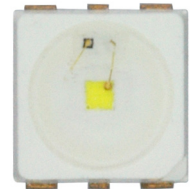


Extreme Power DomiLED

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.
- > 115° viewing angle.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Superior corrosion resistance.
- > Qualified based on AEC-Q101 Standard.



Applications:

- > Automotive: interior applications, eg: switches, cluster, climate control, dash boards, mirror lamp, ambient lighting.
- > Automotive: exterior applications, eg: position lamp, license plate lamp, DRL, backup lamp.



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Flux @ IF = 140mA(lm) <i>Appx. 1.2</i>		
			Min.	Typ.	Max.
D6W-VZKG-QS3-1	White	115	30.6	51.7	67.2

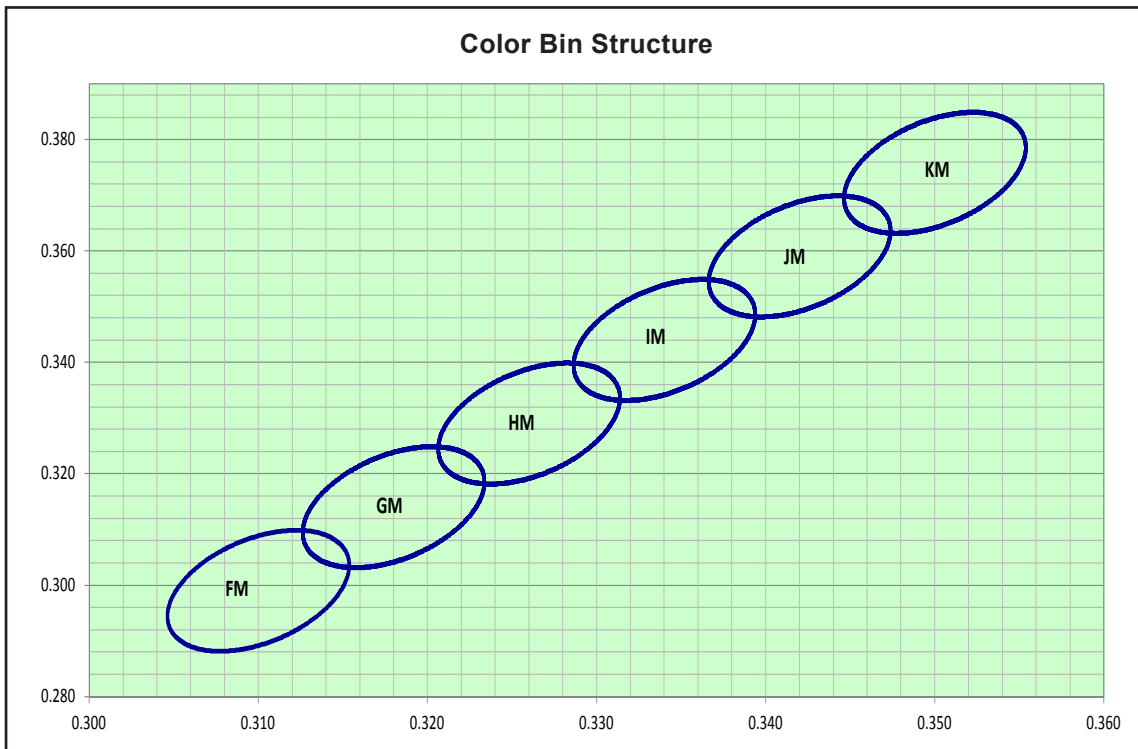
Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 140mA <i>Appx. 3.1</i>		
	Min. (V)	Typ. (V)	Max. (V)
D6W-VZKG	2.70	3.20	3.60

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	250	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.1)	600	mA
Reverse voltage	Not designed for reverse bias	V
ESD threshold (HBM)	8	kV
LED junction temperature	150	°C
Operating temperature	-40 ... +125	°C
Storage temperature	-40 ... +125	°C
Thermal resistance		
- Real Thermal Resistance		
Junction / solder point, R _{th JS real} (typ = 40)	50	K/W
- Electrical Thermal Resistance		
Junction / solder point, R _{th JS el} (typ =27)	34	K/W
(Mounting on FR4 PCB, pad size ≥ 16 mm ² per pad)		

D6W, Color Grouping *Appx. 2.1*



Bin	Ellipse	x	y	a	b	θ °
FM	5 Step	0.3100	0.2990	0.0112	0.0048	75.5667
GM	5 Step	0.3180	0.3140	0.0112	0.0048	75.5667
HM	5 Step	0.3260	0.3290	0.0112	0.0048	75.5667
IM	5 Step	0.3340	0.3440	0.0112	0.0048	75.5667
JM	5 Step	0.3420	0.3590	0.0112	0.0048	75.5667
KM	5 Step	0.3500	0.3740	0.0112	0.0048	75.5667

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 Flux Group

Brightness Group	Luminous Flux ^{Appx. 1.2} (lm)
Q2	30.6 ... 34.8
Q3	34.8 ... 39.8
R2	39.8 ... 45.2
R3	45.2 ... 51.7
S2	51.7 ... 59.0
S3	59.0 ... 67.2

