

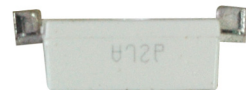
DomiLED

Synonymous with function and performance, the DomiLED series is perfectly suited for a variety of cross-industrial applications due to its small package outline, durability and superior brightness.



Features:

- > High brightness surface mount LED.
- > Designed for sideway illumination.
- > 120° viewing angle.
- > Small package outline.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.
- > Qualified based on AEC-Q101 Standard.
- > Passed Corrosion Resistant Test. *Appx. 4.1*



Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).

Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 20mA IV (mcd) <i>Appx. 1.1</i>		
			Min.	Typ.	Max.
● DSW-LSG-V2W-1	White	120	900.0	1400.0	1800.0
DSW-LSG-WX1-1	White	120	1125.0	1800.0	2240.0
DSW-LSG-WX1-JKPL	White	120	1125.0	1800.0	2240.0

● Not for new design

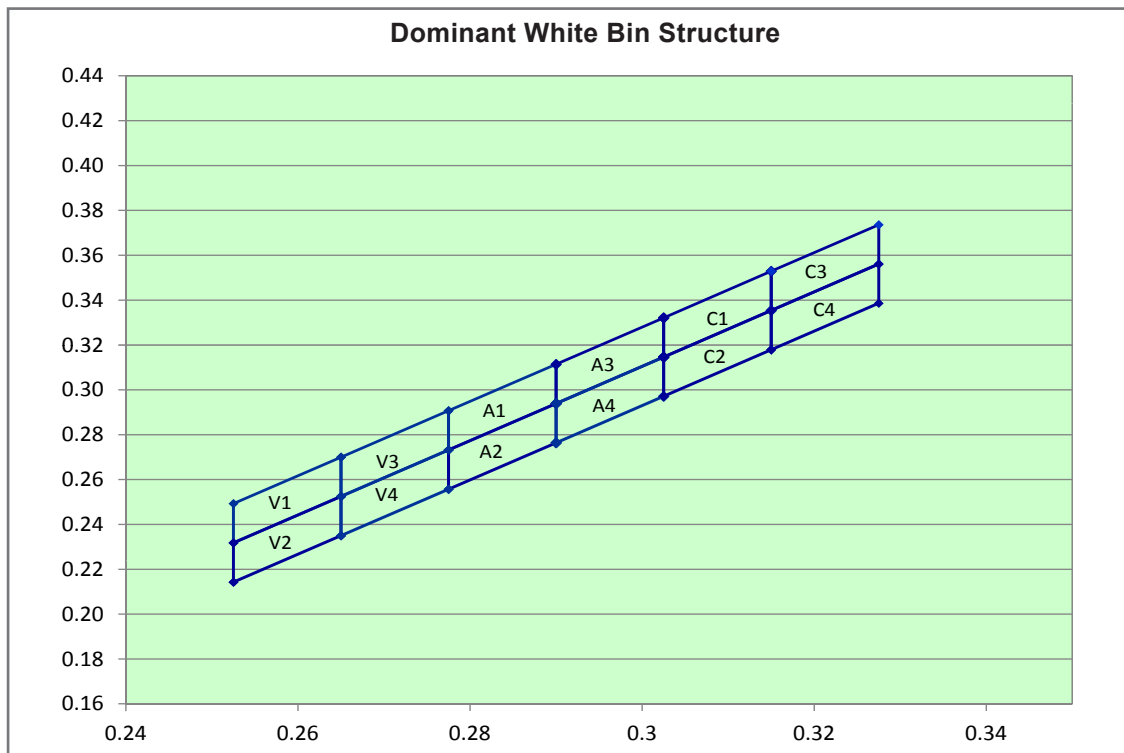
Part Number	Vf @ If = 20mA <i>Appx. 3.1</i>			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DSW-LSG	2.8	3.2	3.6	5.0

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005)	100	mA
Reverse voltage; Ir (max) = 10uA	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	80	mW
Thermal resistance		
- Junction / ambient, R _{th JA}	460	K/W
- Junction / solder point, R _{th JS}	240	K/W
(Mounting on FR4 PCB, pad size ≥ 5 mm ² per pad)		

