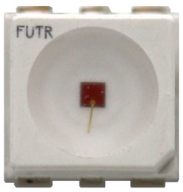
DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET:

Extreme Power DomiLED

AlInGaP : D6S-FKG



Extreme Power DomiLED

With its significant power in terms brightness, viewing angle and variety of application possibilities, Extreme 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 using thin film technology.
> 120° viewing angle.
> Low thermal resistance.
> Qualified according to JEDEC moisture sensitivity Level 2.
> Compatible to IR reflow soldering.
> Environmental friendly; RoHS compliance.
> Compliance to automotive standard; AEC-Q102.
> Superior Corrosion Resistance.

Applications:

> Automotive: Interior applications, eg: switches, telematics, climate control system, dashboard, etc.
> Automotive: Exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL), Rear Combination Light (RCL).

Optical Characteristics at Tj=25˚C

Part Number	Color	Viewing Angle˚	Luminous Flux @ IF = 140mA(lm) Appx. 1.2		
			Min.	Typ.	Max.
D6S-FKG-L3N-3	Super Red, 635nm	120	12.2	16.0	23.5
D6S-FKG-MP2-2	Super Red, 630nm	120	13.9	18.1	26.8

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 140mA Appx. 3.1			V_r @ I_r = 10uA Appx. 6.1
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
D6S-FKG	1.90	2.20	2.50	12

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	200	mA
Peak pulse current; (Ts=55 ˚C, tp ≤ 100µs, Duty cycle = 0.03)	400	mA
Reverse voltage Appx. 6.1	12	V
ESD threshold (HBM)	2	kV
LED junction temperature	135	˚C
Operating temperature	-40 … +125	˚C
Storage temperature	-40 … +125	˚C
Thermal resistance - Real Thermal Resistance Junction / solder point, $R_{th\ JS\ real}$ Super Red (typ = 35) - Electrical Thermal Resistance Junction / solder point, $R_{th\ JS\ el}$ Super Red (typ = 23)	 45 30	 K/W K/W

Wavelength Grouping at Tj= 25˚C

Color	Group	Wavelength distribution (nm) Appx. 2.2
D6S, Super Red	Full	627 - 637
	W	627 - 630
	X	630 - 632
	Y	632 - 637

Luminous Flux Group

Brightness Group	Luminous Flux Appx. 1.2 (lm)
L3	12.2... 13.9
M2	13.9 ... 15.8
M3	15.8 ... 18.1
N2	18.1 ... 20.6
N3	20.6 ... 23.5
P2	23.5 ... 26.8

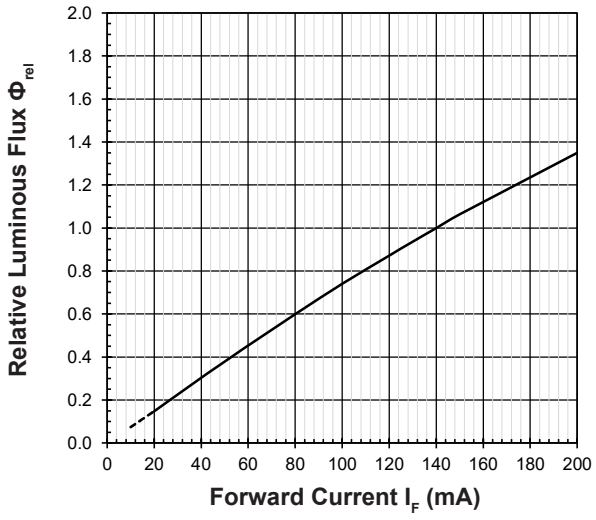
Vf Bining (Optional)

Vf @ If = 140mA	Forward Voltage (V) Appx. 3.1
V43	1.90 ... 2.05
V44	2.05 ... 2.20
V45	2.20 ... 2.35
V46	2.35 ... 2.50

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

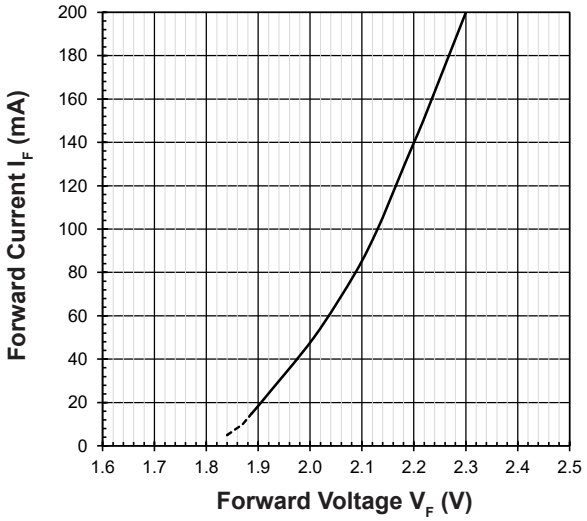
Relative Luminous Flux Vs Forward Current *Appx. 4.1*