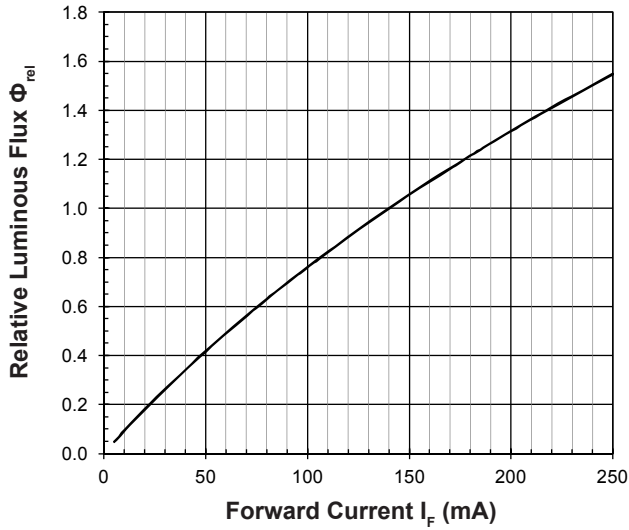
Vf Bining (Optional)

Vf @ If = 140mA	Forward Voltage (V) ^{Appx. 3.1}
VM6	2.70 ... 3.00
VM7	3.00 ... 3.30
VM8	3.30 ... 3.60

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

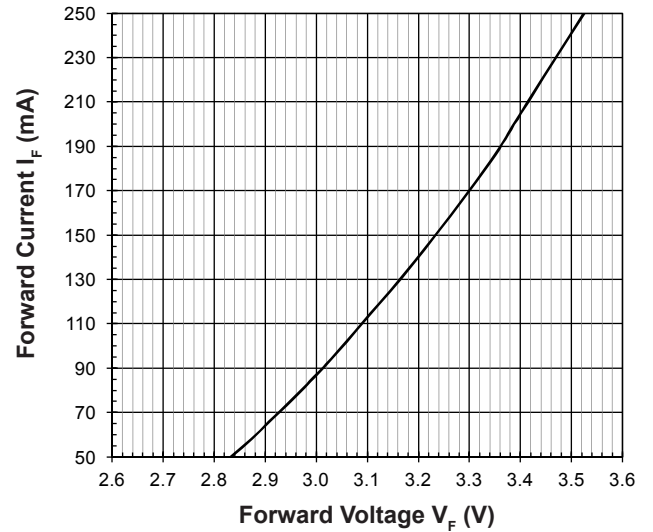
Relative Luminous Flux Vs Forward Current

