

Mini DomiLED™

With the intense colors that seem to glow with energy and its significant brightness, Mini DomiLED™ LED is a highly reliable design device. Its dynamic nature makes it perfect choice for lighthing applications, office and home applications and standard industrial applications.



Features:

- > High brightness surface mount LED.
- > Based on InGaN technology.
- > 120° viewing angle.
- > Small package outline (LxWxH) of 2.0 x 1.4 x 1.3mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering.
- > Environmental friendly; RoHS compliance.



Applications:

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



Optical Characteristics at Tj=25°C

Part Ordering Number	Viewing Angle°	Luminous Intensity @ IF = 10mA IV (mcd)		
		Min.	Typ.	Max.
DNW-CJG-QR2-1-I1	120	71.50	112.50	180.0
DNW-CJG-P2R1-3K6L-I1	120	56.00	90.00	140.00
DNW-CJG-Q2S1-5K8L-I1	120	90.00	140.00	224.00
DNW-CJG-PQ2-JKPL-I1	120	45.00	71.50	112.50

NOTE

1. All part number above comes in a quantity of 3000 units per reel.
2. Other luminous intensity groups are also available upon request.
3. Luminous intensity is measured with an accuracy of $\pm 11\%$.
4. Color binning is carried for all units as per the color binning table. Only one color group is allowed for each reel.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 10 mA			Vr @ Ir = 10 μ A
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DNW-CJG	2.7	3.1	3.8	5.0

Forward Voltage, Vf is measured with an accuracy of ± 0.1 V.

Absolute Maximum Ratings

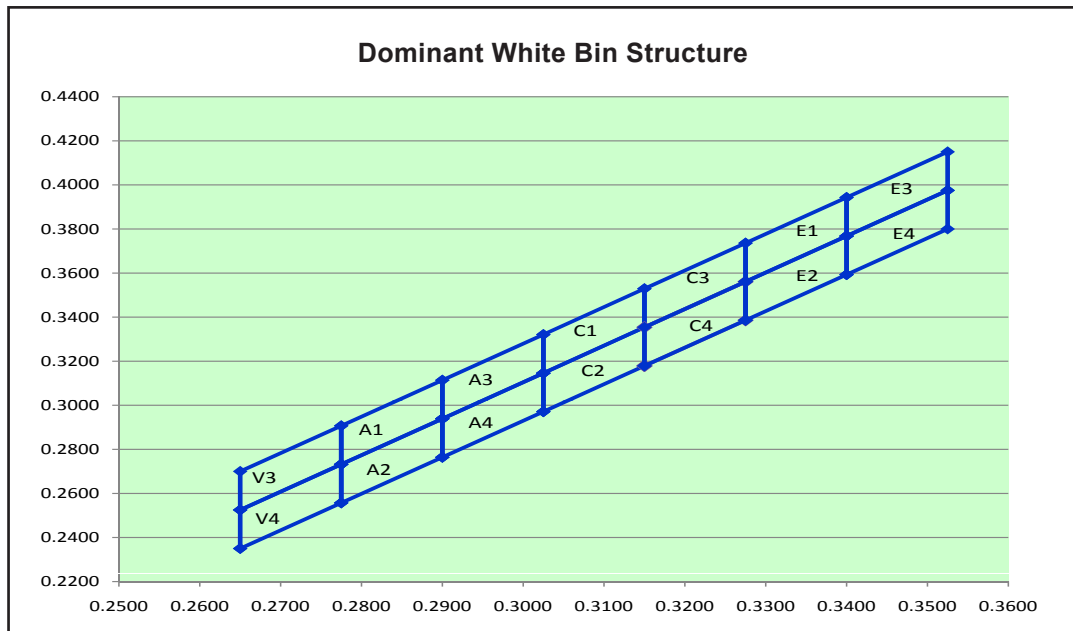
	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp $\leq$ 10 μ s, Duty cycle = 0.005)	200	mA
Reverse voltage	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	85	mW
Thermal resistance		
- Junction / ambient, Rth JA	480	K/W
- Junction / solder point, Rth JS	230	K/W
(Mounting on FR4 PCB, pad size $\geq$ 16 mm ² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of V_F (typ) $I_F = 10\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$	TC_V	DNW-CJG	-2.9	mV / K
Temperature coefficient of I_V (typ) $I_F = 10\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$	TC_{IV}	DNW-CJG	-0.3	% / K
Temperature coefficient of C_x (typ) $I_F = 10\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$	TC_{Cx}	DNW-CJG	-0.00015	C_x / K
Temperature coefficient of C_y (typ) $I_F = 10\text{mA}$; $0\text{ }^{\circ}\text{C} \leq T \leq 100\text{ }^{\circ}\text{C}$	TC_{Cy}	DNW-CJG	-0.00003	C_y / K