$\Phi_V/\Phi_V(140mA) = f(I_F)$; $T_j = 25°C$



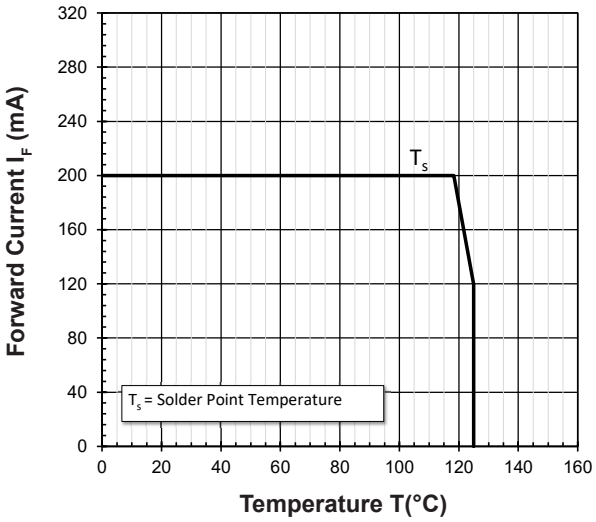
Forward Current Vs Forward Voltage *Appx. 4.1*

$I_F = f(V_F)$; $T_j = 25°C$



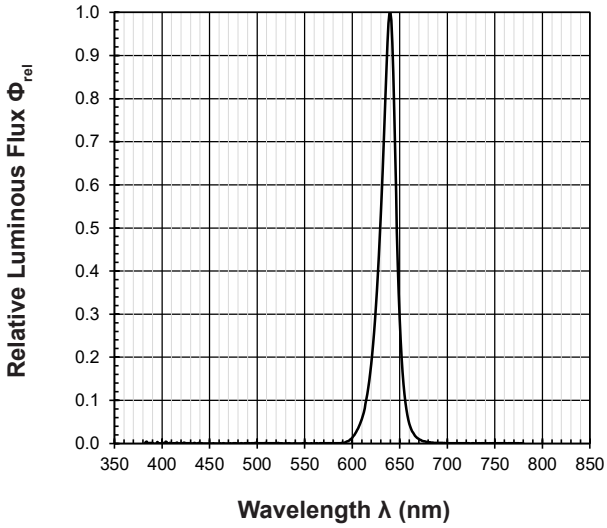
Maximum Current Vs Temperature

$I_F=f(T)$



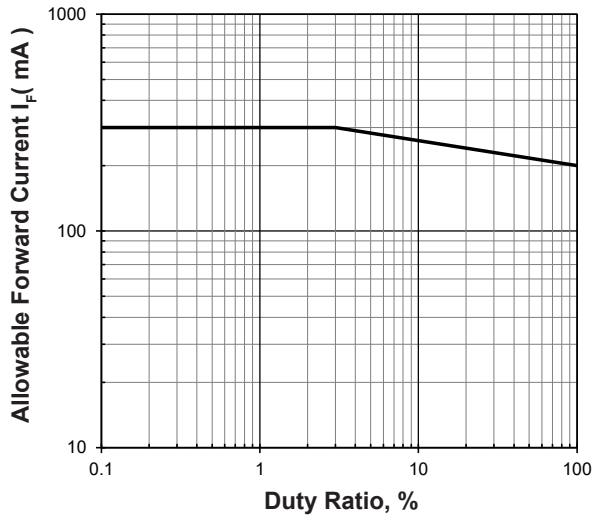
Relative Spectral Emission *Appx. 4.1*

$\Phi_{rel} = f(\lambda)$; $T_j = 25°C$; $I_F = 140mA$

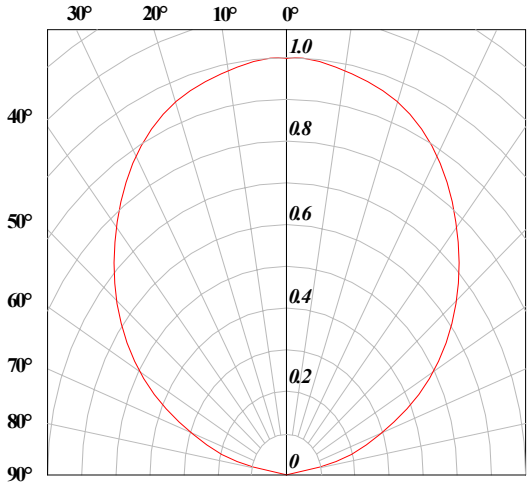


Allowable Forward Current Vs Duty Ratio

(T_s= 55°C; $t_p \leq 100\mu s$)