$\Phi_v/\Phi_v(140\text{mA}) = f(I_F); T_j = 25^\circ\text{C}$



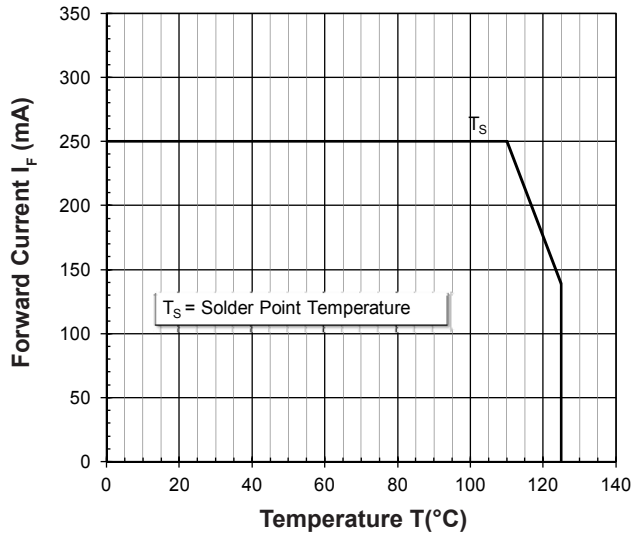
Forward Current Vs Forward Voltage

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



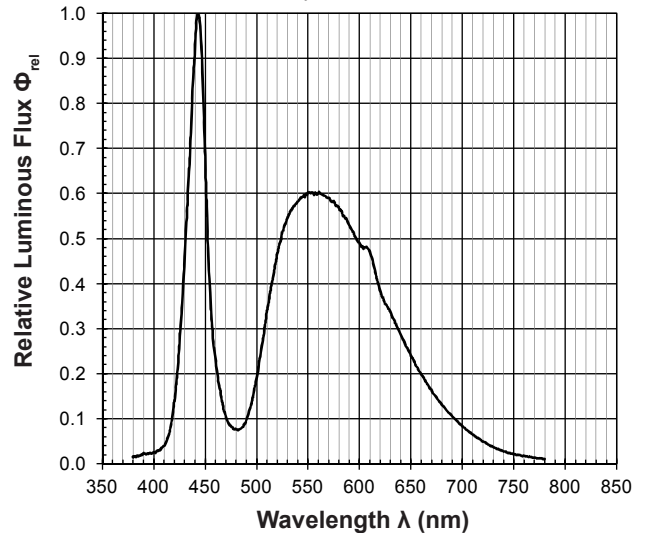
Maximum Current Vs Temperature

$I_F = f(T)$



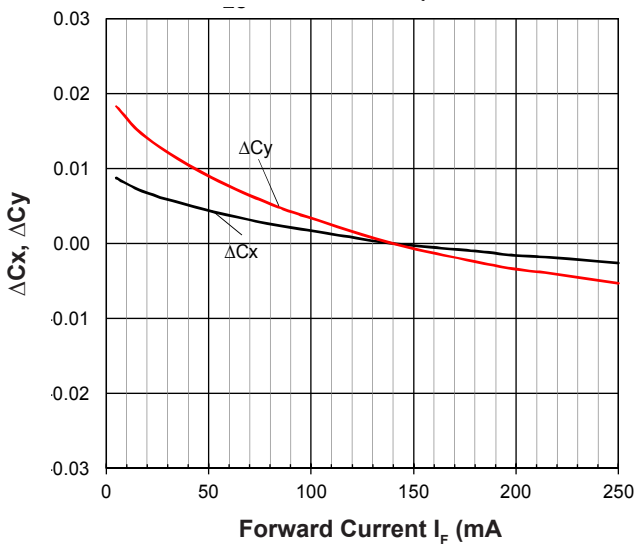
Relative Spectral Emission

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



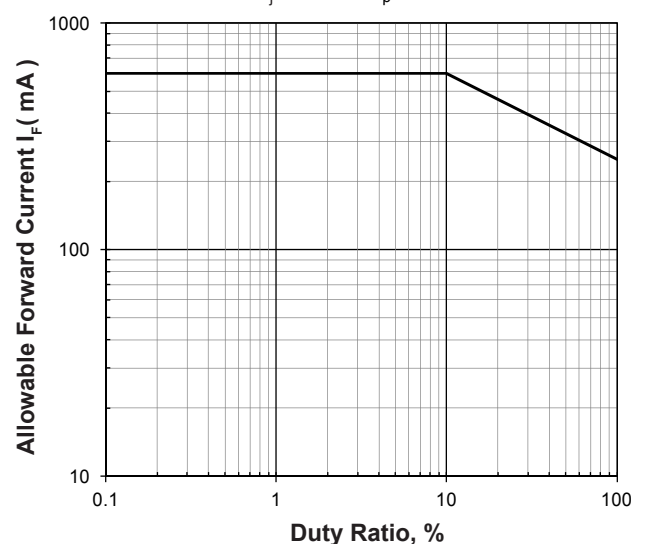
Chromaticity Coordinate Shift Vs Forward Current

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

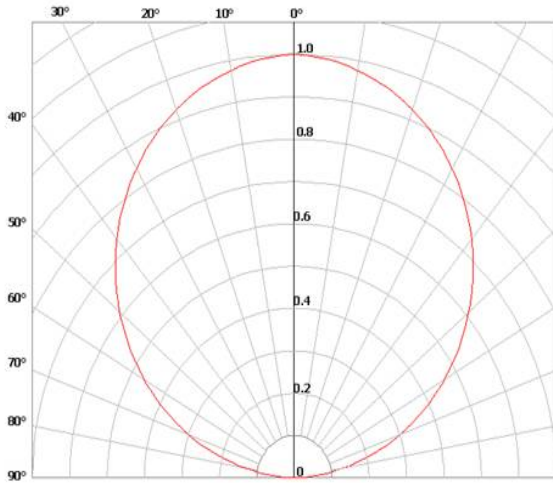


Allowable Forward Current Vs Duty Ratio

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

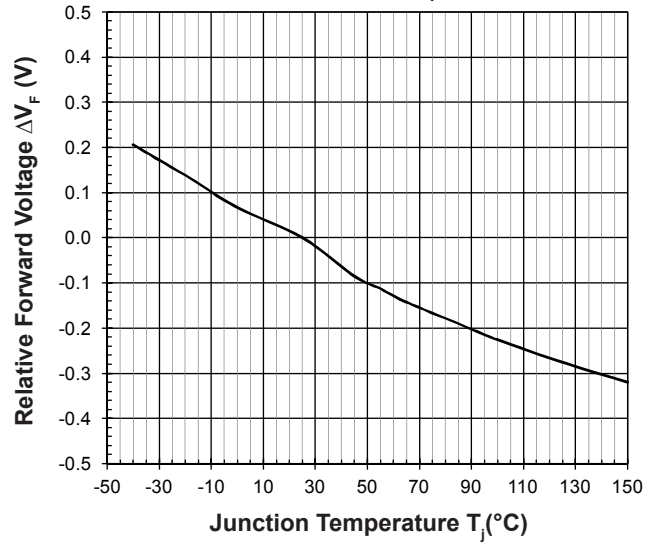


Radiation Pattern



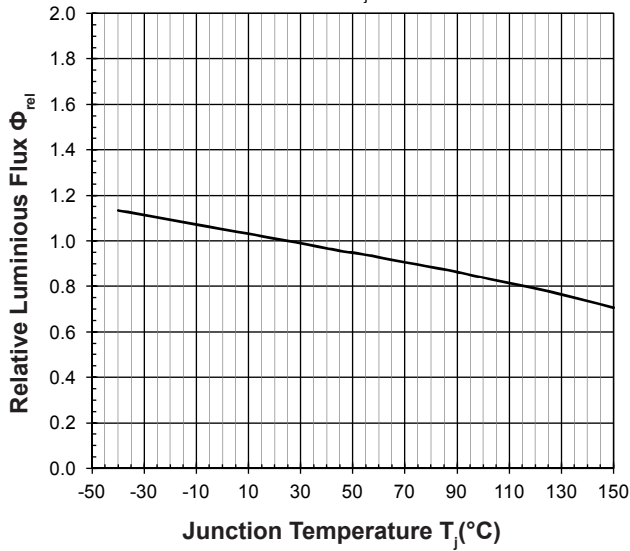
Relative Forward Voltage Vs Junction Temperature

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 140\text{mA}$$



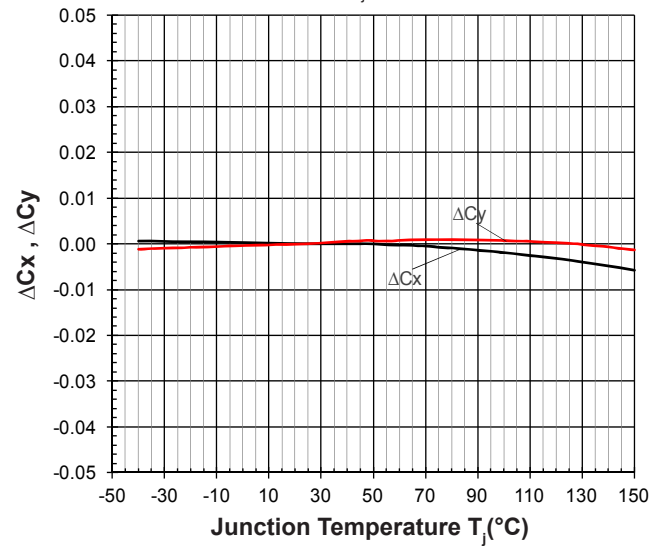
Relative Luminous Flux Vs Junction Temperature

$$\Phi_V/\Phi_V(25^\circ\text{C}) = f(T_j); I_F = 140\text{mA}$$

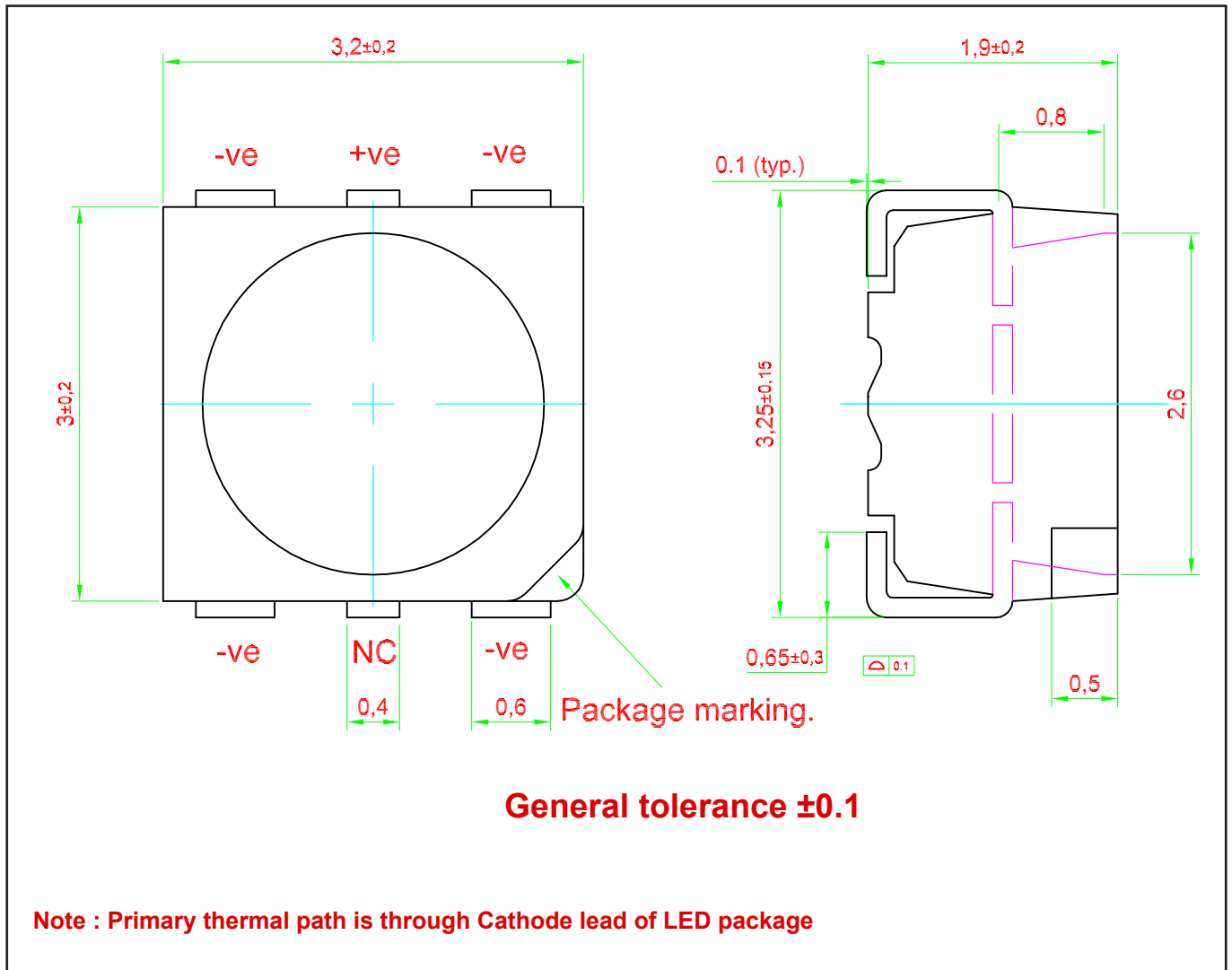


Chromaticity Coordinate Shift Vs Junction Temperature

$$\Delta Cx, \Delta Cy = f(T_j); I_F = 140\text{mA}$$



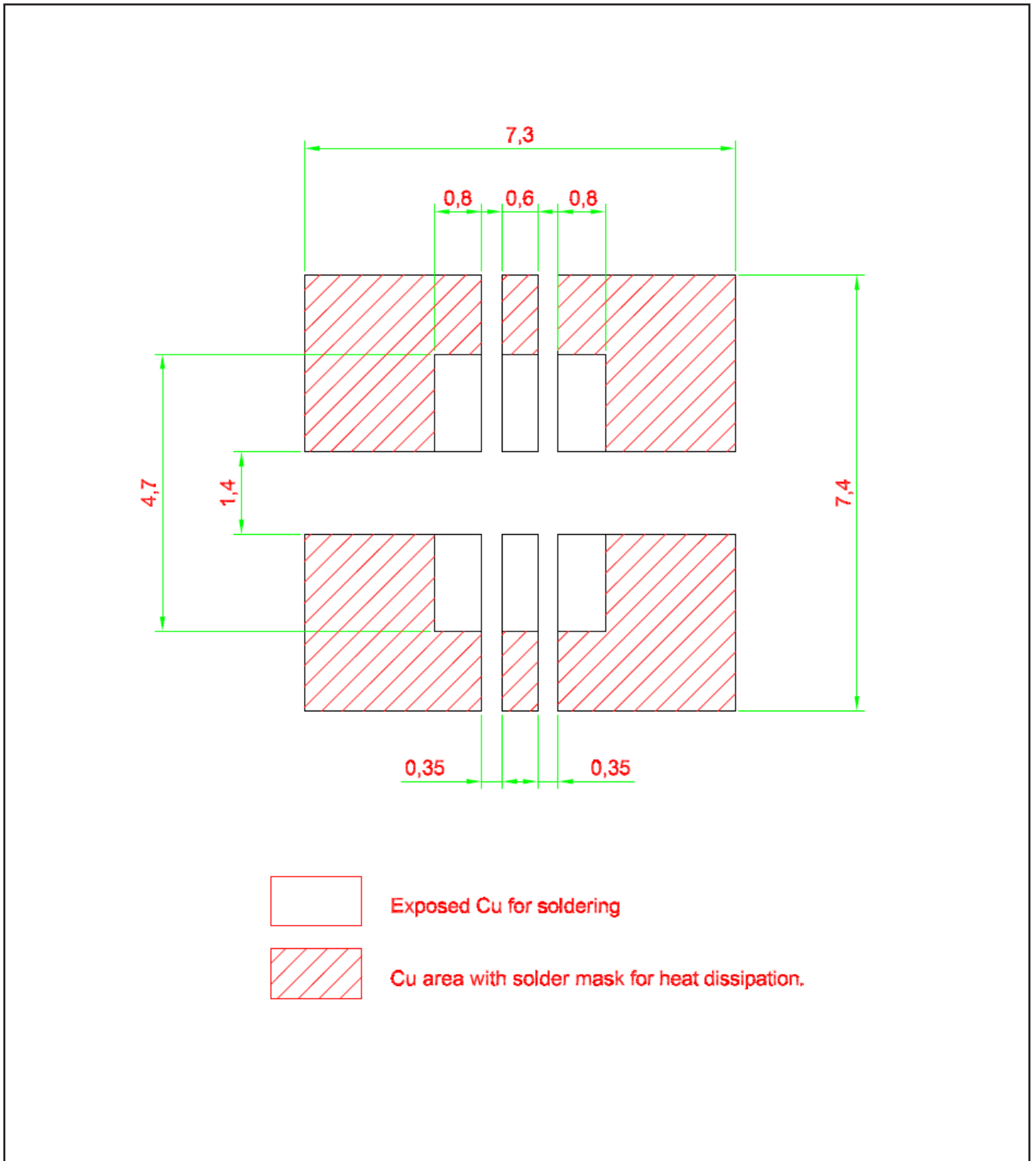
Extreme Power DomiLED • InGaN White : D6W-VZKG Package Outlines



Material

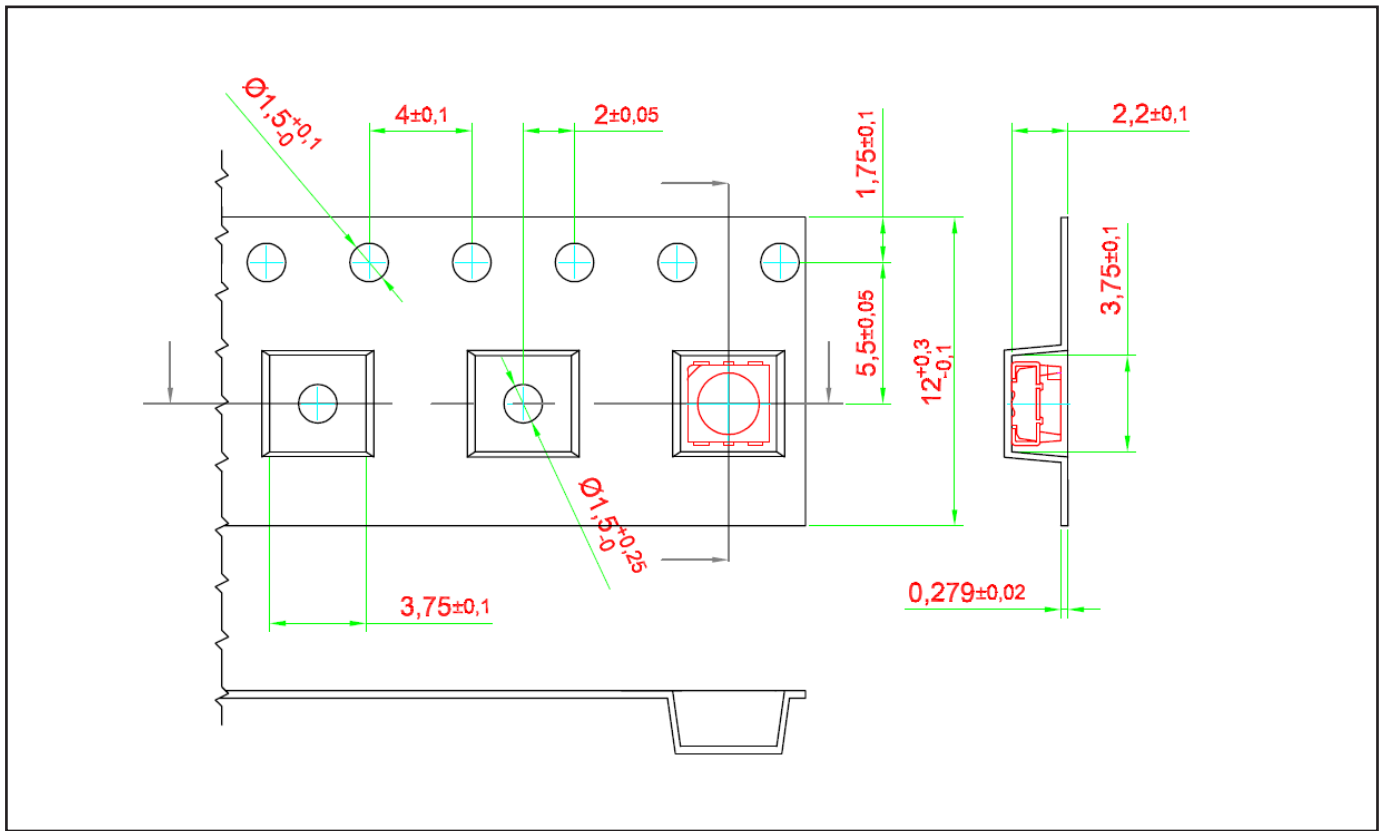
Material	
Lead-frame	Cu Alloy With Au Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone
Soldering Leads	Au Plating