White Color Grouping *Appx. 2.1*

For this color bin selection, part number will be DSW-LSG-xxxx-1

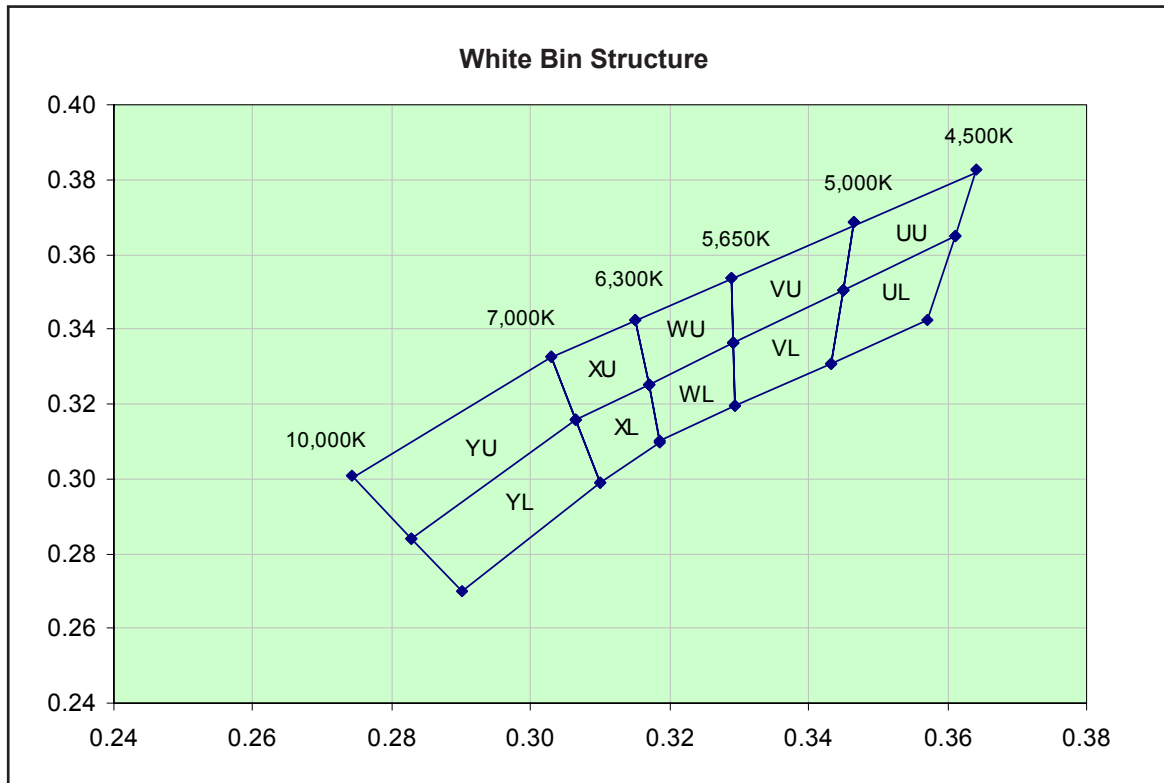


Bin		1	2	3	4
V1	Cx	0.2525	0.2650	0.2650	0.2525
	Cy	0.2318	0.2525	0.2700	0.2493
V2	Cx	0.2525	0.2650	0.2650	0.2525
	Cy	0.2143	0.2350	0.2525	0.2318
V3	Cx	0.2650	0.2775	0.2775	0.2650
	Cy	0.2525	0.2732	0.2907	0.2700
V4	Cx	0.2650	0.2775	0.2775	0.2650
	Cy	0.2350	0.2557	0.2732	0.2525
A1	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2732	0.2939	0.3114	0.2907
A2	Cx	0.2775	0.2900	0.2900	0.2775
	Cy	0.2557	0.2764	0.2939	0.2732
A3	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2939	0.3146	0.3321	0.3114
A4	Cx	0.2900	0.3025	0.3025	0.2900
	Cy	0.2764	0.2971	0.3146	0.2939
C1	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.3146	0.3354	0.3529	0.3321
C2	Cx	0.3025	0.3150	0.3150	0.3025
	Cy	0.2971	0.3179	0.3354	0.3146
C3	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3354	0.3561	0.3736	0.3529
C4	Cx	0.3150	0.3275	0.3275	0.3150
	Cy	0.3179	0.3386	0.3561	0.3354

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.

White Color Grouping *Appx. 2.1*

For this color bin selection, part number will be DSW-LSG-xxxx-1 (**Not Offer For New Design**)

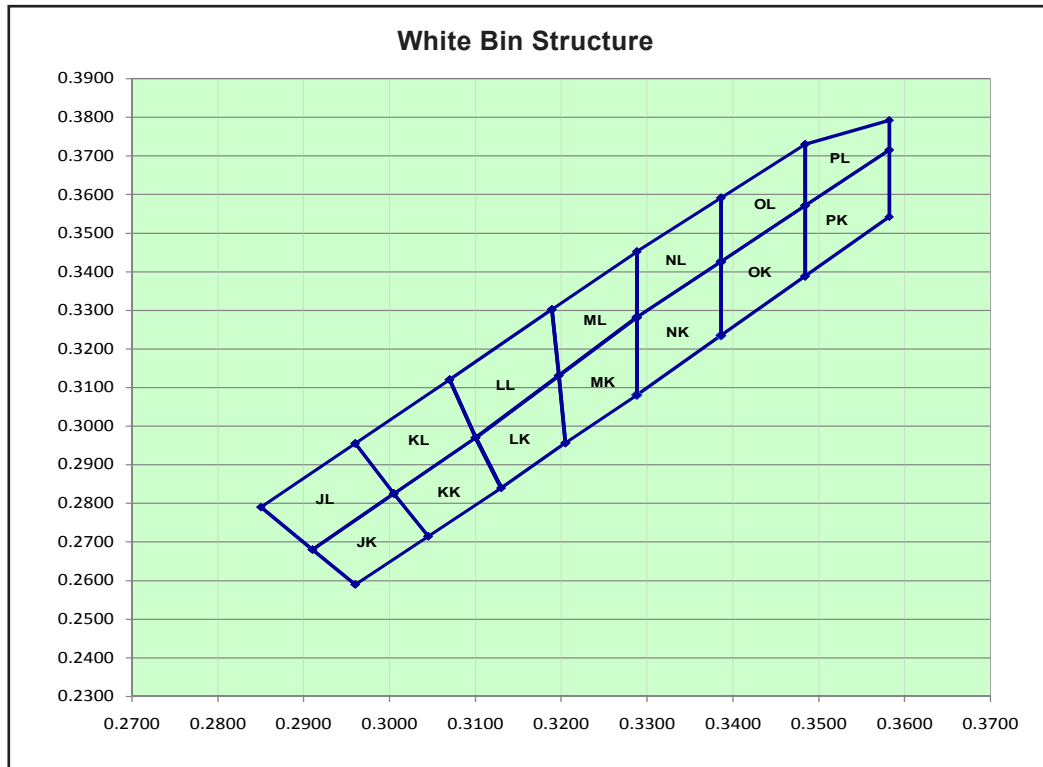


Bin		1	2	3	4
YU	Cx	0.274	0.283	0.307	0.303
	Cy	0.301	0.284	0.316	0.333
YL	Cx	0.283	0.290	0.310	0.307
	Cy	0.284	0.270	0.299	0.316
XU	Cx	0.303	0.307	0.317	0.315
	Cy	0.333	0.316	0.325	0.343
XL	Cx	0.307	0.310	0.319	0.317
	Cy	0.316	0.299	0.310	0.325
WU	Cx	0.315	0.317	0.329	0.329
	Cy	0.343	0.325	0.336	0.354
WL	Cx	0.317	0.319	0.329	0.329
	Cy	0.325	0.310	0.319	0.336
VU	Cx	0.329	0.329	0.345	0.347
	Cy	0.354	0.336	0.350	0.368
VL	Cx	0.329	0.329	0.343	0.345
	Cy	0.336	0.319	0.331	0.350
UU	Cx	0.347	0.345	0.361	0.364
	Cy	0.368	0.350	0.365	0.383
UL	Cx	0.345	0.343	0.357	0.361
	Cy	0.350	0.331	0.343	0.365

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.

White Color Grouping *Appx. 2.1*

For this color bin selection, part number will be DSW-LSG-xxxx-JKPL



Bin		1	2	3	4
JK	Cx	0.2960	0.2910	0.3005	0.3045
	Cy	0.2590	0.2680	0.2825	0.2715
JL	Cx	0.291	0.2850	0.2960	0.3005
	Cy	0.2680	0.2790	0.2955	0.2825
KK	Cx	0.3045	0.3005	0.3100	0.3130
	Cy	0.2715	0.2825	0.2970	0.2840
KL	Cx	0.3005	0.2960	0.3070	0.3100
	Cy	0.2825	0.2955	0.3120	0.2970
NK	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3081	0.3282	0.3426	0.3235
NL	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3282	0.3453	0.3591	0.3426
OK	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3235	0.3426	0.3571	0.3388
OL	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3426	0.3591	0.3730	0.3571
LK	Cx	0.3100	0.3197	0.3205	0.3130
	Cy	0.2970	0.3131	0.2956	0.2840
LL	Cx	0.3070	0.3189	0.3197	0.3100
	Cy	0.3120	0.3302	0.3131	0.2970

Bin		1	2	3	4
MK	Cx	0.3197	0.3288	0.3288	0.3205
	Cy	0.3131	0.3282	0.3081	0.2956
ML	Cx	0.3189	0.3288	0.3288	0.3197
	Cy	0.3302	0.3452	0.3282	0.3131
PK	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3388	0.3571	0.3715	0.3542
PL	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3571	0.3730	0.3792	0.3715

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 <i>Appx. 1.1</i> IV (mcd)
V2	900.0 ... 1125.0
W1	1125.0 ... 1400.0
W2	1400.0 ... 1800.0
X1	1800.0 ... 2240.0

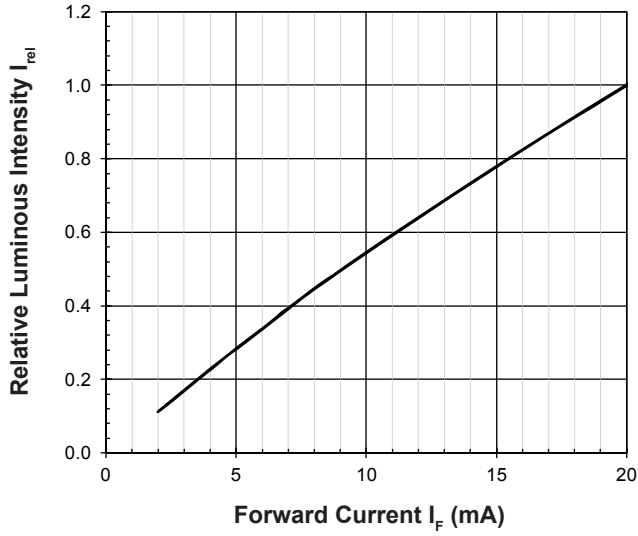
Vf Binning (Optional)

Vf Bin @ 20mA	Forward Voltage (V) <i>Appx. 3.1</i>
V1	2.75 ... 3.05
V2	3.05 ... 3.35
V3	3.35 ... 3.65

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

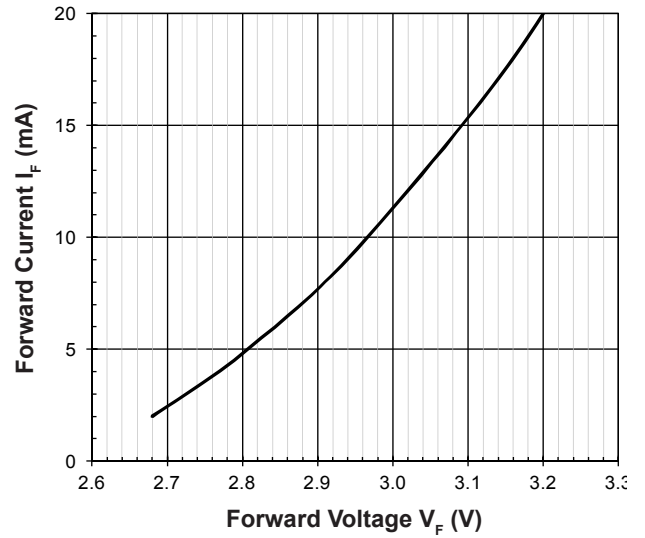
Relative Luminous Intensity Vs Forward Current

