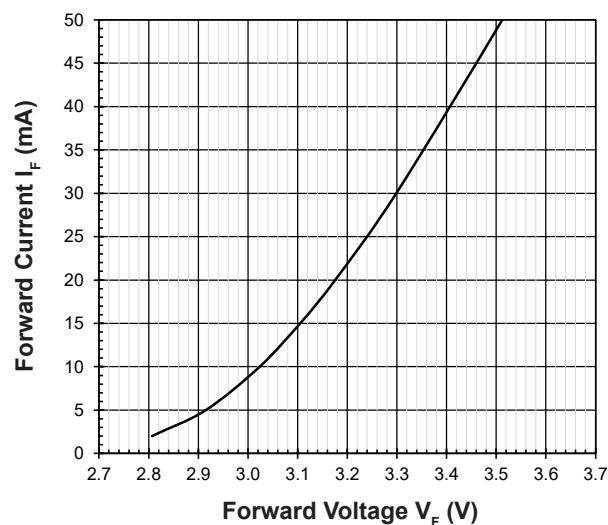
Relative Luminous Intensity Vs Forward Current

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



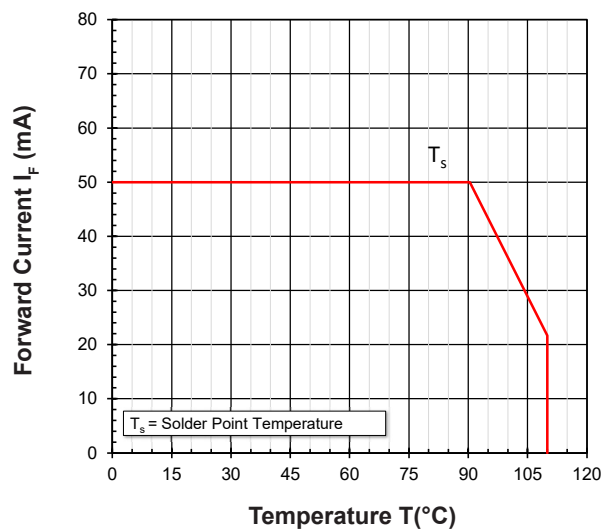
Forward Current Vs Forward Voltage

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



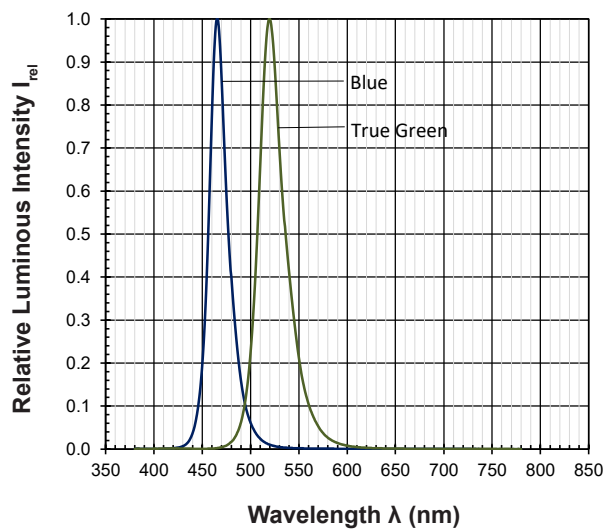
Maximum Current Vs Temperature

$$I_F = f(T)$$



Relative Spectral Emission

$$I_{rel} = f(\lambda); T_j = 25^\circ\text{C}; I_F = 30\text{mA}$$