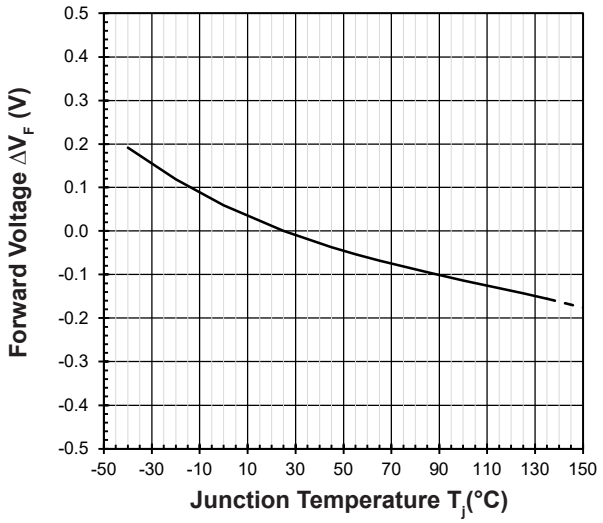


Radiation Pattern *Appx. 4.1*



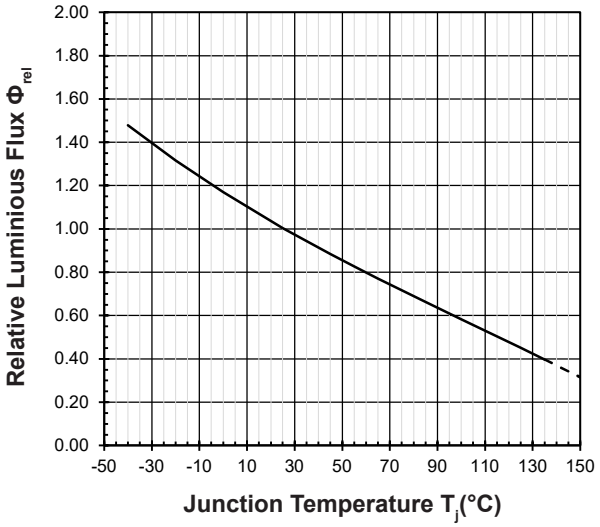
Forward Voltage Vs Junction Temperature *Appx. 4.1*

$\Delta V_F = V_F - V_F(25°C) = f(T_j)$; I_F =140mA



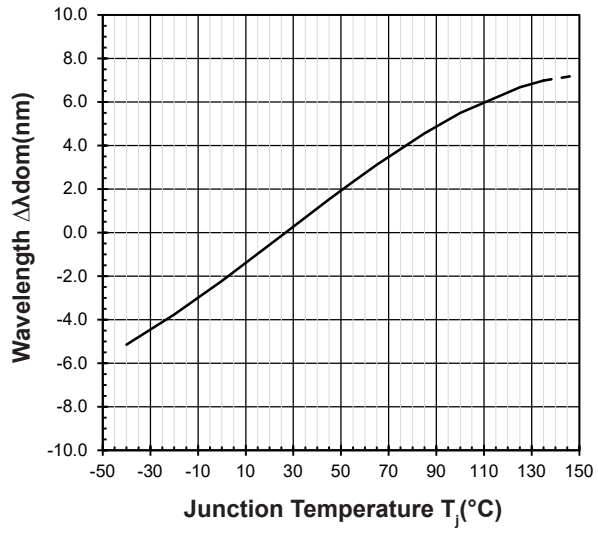
Relative Luminious Flux Vs Junction Temperature *Appx. 4.1*