DNW-CJG, White Color Grouping

For this color bin selection, part number will be DNW-CJG-xxxx-1-I1



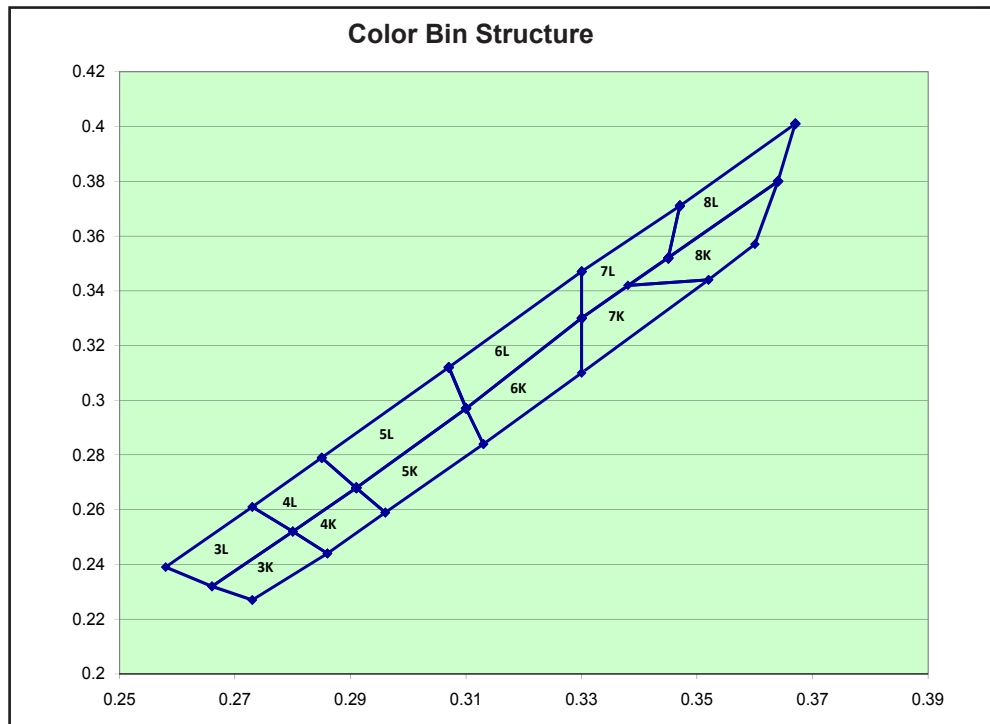
Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
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
E1	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3561	0.3768	0.3943	0.3736
E2	Cx	0.3275	0.3400	0.3400	0.3275
	Cy	0.3386	0.3593	0.3768	0.3561
E3	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3768	0.3975	0.4150	0.3943
E4	Cx	0.3400	0.3525	0.3525	0.3400
	Cy	0.3593	0.3800	0.3975	0.3768

Dominant color coordinate is measured with an accuracy of ± 0.01 .

DNW-CJG-I1 (3K8L), Color Bin Structure

For this color bin selection, part number will be DNW-CJG-xxxx-3K8L-I1



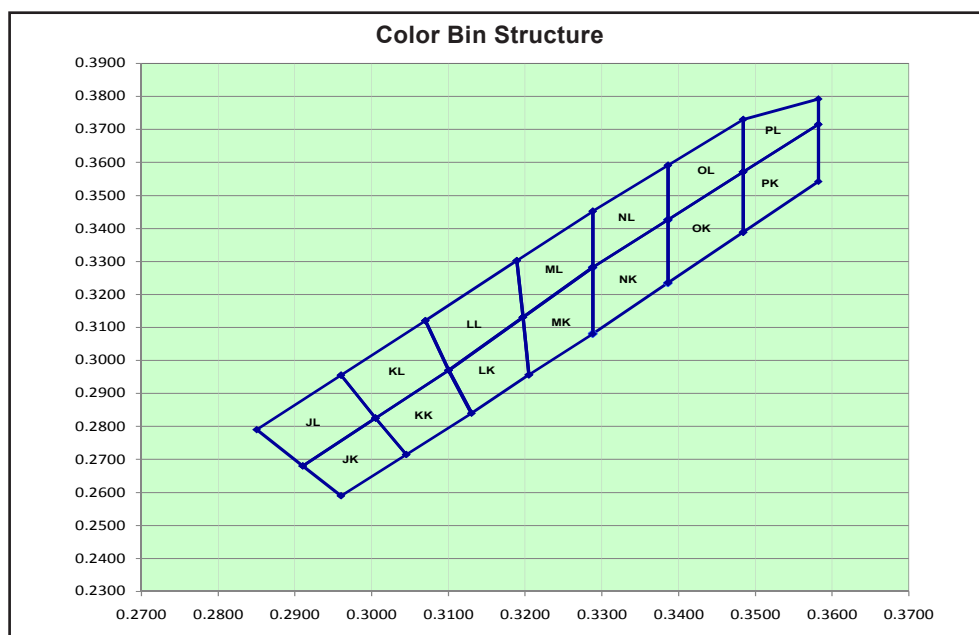
Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
3K	Cx	0.273	0.266	0.280	0.286
	Cy	0.227	0.232	0.252	0.244
3L	Cx	0.266	0.258	0.273	0.280
	Cy	0.232	0.239	0.261	0.252
4K	Cx	0.286	0.280	0.291	0.296
	Cy	0.244	0.252	0.268	0.259
4L	Cx	0.280	0.273	0.285	0.291
	Cy	0.252	0.261	0.279	0.268
5K	Cx	0.296	0.291	0.310	0.313
	Cy	0.259	0.268	0.297	0.284
5L	Cx	0.291	0.285	0.307	0.310
	Cy	0.268	0.279	0.312	0.297
6K	Cx	0.313	0.310	0.330	0.330
	Cy	0.284	0.297	0.330	0.310
6L	Cx	0.310	0.307	0.330	0.330
	Cy	0.297	0.312	0.347	0.330
7K	Cx	0.330	0.330	0.338	0.352
	Cy	0.310	0.330	0.342	0.344
7L	Cx	0.330	0.330	0.347	0.345
	Cy	0.330	0.347	0.371	0.352
8K	Cx	0.352	0.338	0.364	0.360
	Cy	0.344	0.342	0.380	0.357
8L	Cx	0.345	0.347	0.367	0.364
	Cy	0.352	0.371	0.401	0.380

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.

DNW-CJG (JKPL), Color Bin Structure

For this color bin selection, part number will be DNW-CJG-xxxx-JKPL-I1



Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

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
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

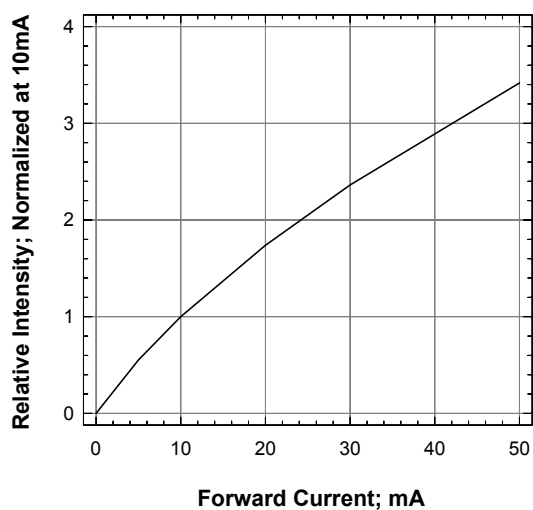
InGaN wavelength is very sensitive to drive current. Operating at lower current is not recommended and may yield unpredictable performance. