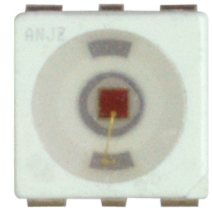


### Extreme Power DomiLED

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.
- > 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-Q101.
- > Superior Corrosion Resistance. *Appx. 4.1*



### 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 Ordering Number	Color	Viewing Angle°	Luminous Flux @ IF = 140mA(lm) <i>Appx. 1.2</i>		
			Min.	Typ.	Max.
D6S-SKG-K3N2-1	Super Red, 632nm	115	9.35	13.9	20.6
D6A-SKG-M3Q2-1	Amber, 617nm	115	15.8	23.5	34.8
D6Y-SKG-L3P2-1	Yellow, 589nm	115	12.2	18.1	26.8

**Electrical Characteristics at Tj=25°C**

Part Number	Vf @ If = 140mA <i>Appx. 3.1</i>			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
D6x-SKG	1.90	2.30	2.50	12

**Absolute Maximum Ratings**

	Maximum Value	Unit
DC forward current	200	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.1)	300	mA
Reverse voltage	12	V
ESD threshold (HBM)	2	kV
LED junction temperature	125	°C
Operating temperature	-40 ... +115	°C
Storage temperature	-40 ... +125	°C
Thermal resistance		
- Real Thermal Resistance		
Junction / ambient, R <sub>th JA real</sub>	110	K/W
Junction / solder point, R <sub>th JS real</sub>	60	K/W
- Electrical Thermal Resistance		
Junction / ambient, R <sub>th JA el</sub>	100	K/W
Junction / solder point, R <sub>th JS el</sub>	40	K/W
(Mounting on FR4 PCB, pad size ≥ 16 mm <sup>2</sup> per pad)		

**Wavelength Grouping at Tj= 25°C**

Color	Group	Wavelength distribution (nm) <i>Appx. 2.2</i>
D6S, Super Red	Full	627 - 639
D6A; Amber	Full	612 - 624
	W	612 - 616
	X	616 - 620
	Y	620 - 624
D6Y; Yellow	Full	586 - 595
	X	586 - 589
	Y	589 - 592
	Z	592 - 595

**Luminous Flux Group**

Brightness Group	Luminous Flux <i>Appx. 1.2</i> (lm)
K3	9.35 ... 10.7
L2	10.7 ... 12.2
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
P3	26.8 ... 30.6
Q2	30.6 ... 34.8

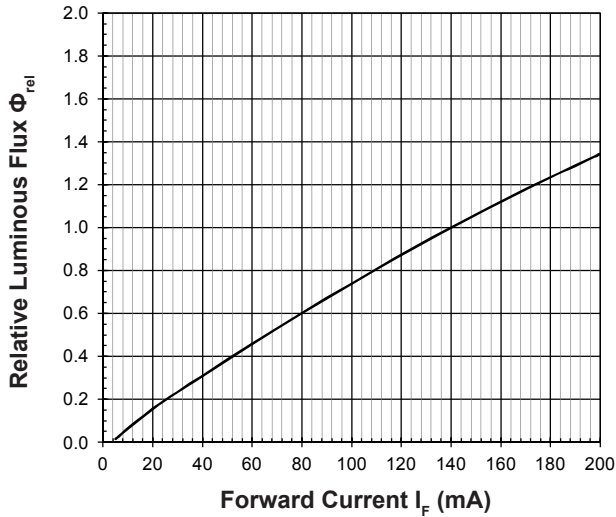
**Vf Bining (Optional)**

<b>Vf @ If = 140mA</b>	<b>Forward Voltage (V) <small>Appx. 3.1</small></b>
V1	1.90 ... 2.05
V2	2.05 ... 2.20
V3	2.20 ... 2.35
V4	2.35 ... 2.50

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

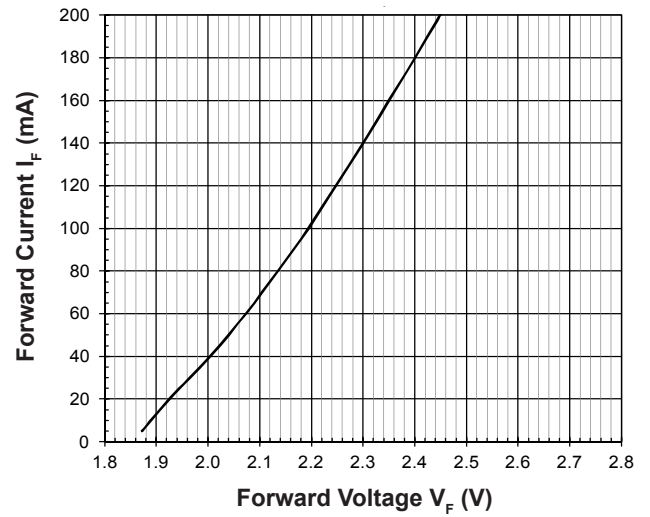
**Relative Luminous Flux Vs Forward Current**

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



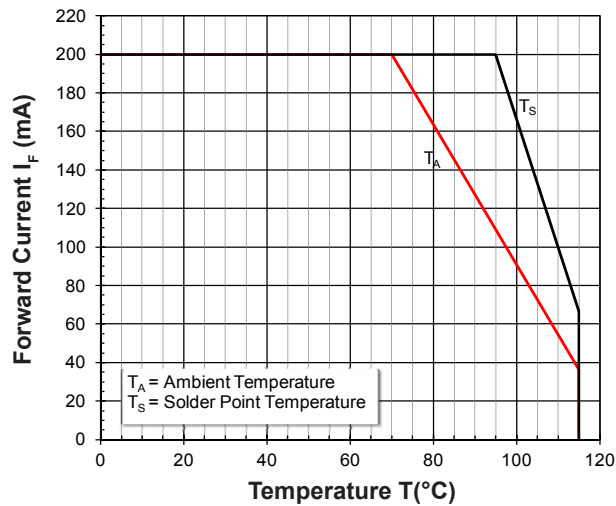
**Forward Current Vs Forward Voltage**

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



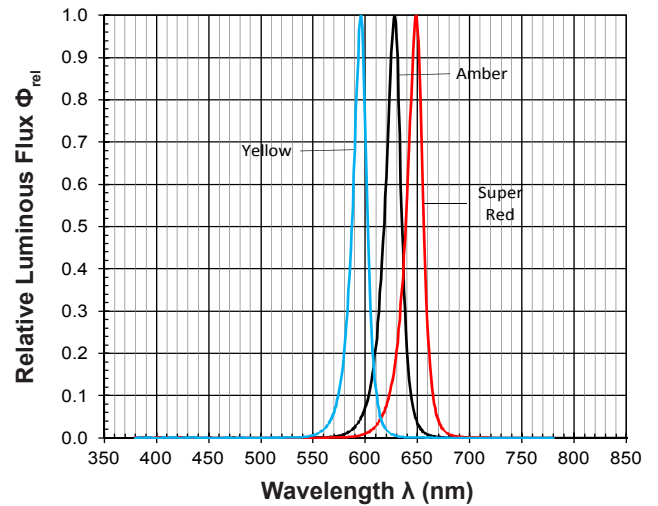
**Maximum Current Vs Temperature**

$I_F = f(T)$



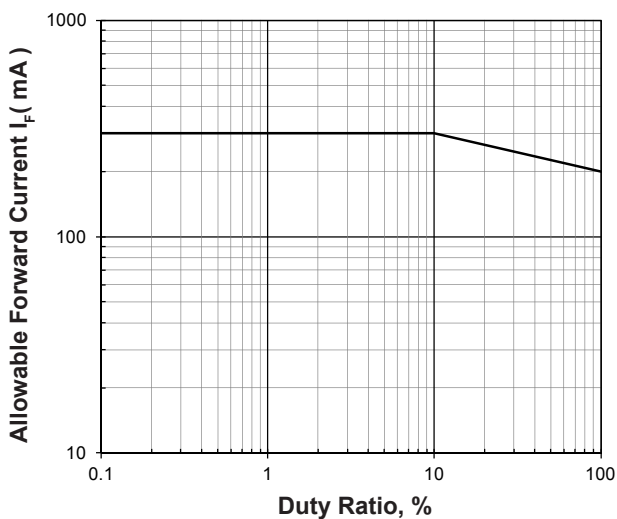
**Relative Spectral Emission**

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