$\Phi V/\Phi V(25°C) = f(T_j)$; I_F = 140mA

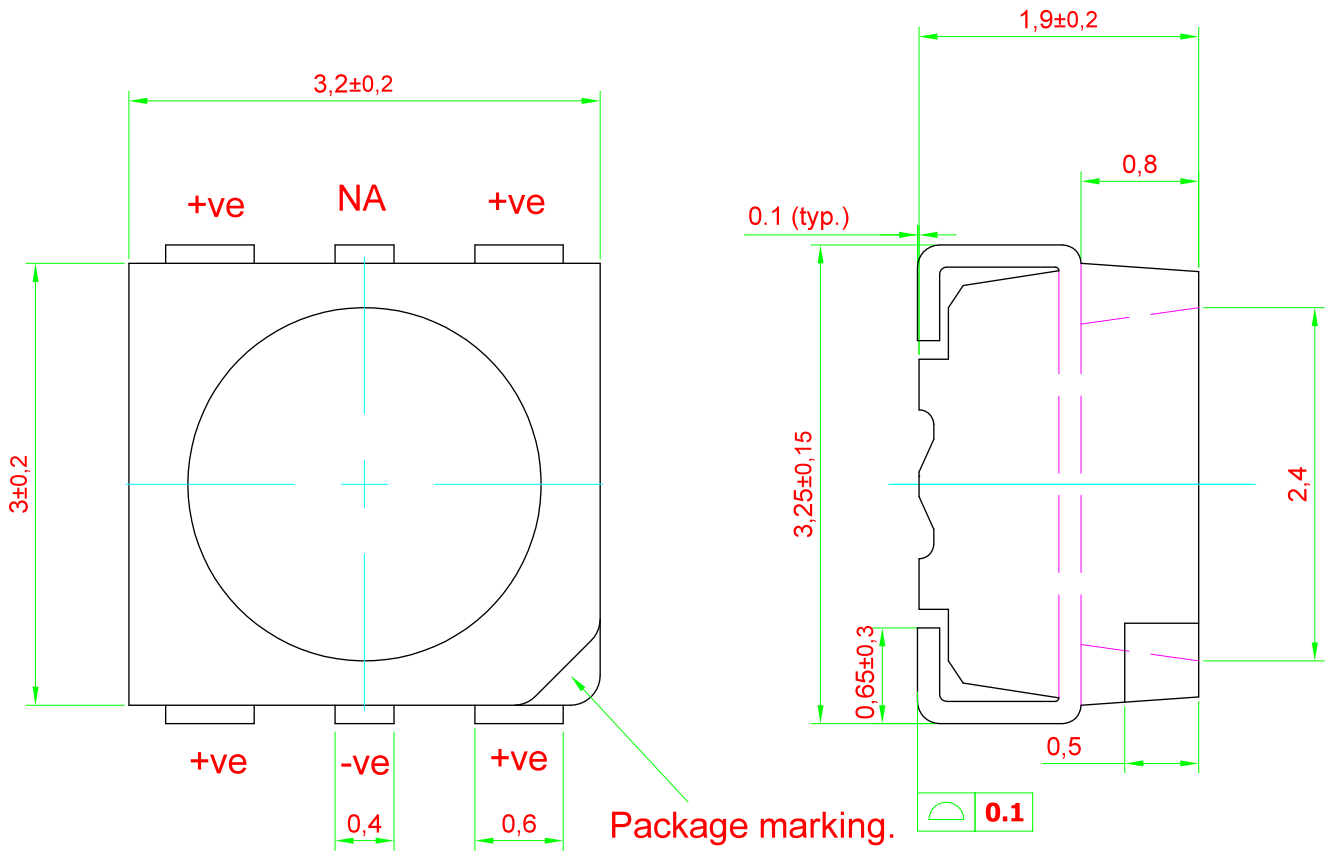


Wavelength Vs Junction Temperature *Appx. 4.1*

$\Delta\lambda dom = \lambda dom - \lambda dom\ (25°C) = f(T_j)$; I_F = 140mA



Extreme Power DomiLED • AlInGaP : D6S-FKG Package Outlines *Appx. 5.1*

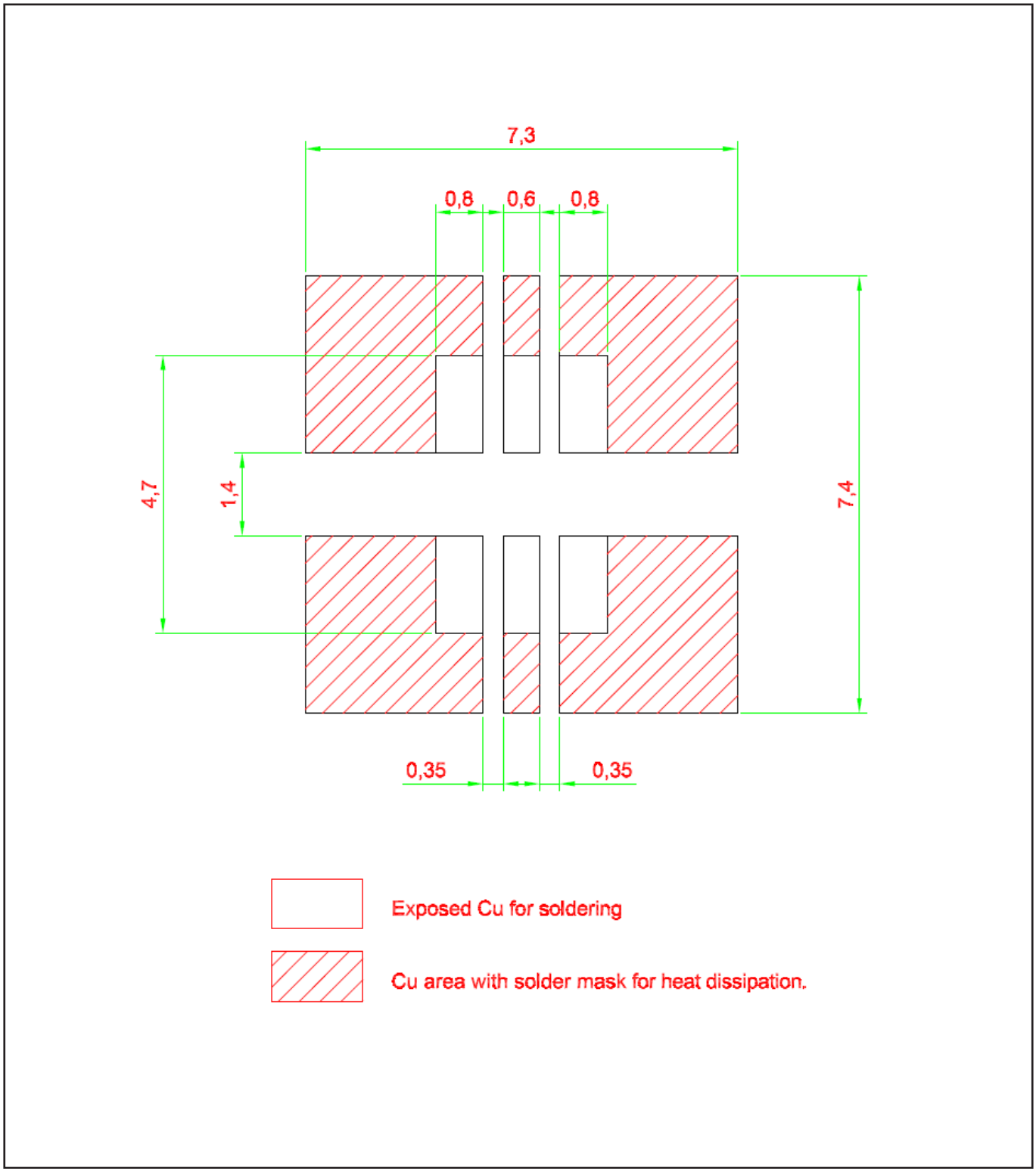


Note : Primary thermal path is through Anode lead of LED package
General Tolerance ± 0.1