$I_v/I_v(20\text{mA}) = f(I_F); T_j = 25^\circ\text{C}$



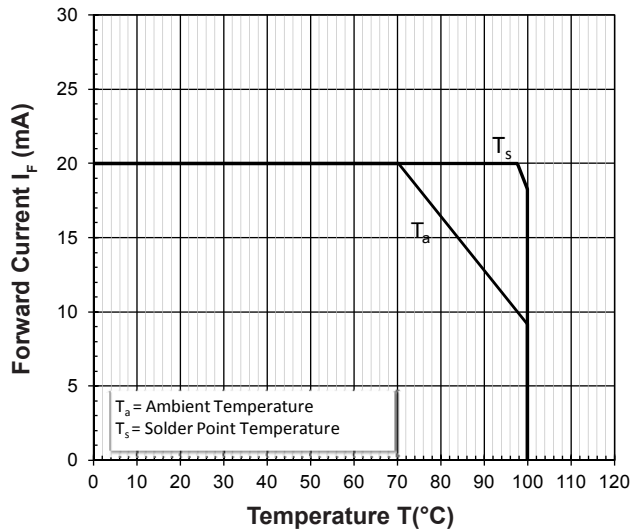
Forward Current Vs Forward Voltage

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



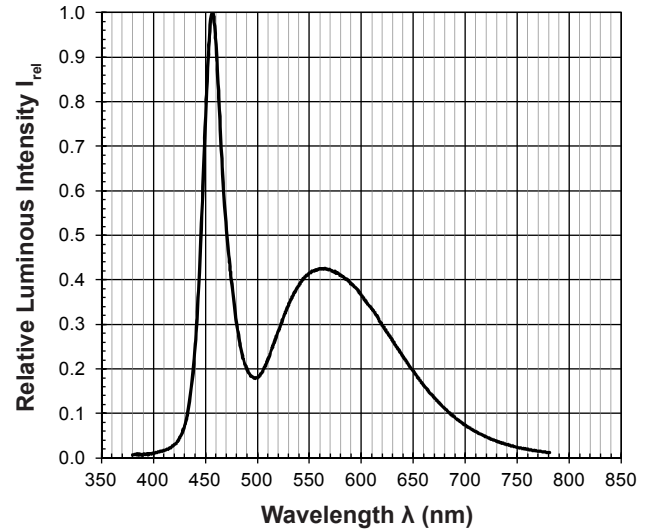
Maximum Current Vs Temperature

$I_F = f(T)$



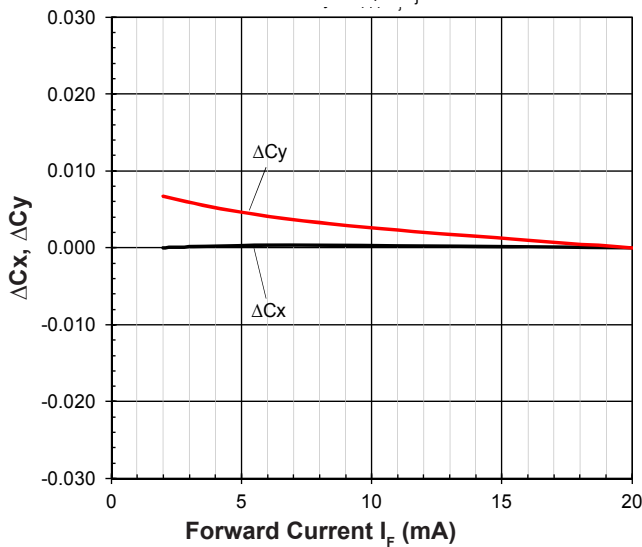
Relative Spectral Emission

$I_{rel} = f(\lambda); T_j = 25^\circ\text{C}; I_F = 20\text{mA}$



Chromaticity Coordinate Shift Vs Forward Current

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

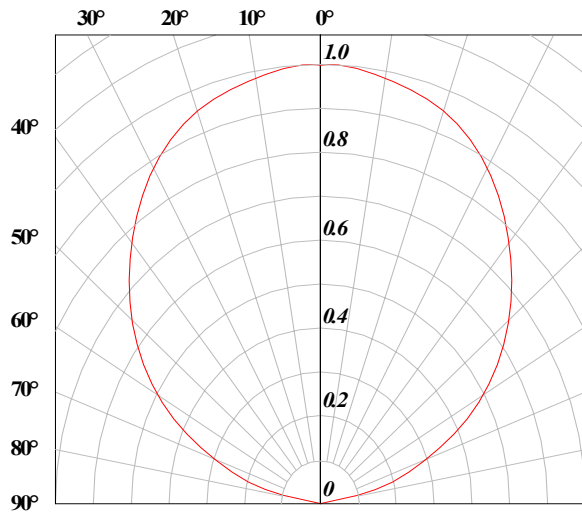


Allowable Forward Current Vs Duty Ratio

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

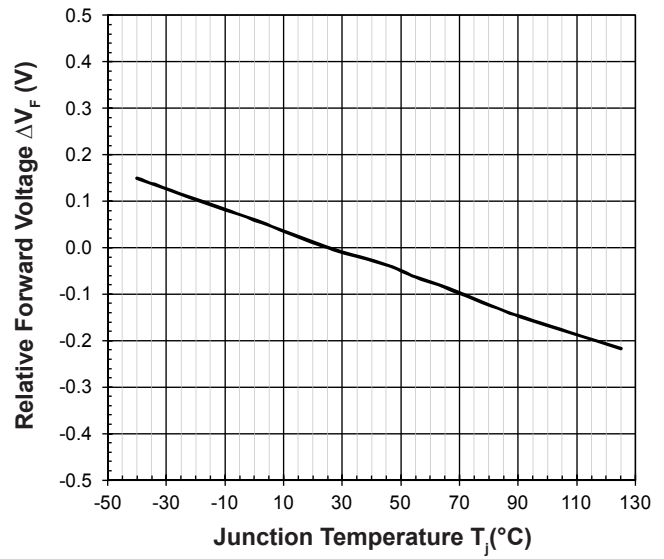


Radiation Pattern



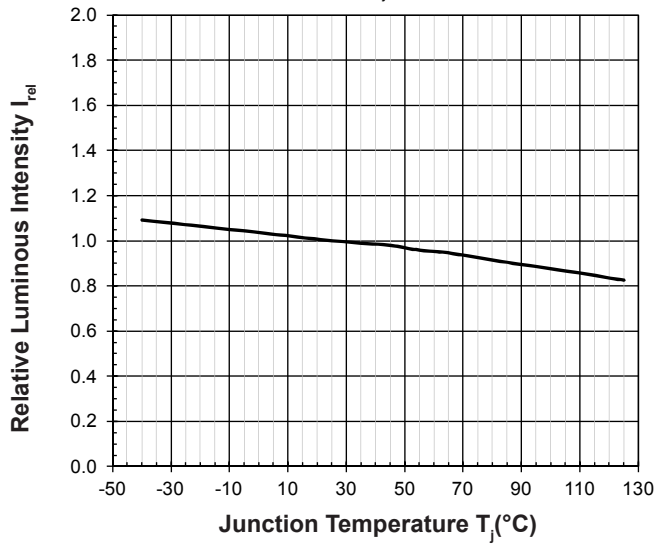
Relative Forward Voltage Vs Junction Temperature

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 20\text{mA}$$



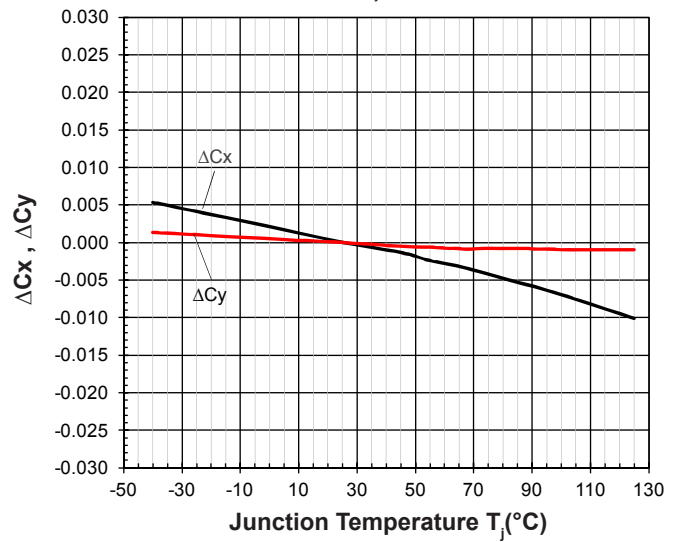
Relative Luminous Intensity Vs Junction Temperature