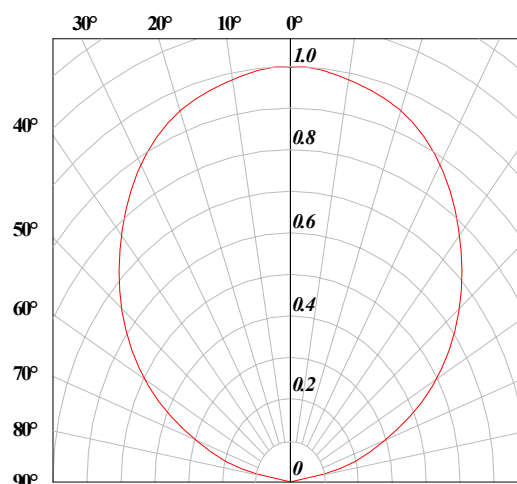


Allowable Forward Current Vs Duty Ratio

$$(T_s = 55^\circ\text{C}; t_p \leq 100\mu\text{s})$$

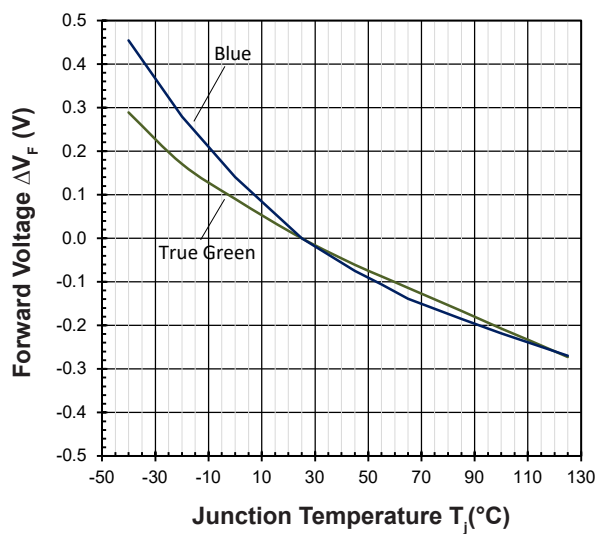


Radiation Pattern



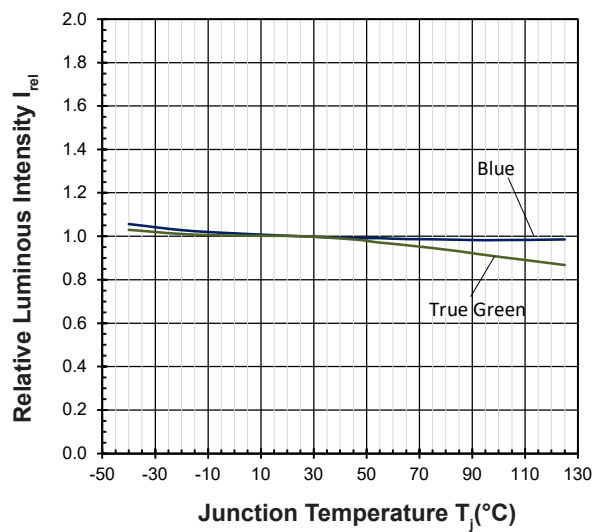
Forward Voltage Vs Junction Temperature

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 30\text{mA}$$



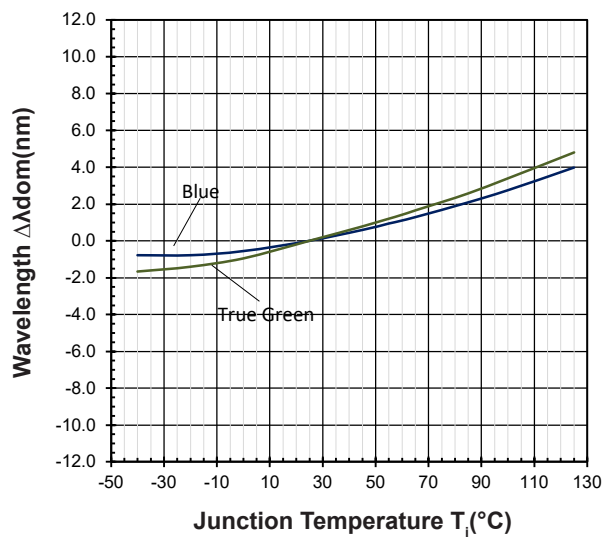
Relative Luminous Intensity Vs Junction Temperature

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



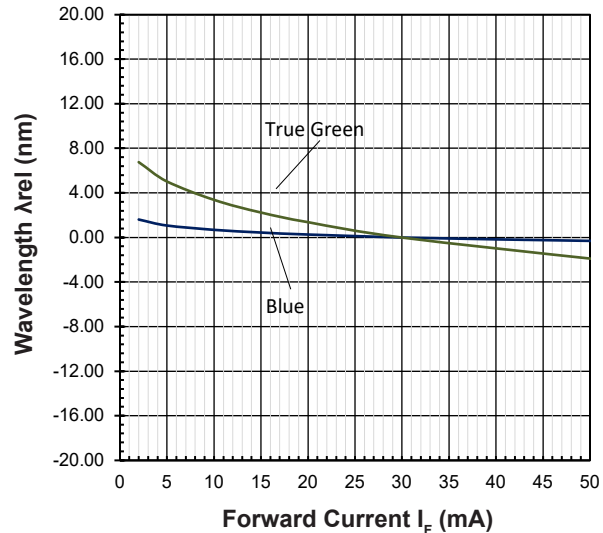
Wavelength Vs Junction Temperature

$$\Delta \lambda_{\text{dom}} = \lambda_{\text{dom}} - \lambda_{\text{dom}}(25^\circ\text{C}) = f(T_j); I_F = 30\text{mA}$$