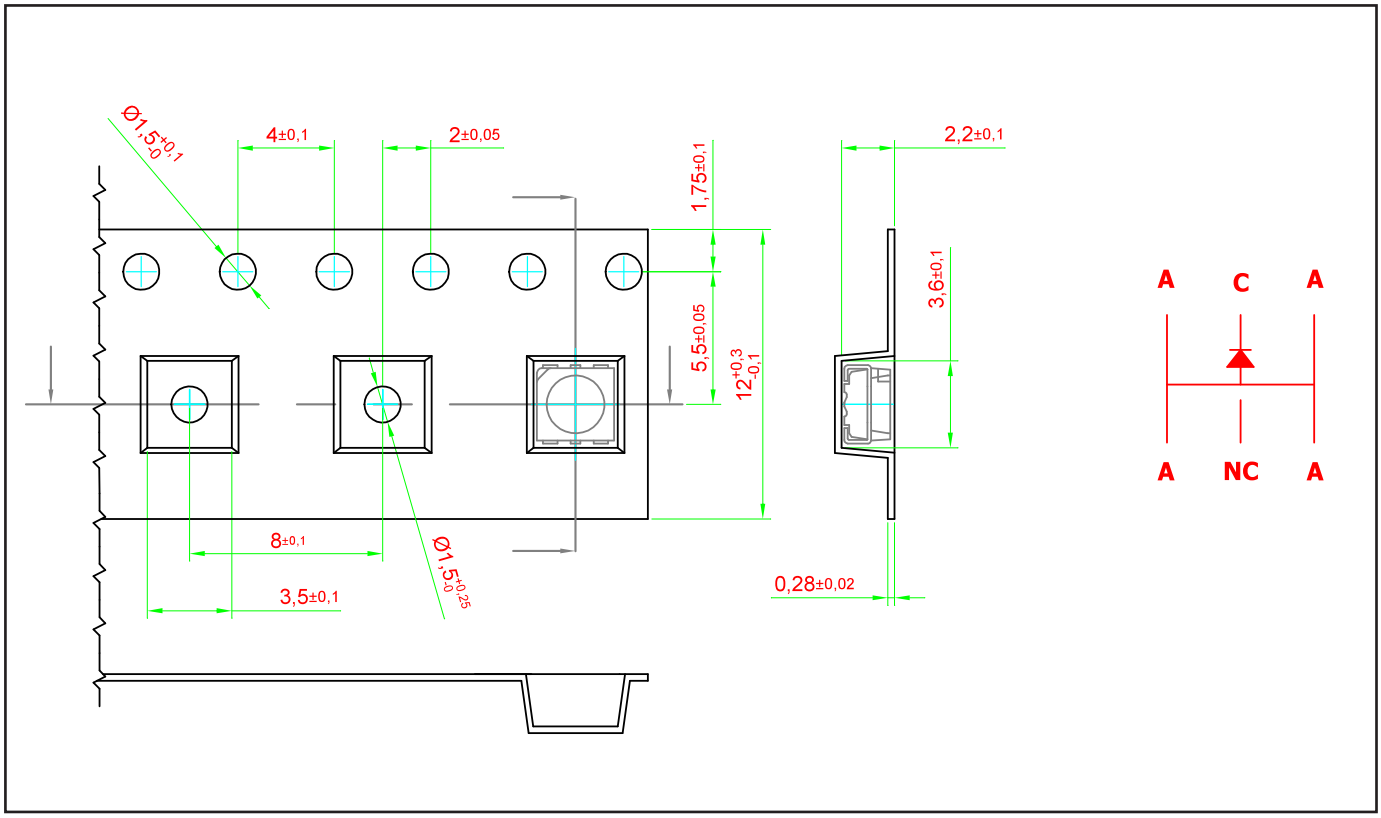
Material

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

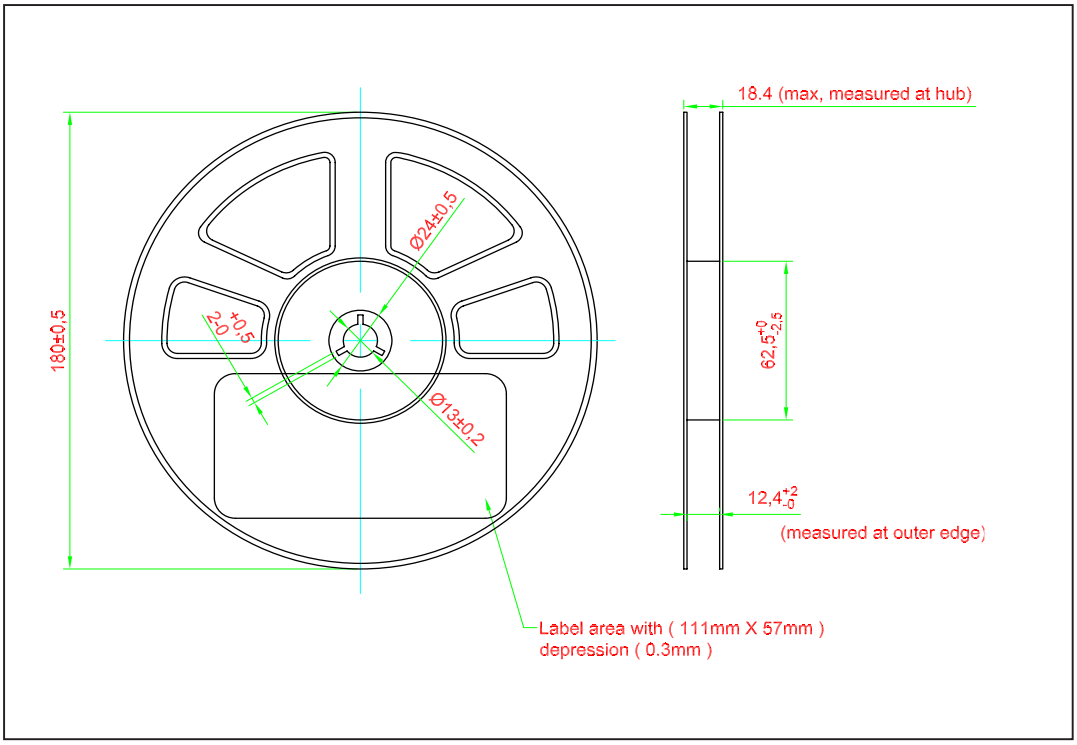
Recommended Solder Pad *Appx. 5.1*

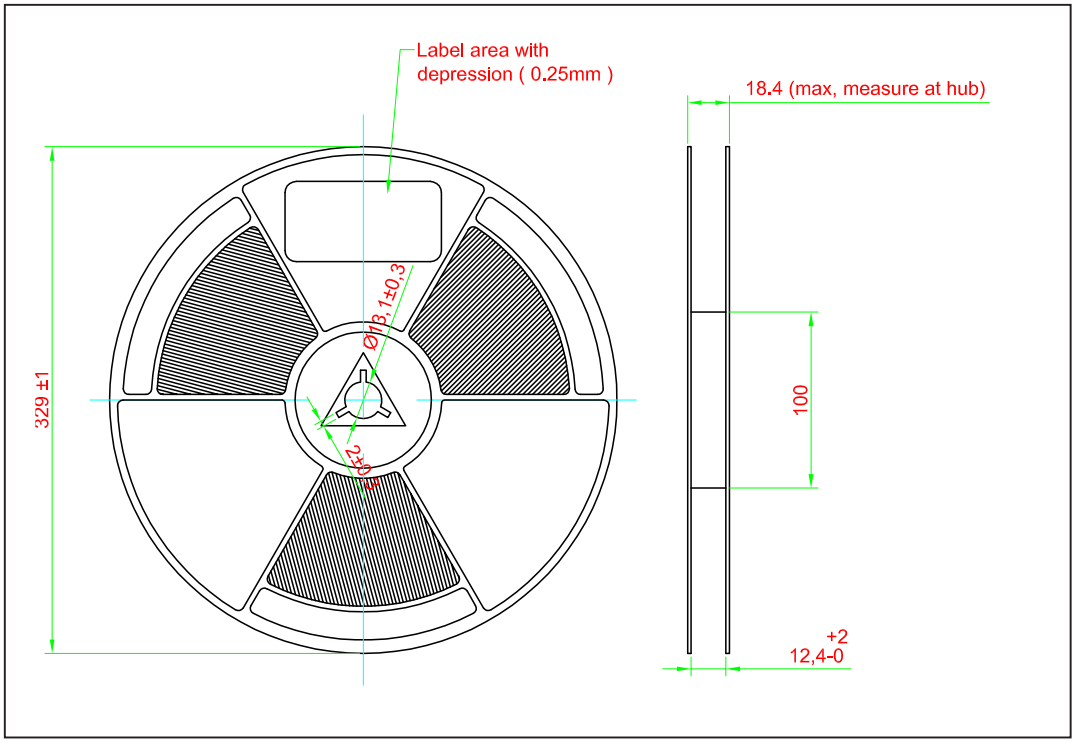