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 20\text{mA}$$

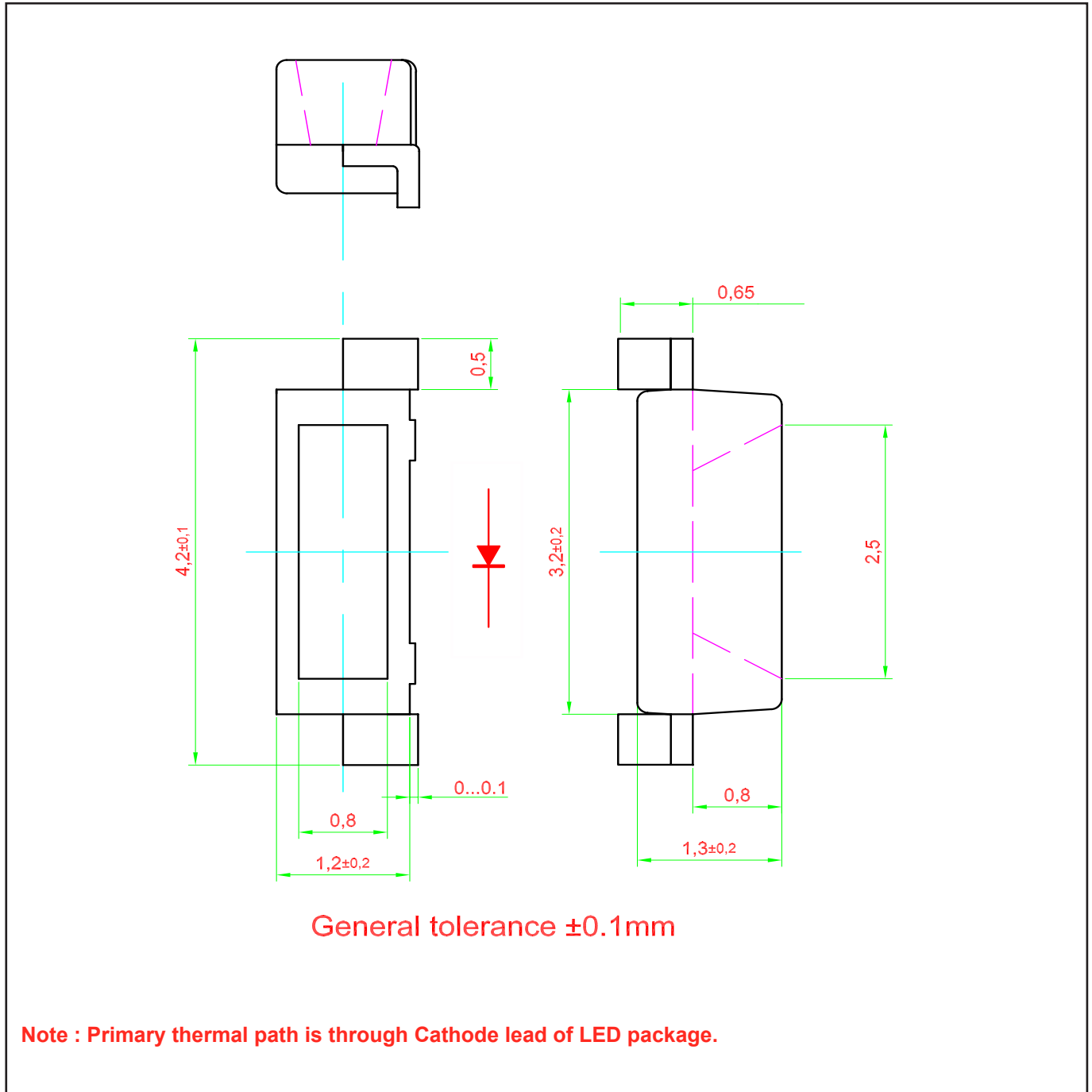


Chromaticity Coordinate Shift Vs Junction Temperature

$$\Delta Cx, \Delta Cy = f(T_j); I_F = 20\text{mA}$$



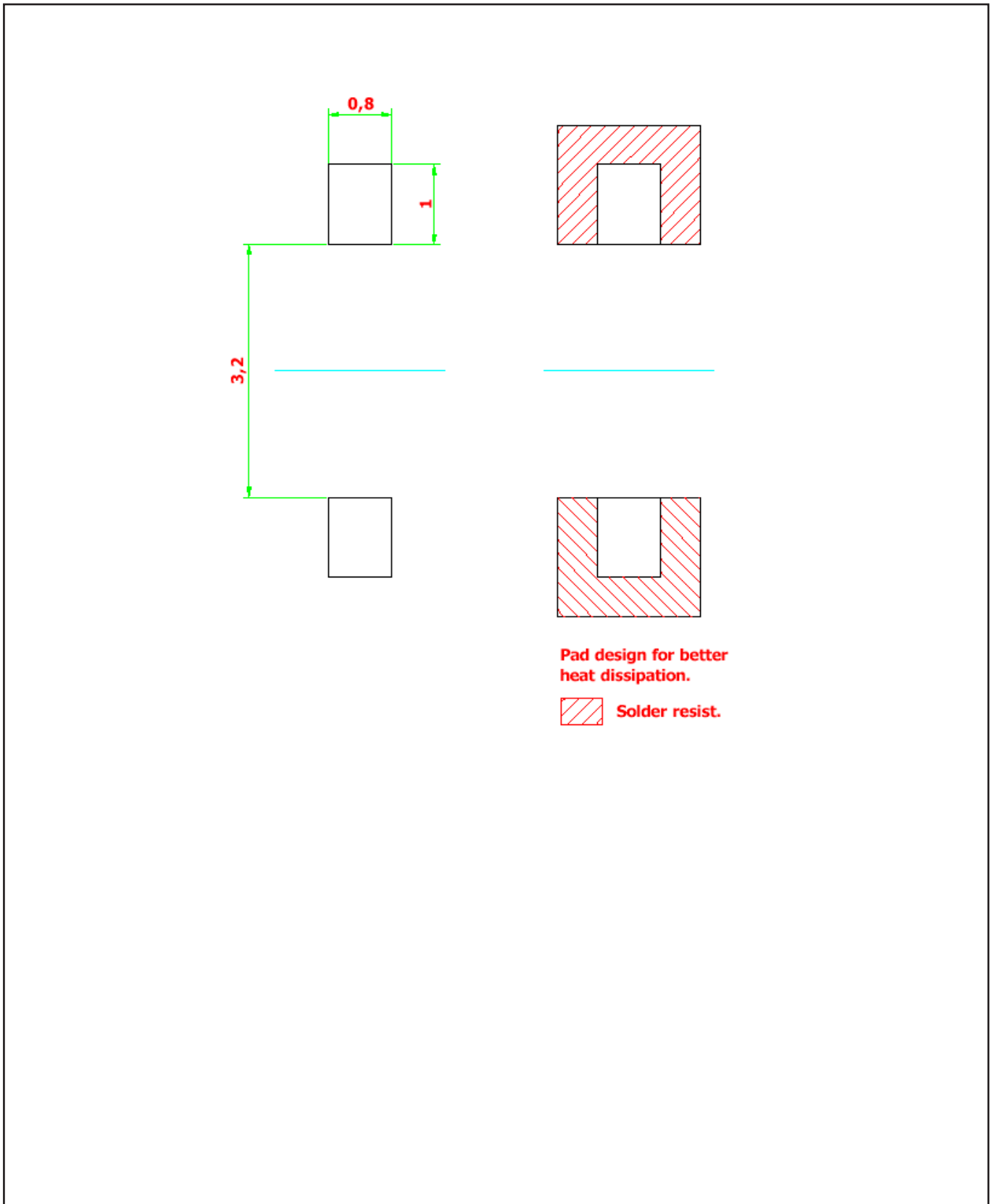
Right Angle DomiLED



Material

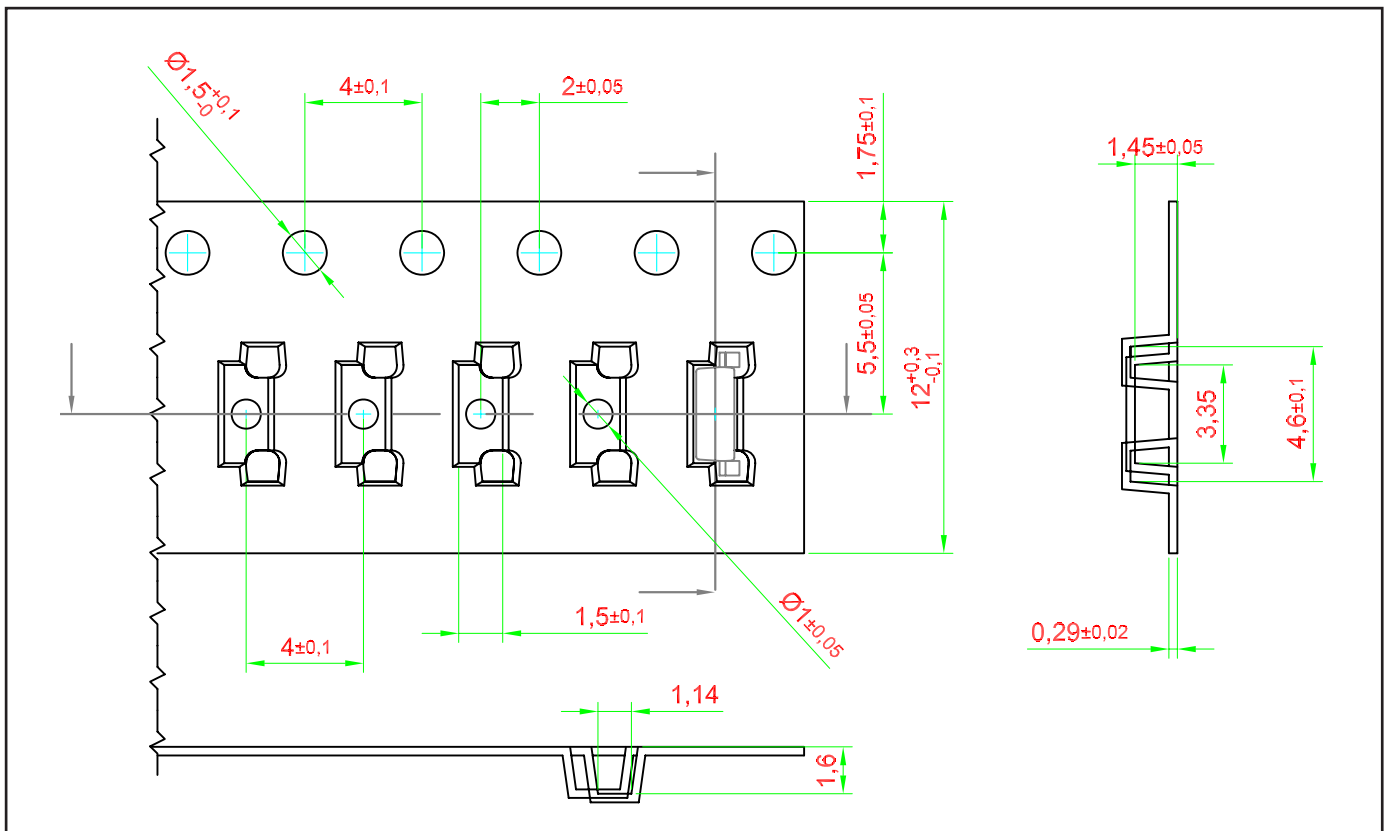
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Silicone Resin
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad

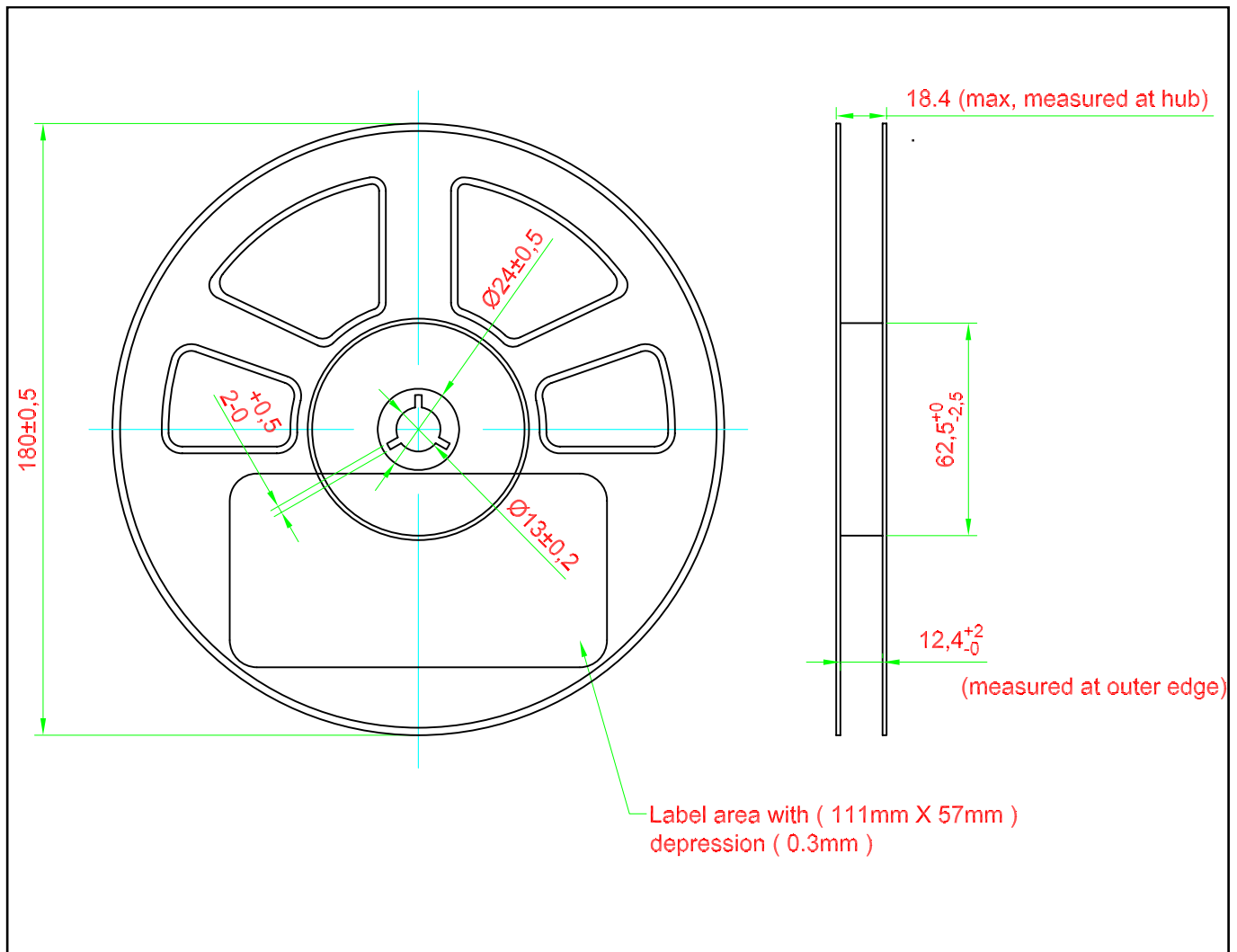


Taping and orientation

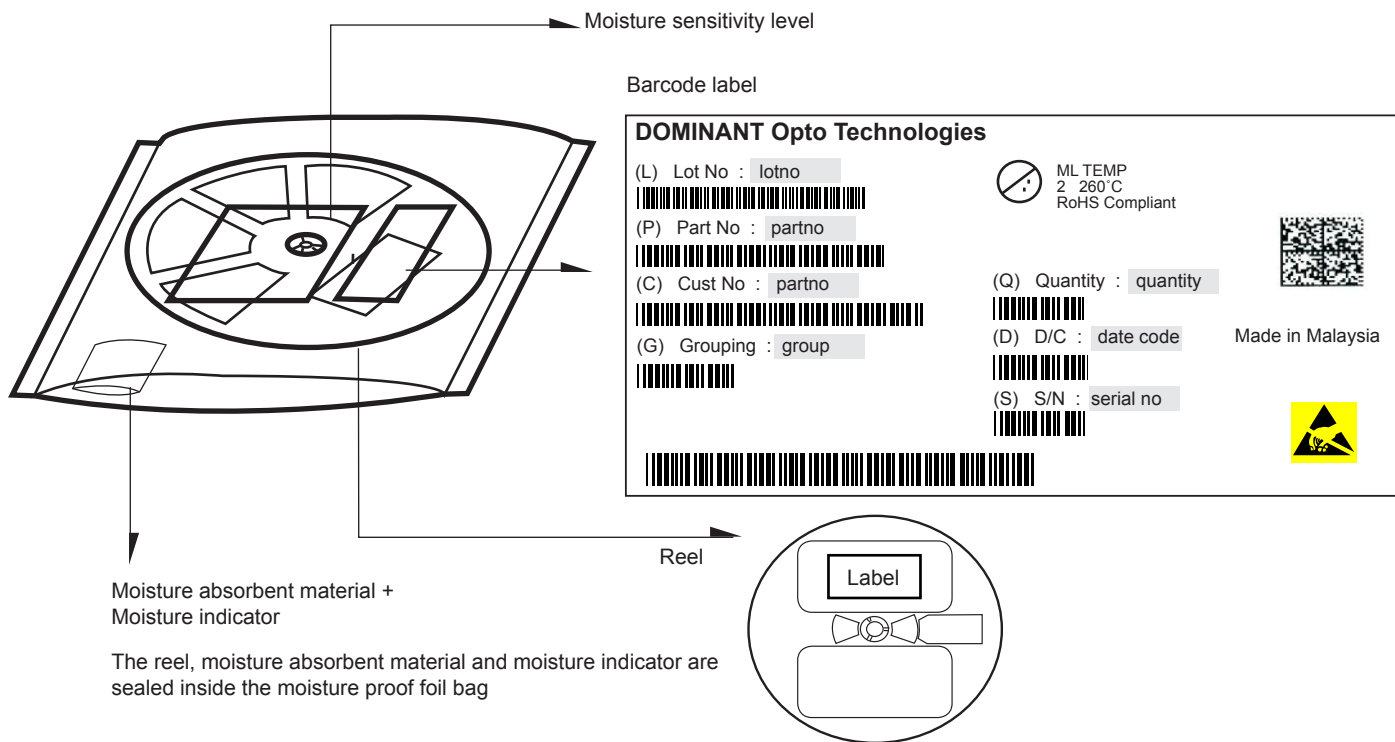
- Reels come in quantity of 2500 units.
- Reel diameter is 180 mm.