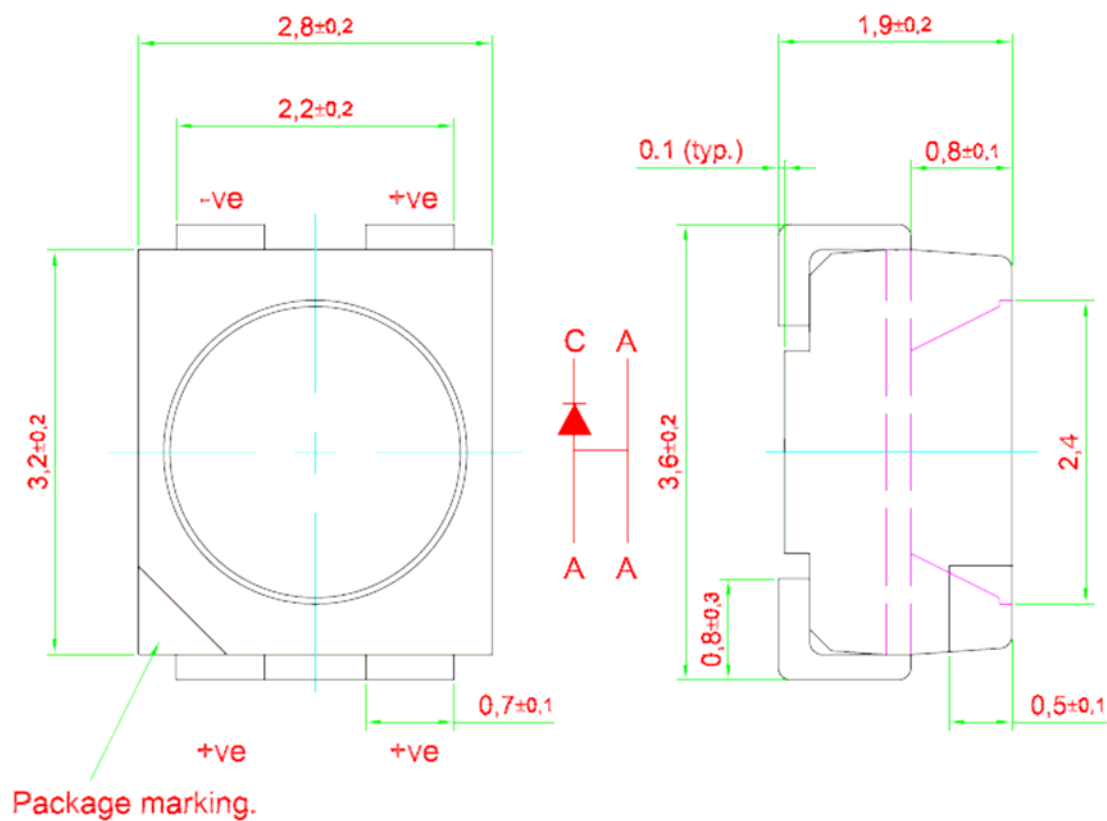


Wavelength Shift Vs Forward Current

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



Power DomiLED • InGaN : DWx-LJG Package Outlines

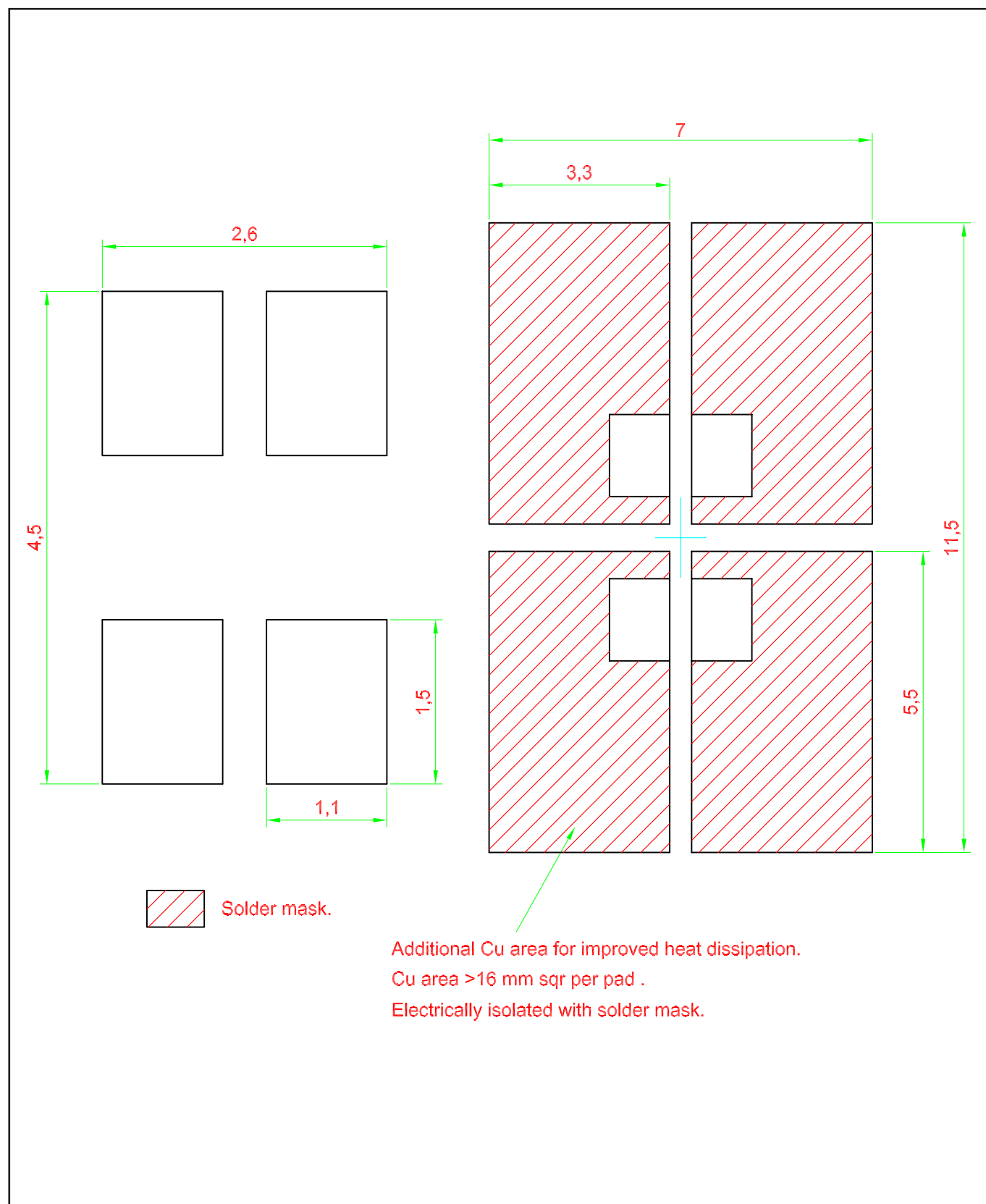


Note : Primary thermal path is through Anode lead of LED package.

Material

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

Recommended Solder Pad



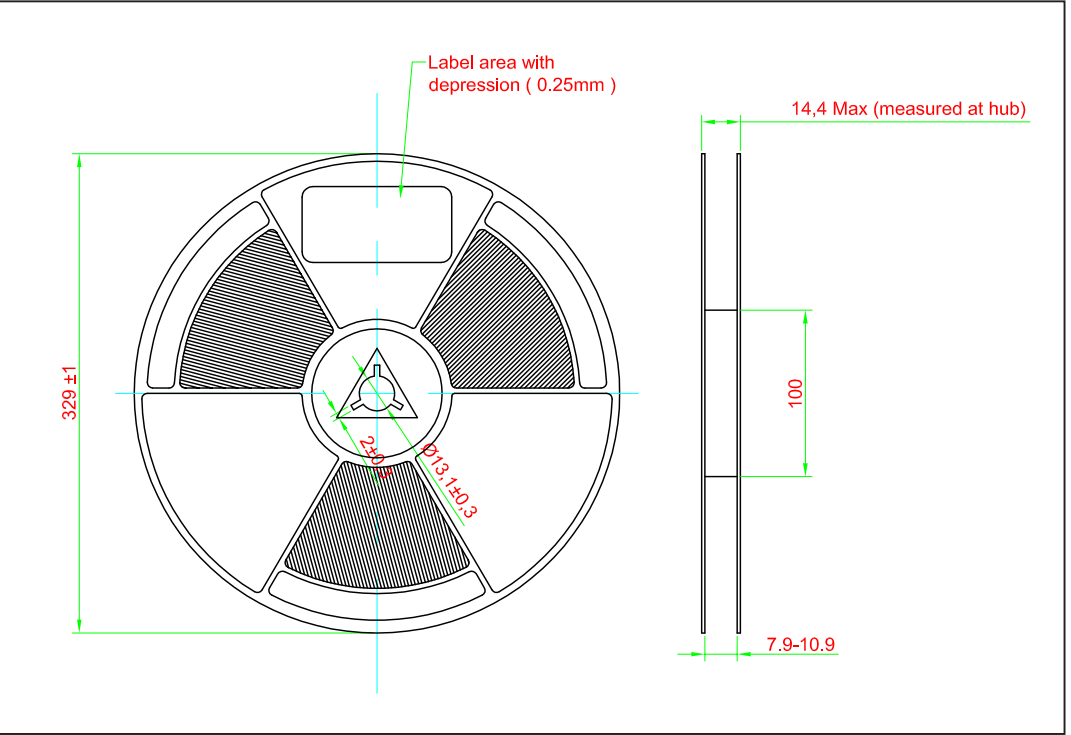
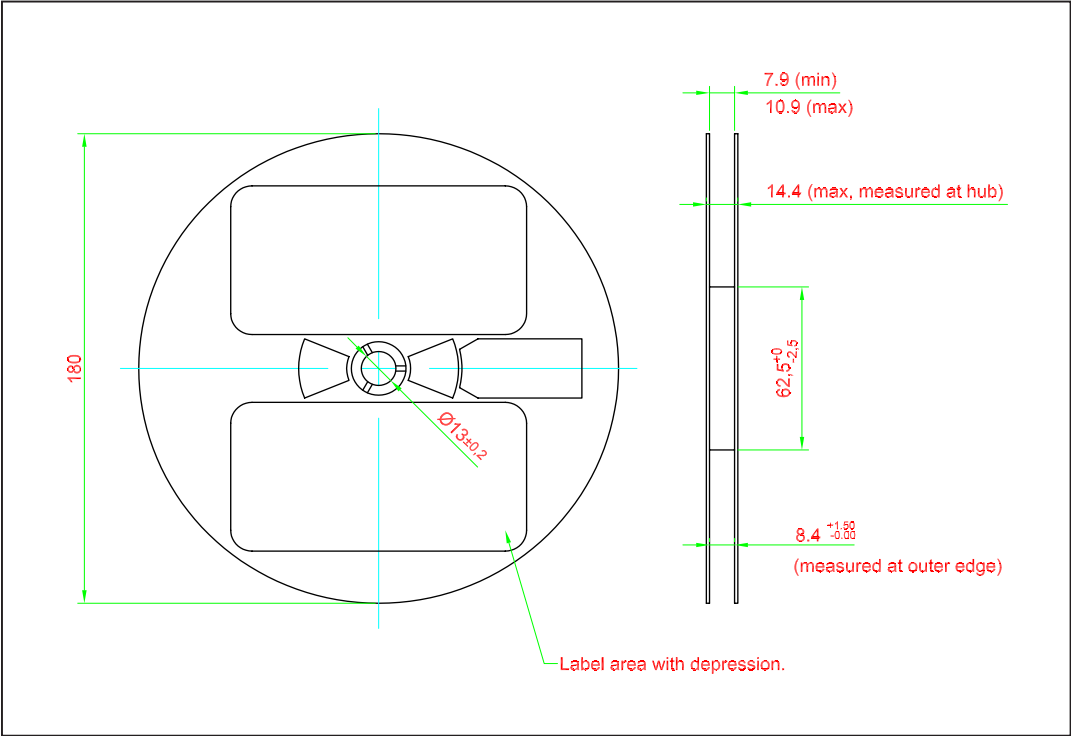
Technical drawing of a mechanical part, likely a bracket or plate, showing dimensions and a cross-section.

Dimensions (mm):

- Top horizontal dimensions: $4 \pm 0,1$, $4 \pm 0,1$, $2 \pm 0,05$
- Left vertical dimension: $\varnothing 1,5 \pm 0,1$
- Right vertical dimensions: $1,75 \pm 0,1$, $8 \pm 0,3$ (with $-0,1$ below), $3,81 \pm 0,1$
- Bottom horizontal dimensions: $3,05 \pm 0,1$, $3,5 \pm 0,05$, $0,229 \pm 0,01$
- Right horizontal dimension: $2,29 \pm 0,1$
- Angle: 8°
- Internal hole diameter: $\varnothing 1 \pm 0,1$

Cross-section A-A: A vertical section line A-A is shown on the right, with a section symbol A and a section line C. The section shows a profile with a flat top and a sloped bottom.

Packaging Specification

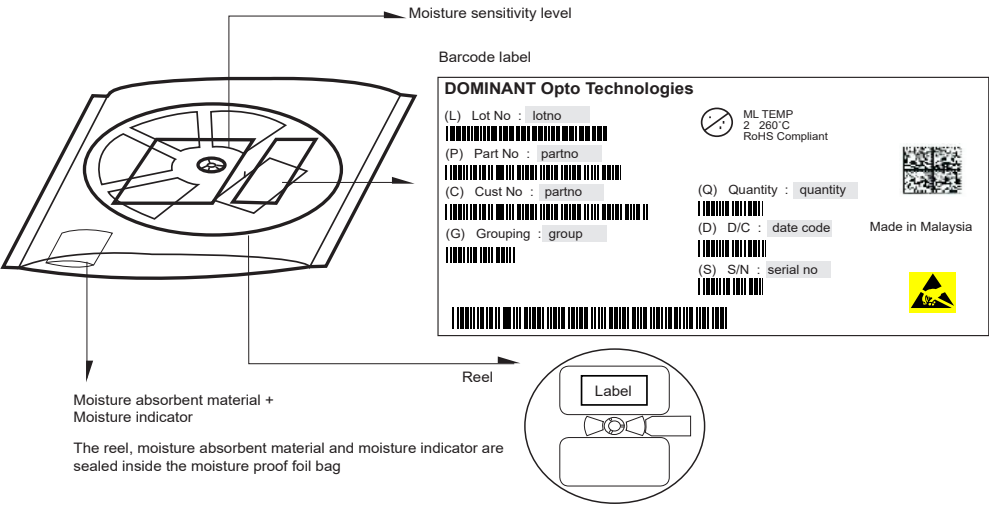


	Reel Diameter (mm)	Quantity (pcs)	*Ordering Number
Standard Packing	180	2000	DWx-LJG-xxx-x
Optional Packing	329	8000	DWx-LJG-xxx-x-8

Notes:

* For ordering purpose only. Please consult sales and marketing for details.