Recommended Solder Pad

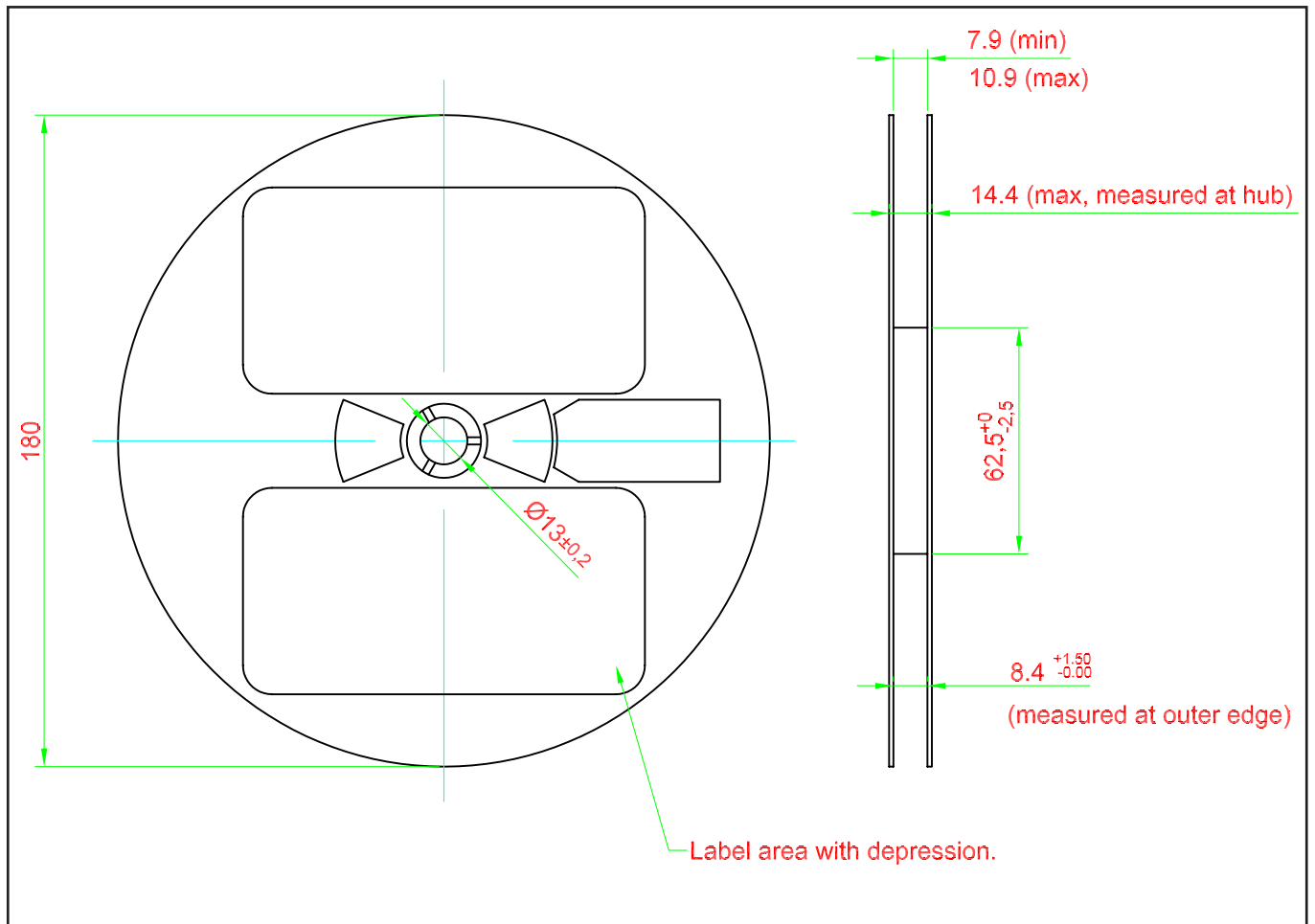


Taping and orientation

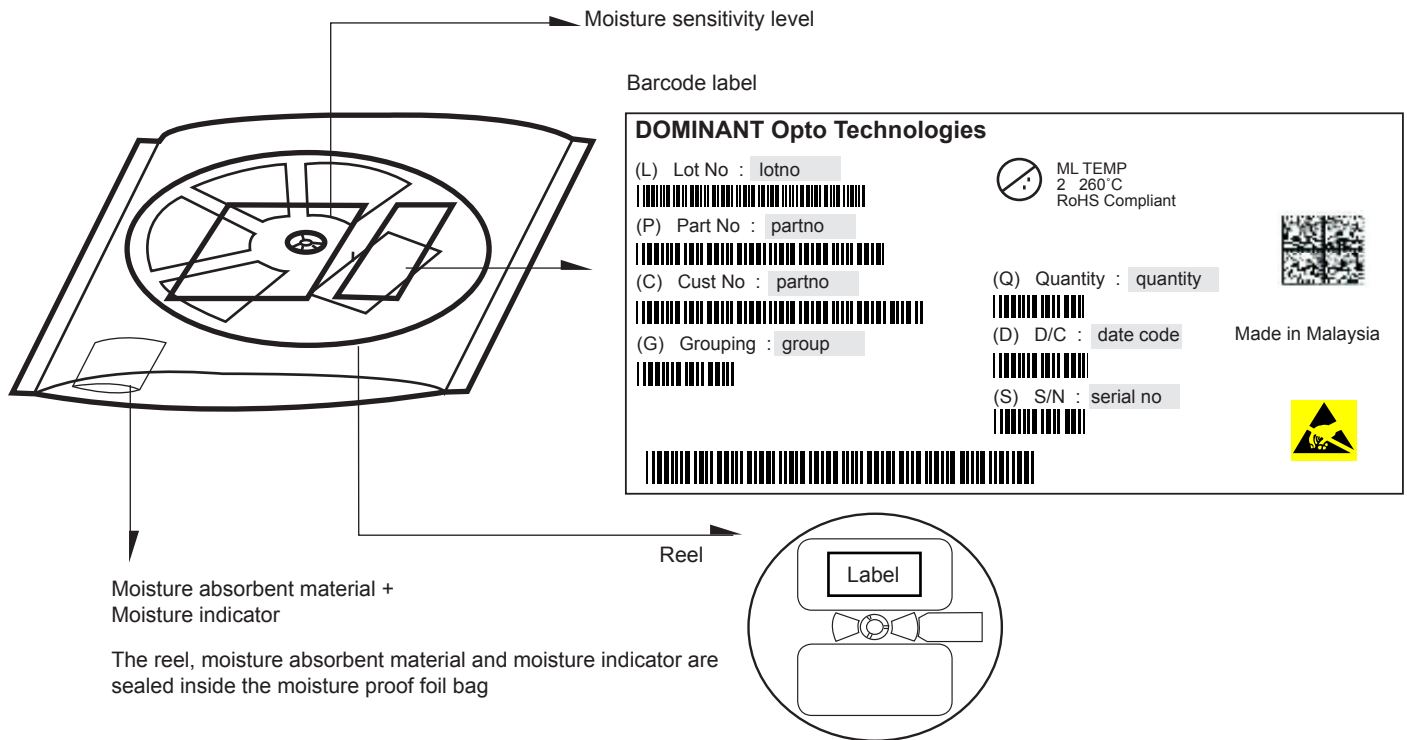
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



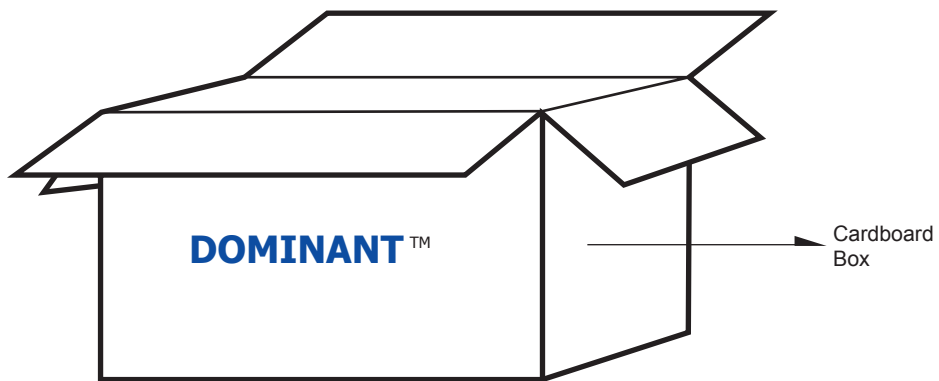
Packaging Specification



Packaging Specification



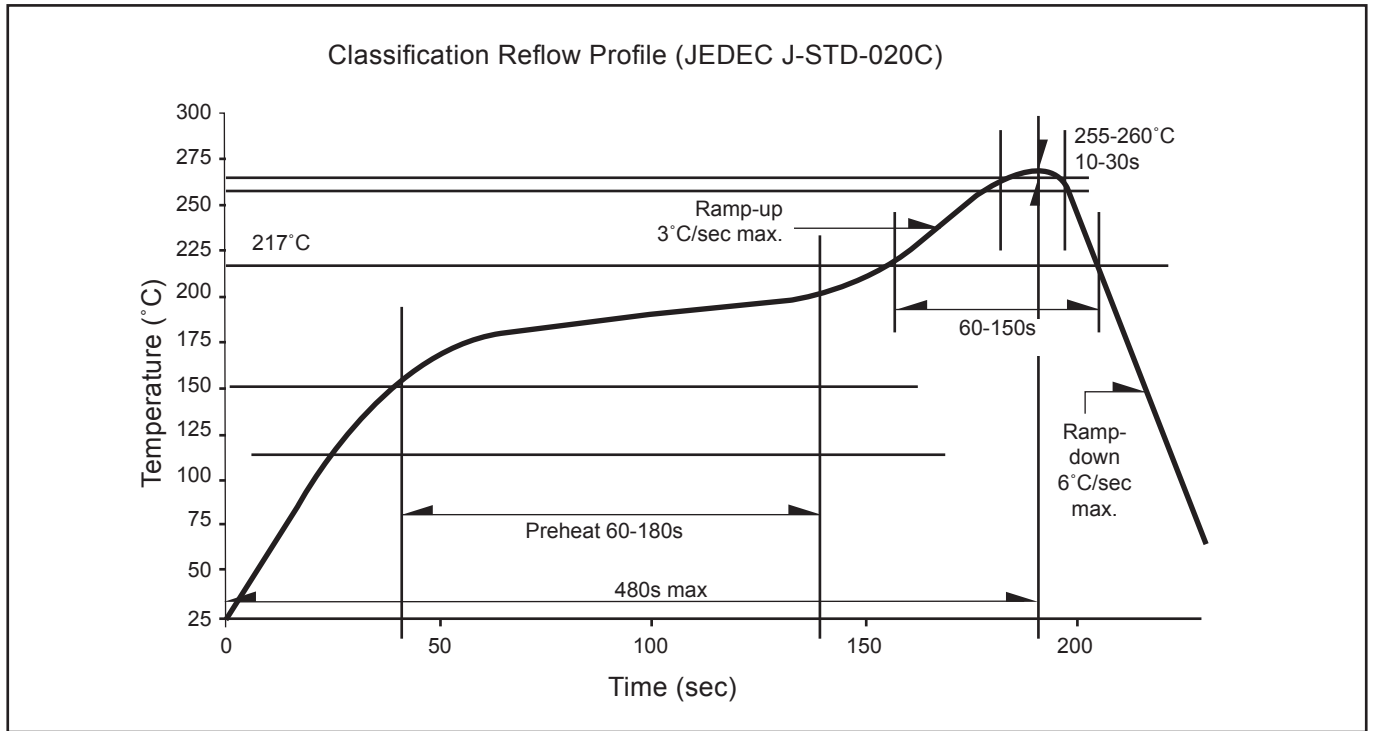
Average 1pc Extreme Power DomiLED		1 completed bag (1000pcs)
Weight (gram)	0.036	240 ± 10



For Extreme Power DomiLED

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box
Super Small	325 x 225 x 190	0.38	7 reels MAX
Small	325 x 225 x 280	0.54	11 reels MAX
Medium	570 x 440 x 230	1.46	48 reels MAX
Large	570 x 440 x 460	1.92	96 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 $k=3$).

About Us

DOMINANT Opto Technologies is a dynamic Malaysian Corporation that is among the world's leading SMT LED Manufacturers. An excellence – driven organization, it offers a comprehensive product range for diverse industries and applications. Featuring an internationally certified quality assurance acclaim, DOMINANT's extra bright LEDs are perfectly suited for various lighting applications in the automotive, consumer and communications as well as industrial sectors. With extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing, research and testing capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Opto Technologies can be found on the Internet at <http://www.dominant-semi.com>.

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