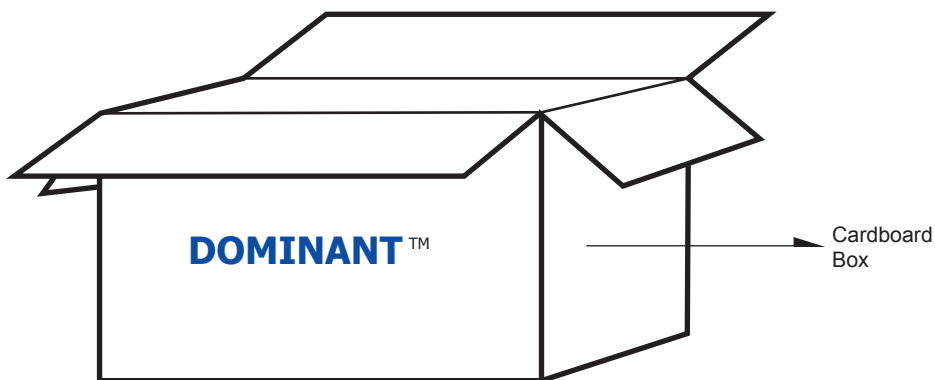
Packaging Specification



Packaging Specification



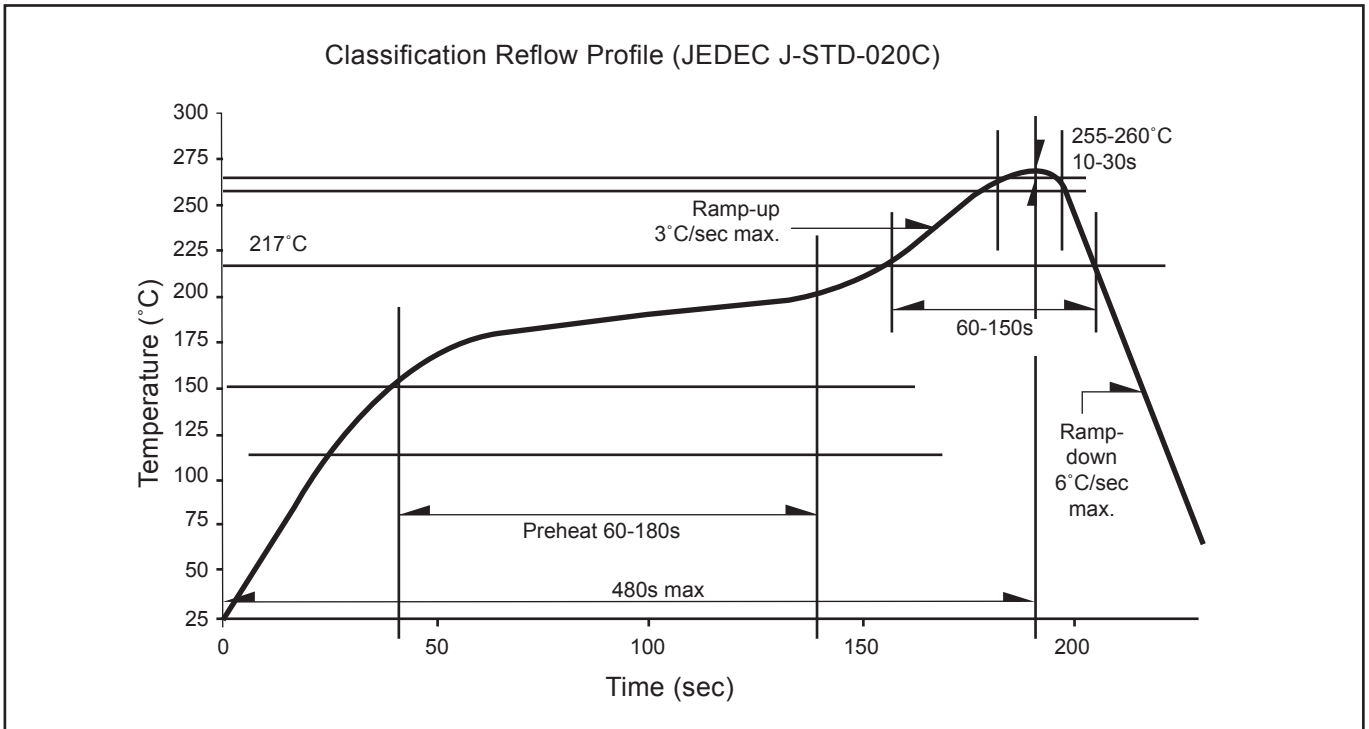
Average 1pc Right Angle DomiLED		1 completed bag (2500pcs)
Weight (gram)	0.010	240 ± 10



For Right Angle 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 $k=3$).

4) **Corrosion Robustness:**

- 4.1 Test conditions: $40\text{ }^\circ\text{C}$ / 90% rh / $15\text{ ppm H}_2\text{S}$ / 336 h .
= Stricter than IEC 60068-2-43 (H_2S) [$25\text{ }^\circ\text{C}$ / 75% rh / $10\text{ ppm H}_2\text{S}$ / 21 days].

Revision History

Page	Subjects	Date of Modification
2, 5, 6	Add new partno: DSW-LSG-WX1-JKPL Add Color Bin Structure	18 Apr 2013
2	Update Vf	04 Jul 2013
3	Update Color Bin Structure	28 Oct 2013
7	Add Vf Binning	11 Nov 2014
4	Update Features Not For New Design for Color Bin Structure	14 Apr 2015
8	Add Graph: Chromaticity Vs Forward Current	01 Jun 2015
1, 9, 11, 13	Add Features Add Notes in Package Outline Update Carrier Tape Update Packaging Specification	10 Mar 2016
1, 10, 16	Update Features Update Package Outline Add Appendix	29 Aug 2016
1, 8, 9, 16	Update Features Update Graph Update Appendix	28 Sep 2016
1	Update Product Photo	10 Feb 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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