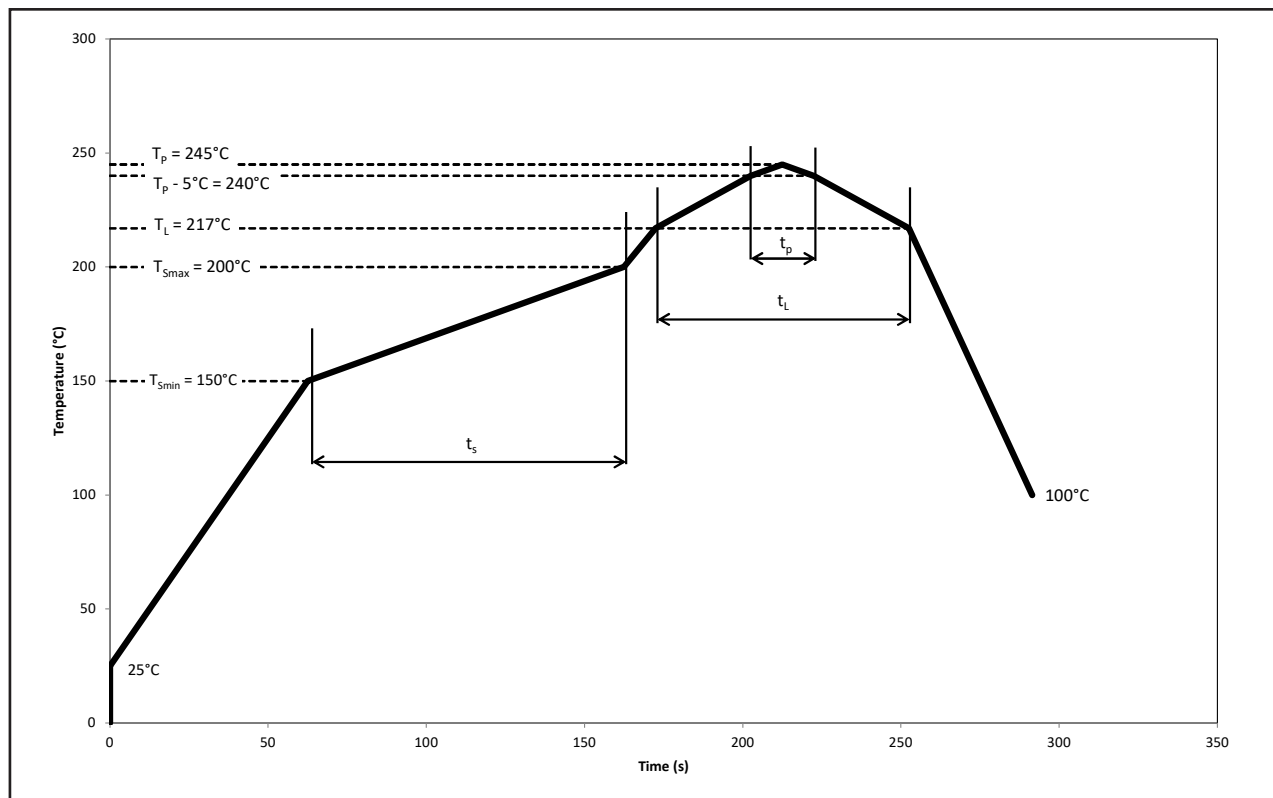
Packaging Specification



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

Recommended Pb-free Soldering Profile

Product complies to MSL Level 2 acc. to JEDEC J-STD-020E



Profile Feature	Symbol	Min.	Pb-Free Assembly		Unit
			Recommended	Max.	
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_L	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, V_f 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.

6) **Reverse Voltage:**

- 6.1 Not designed for reverse operation. Continuous reverse voltage can cause migration and LED damage.

Revision History

Page	Subjects	Date of Modification
-	Initial Release	22 Mar 2010
3	Typo error on IV group: V2 --> V1	06 Sep 2010
4	Typo error on graph: Relative Intensity Vs Forward Current Update Operating Temperature and Storage Temperature	19 Aug 2013
1	Update Product Photo	13 Dec 2013
2, 3	Add Thermal Resistance and Characteristics	26 Jun 2014
1, 2, 11	Update Features Add new partno: DWT-LJG-X2Y-1 Update Packaging Specification	13 Jan 2016
1, 2, 4, 5, 9, 10, 11, 12	Update Features: AEC-Q101 to AEC-Q102 Not for New Design: DWT-LJG-WX2-1 Update Peak Pulse Current Test Condition Update Graph Add in Bigger Reel Option Update Packaging Specification Update Recommended Pb-free Soldering Profile Add Appendix	22 Feb 2024

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

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