Taping and orientation *Appx. 5.1*



Packaging Specification



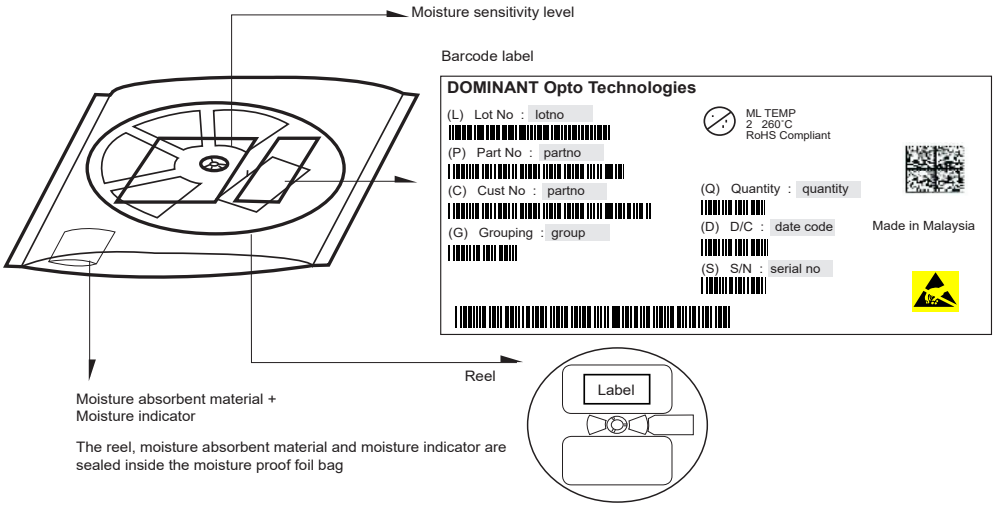


	Reel Diameter (mm)	Quantity (pcs)	*Ordering Number
Standard Packing	180	1000	D6x-FKG-xxx-x
Optional Packing	329	4000	D6x-FKG-xxx-x-4