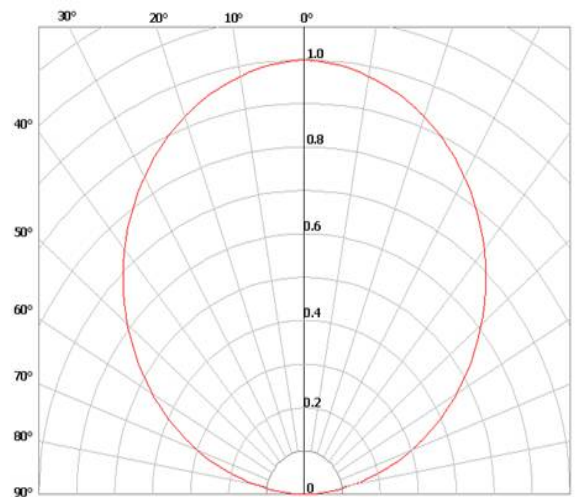


**Allowable Forward Current Vs Duty Ratio**

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

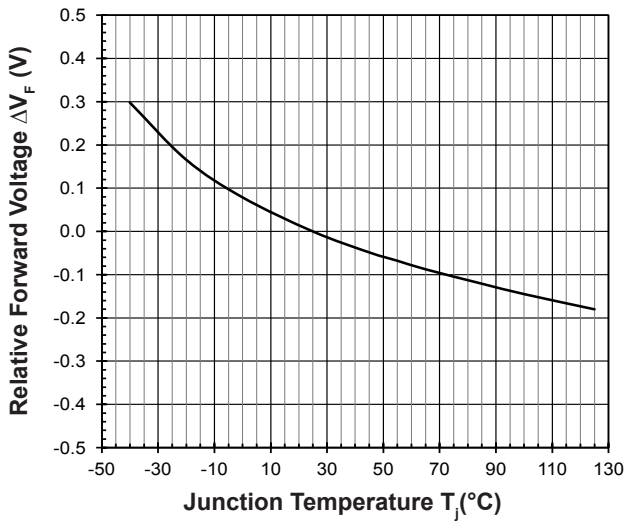


**Radiation Pattern**



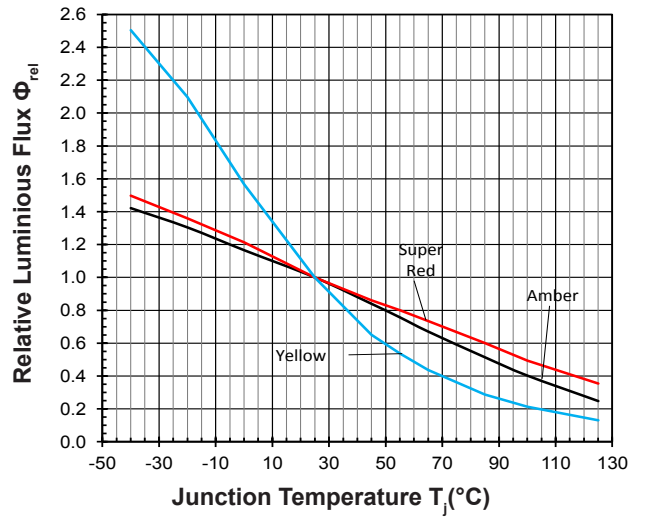
**Relative Forward Voltage Vs Junction Temperature**

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



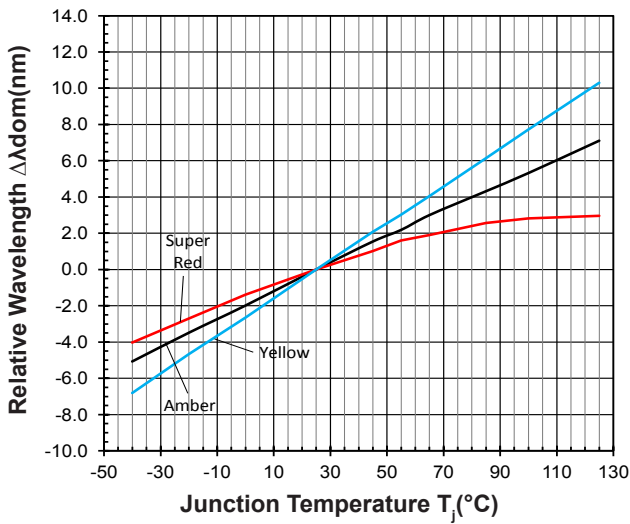
**Relative Luminous Flux Vs Junction Temperature**

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

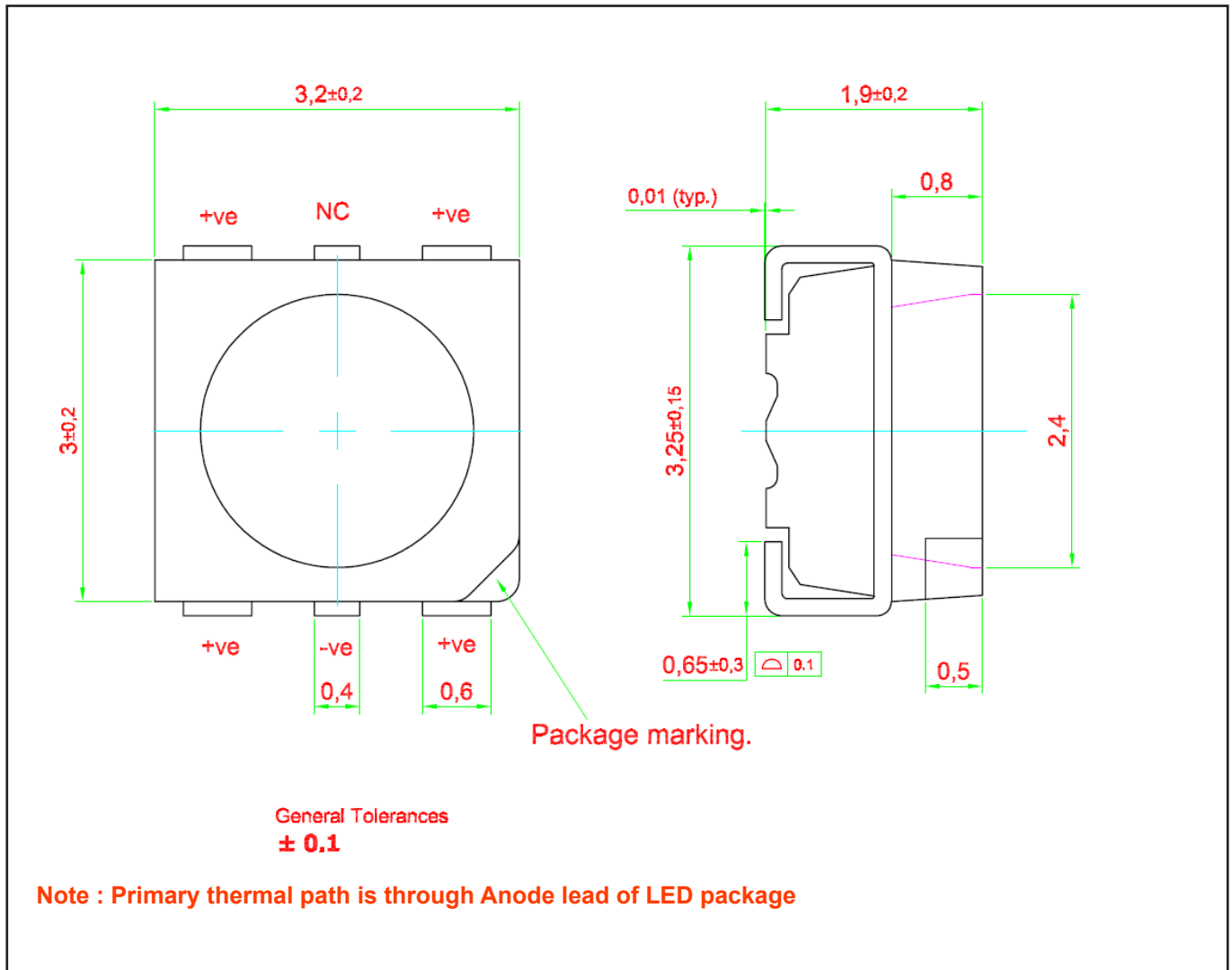


**Relative Wavelength Vs Junction Temperature**

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



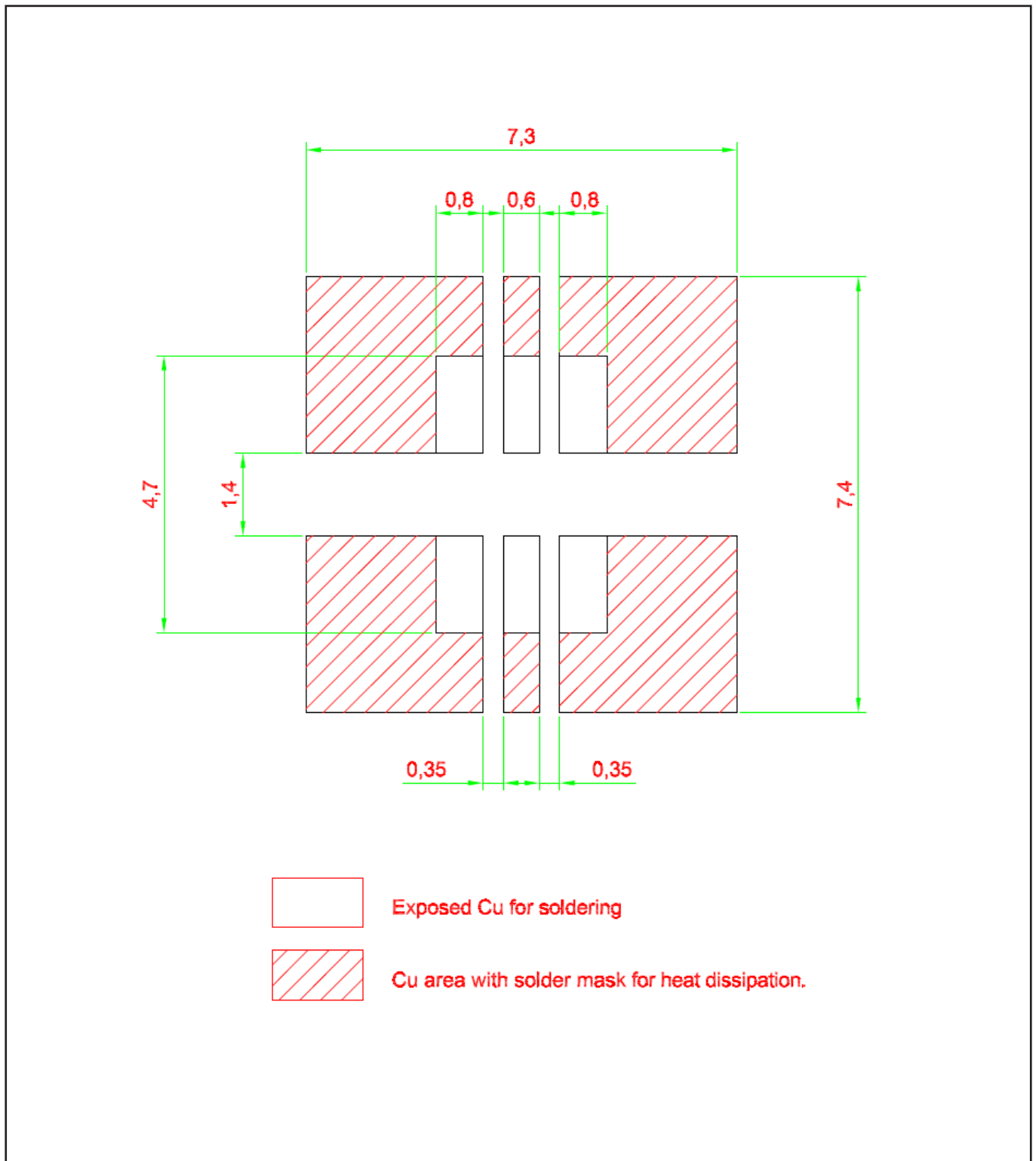
**Extreme Power DomiLED • AllnGaP : D6x-SKG Package Outlines**



**Material**

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

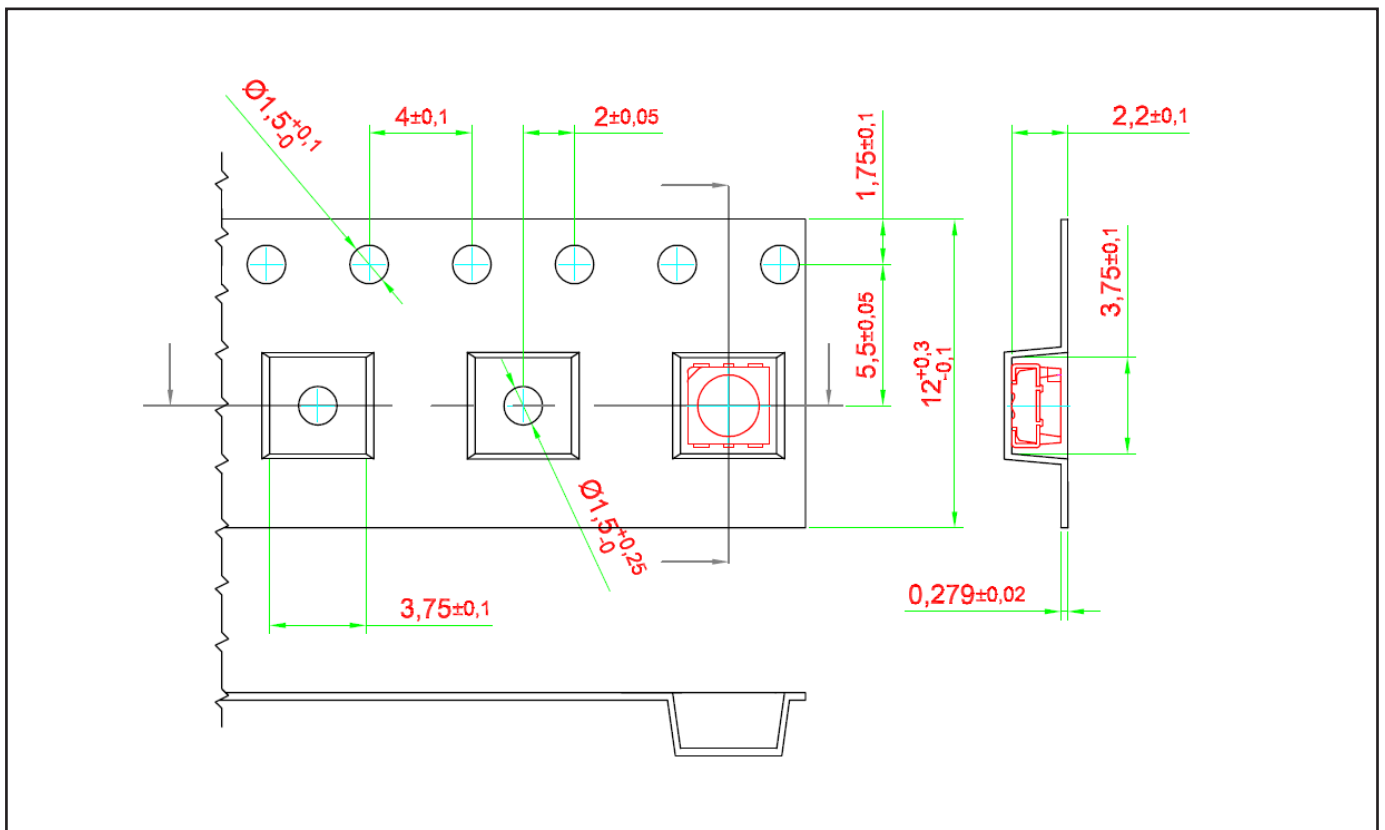
### Recommended Solder Pad



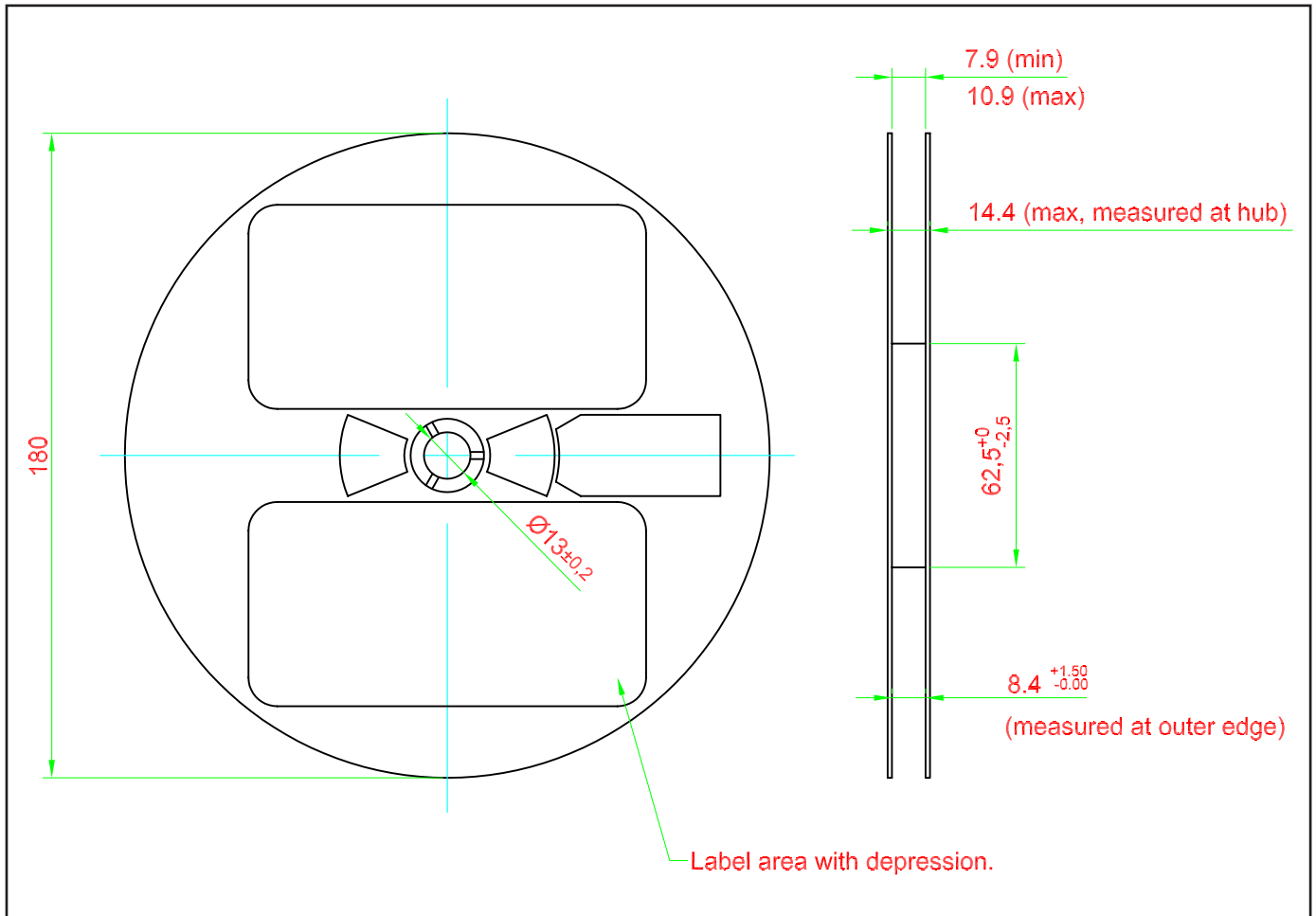


## Taping and orientation

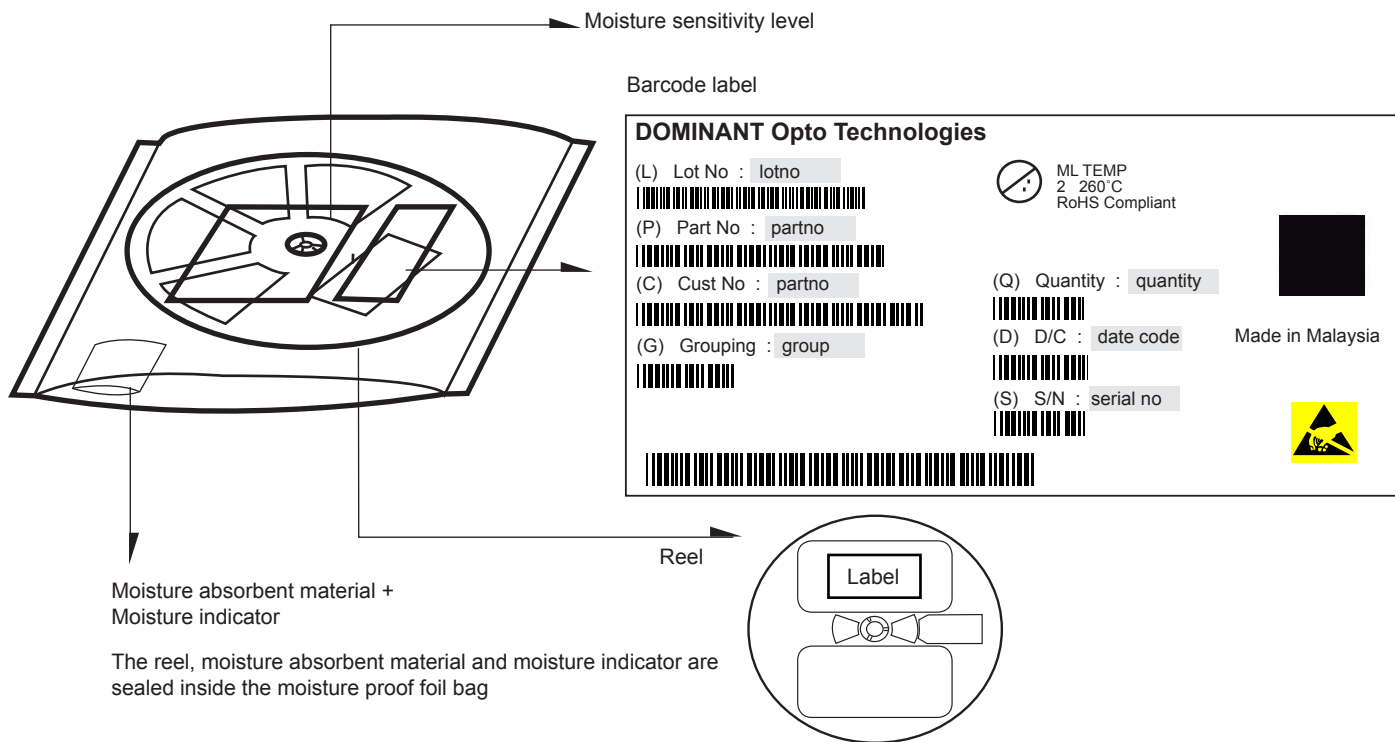
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



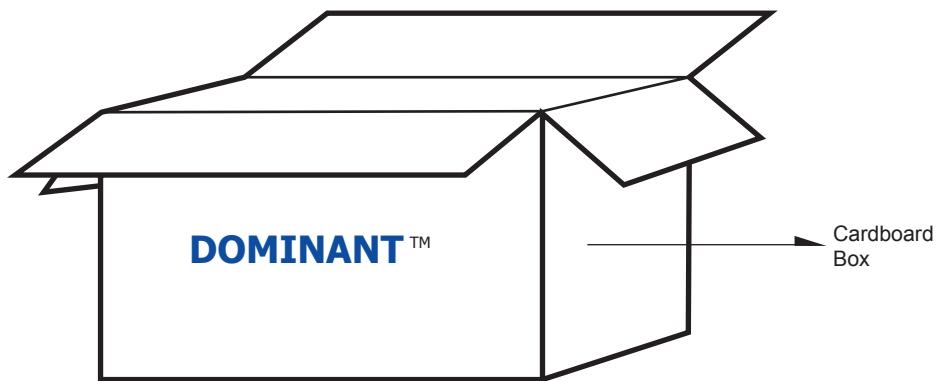
**Packaging Specification**



**Packaging Specification**



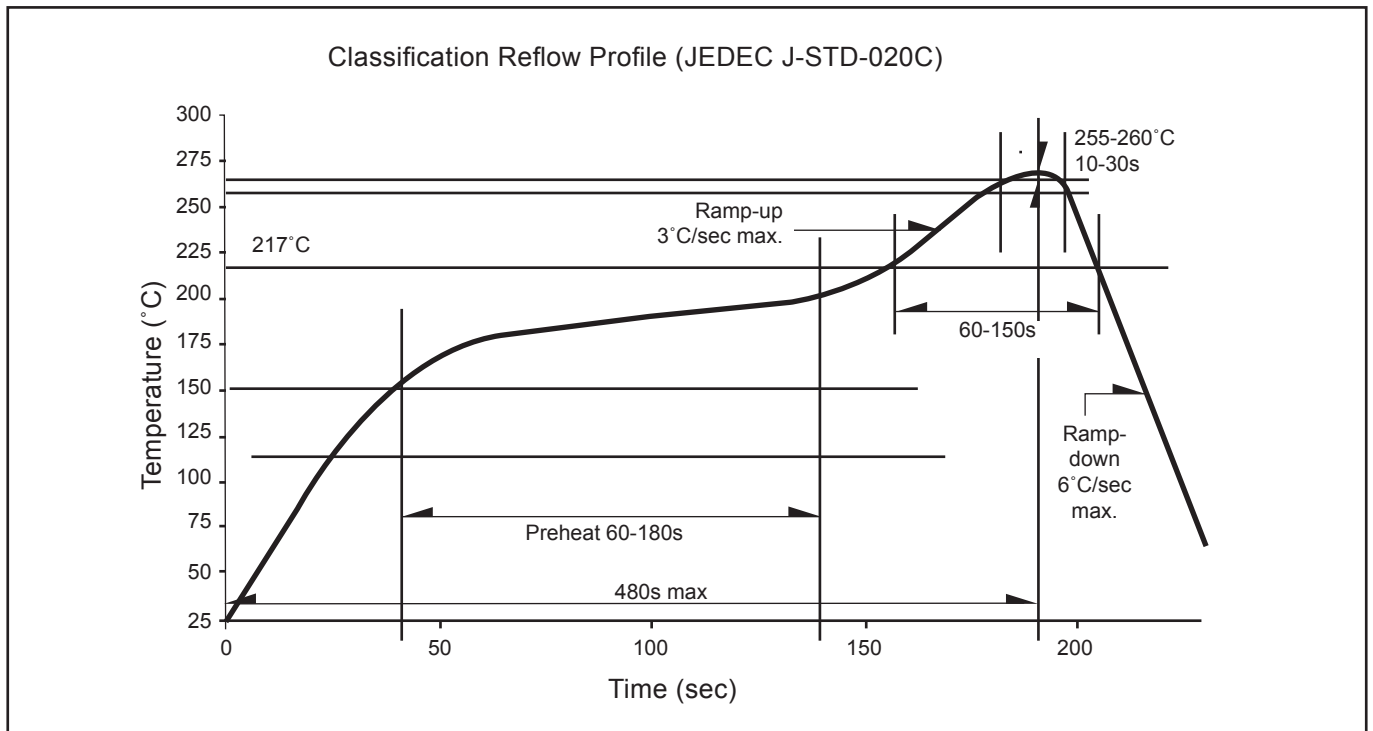
Average 1pc Extreme Power DomiLED		1 completed bag (1000pcs)
Weight (gram)	0.036	240 ± 10



**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**



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## 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  $k=3$ ).
- 1.3 Radiant 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  $k=3$ ).
- 1.4 Radiant 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  $\pm 0.005$  and an expanded uncertainty of  $\pm 0.01$  (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  $k=3$ ).

### 4) **Corrosion Robustness:**

- 4.1 Test conditions:  $40 \text{ }^\circ\text{C} / 90 \text{ } \%$  rh /  $15 \text{ ppm H}_2\text{S} / 336 \text{ h}$ .  
= Stricter than IEC 60068-2-43 ( $\text{H}_2\text{S}$ ) [ $25 \text{ }^\circ\text{C} / 75\% \text{ rh} / 10 \text{ ppm H}_2\text{S} / 21 \text{ days}$ ].

**Revision History**

Page	Subjects	Date of Modification
-	Initial Release	03 Nov 2016
3	Update Wavelength Grouping for Super Red	14 Aug 2017
5	Update Graph: - Relative Luminous Flux Vs Forward Current - Forward Current Vs Forward Voltage	27 Sep 2017
5	Update Temperature Coefficient Graph	28 Dec 2017

**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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