Notes:

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

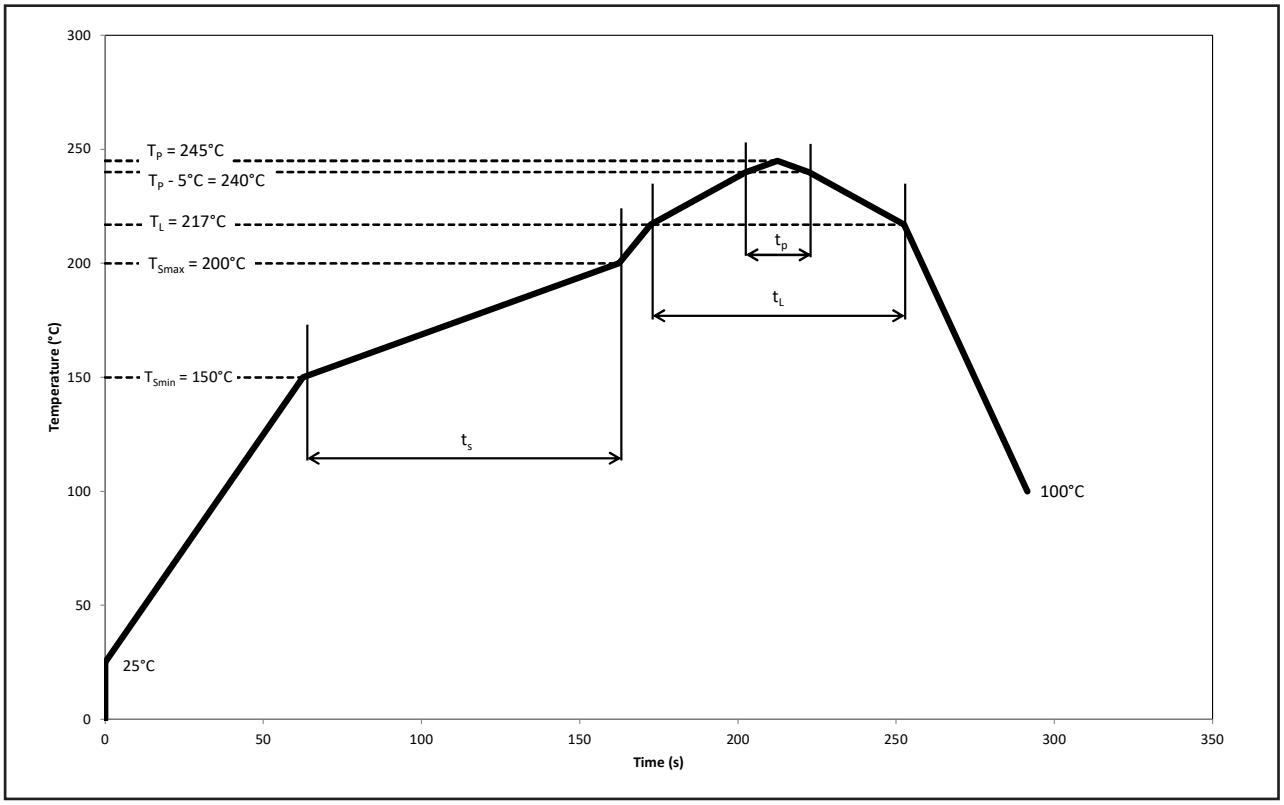
Packaging Specification



Quantity per bag (pcs)	Average 1pc Extreme Power DomiLED (g)	1 completed bag (g)
1000	0.036	240 ± 10
4000	0.036	750 ± 10

Recommended Pb-free Soldering Profile

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



Profile Feature	Symbol	Pb-Free Assembly			Unit
		Min.	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°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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 0.5nm and an expanded uncertainty of ± 1nm (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 ± 0.05V and an expanded uncertainty of ± 0.1V (accordingly to GUM with a coverage factor of k=3).

4) Typical Values:

4.1 Due to the specific conditions of semiconductor devices' manufacturing processes, the provided typical data and calculated correlations of technical parameters should only be considered as statistical values. It is important to note that the actual parameters of individual devices may deviate from these typical data, calculated correlations or the typical characteristic line. Dominant reserves the right to update this typical data without prior notice, particularly in response to technical enhancements.

5) Tolerance of Measure

5.1 Unless otherwise noted in drawing, tolerances are specified with ± 0.1 and dimension are specifiec 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	10 Mar 2026

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.

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Dispose of product is in accordance with local, regional, national and international regulations.

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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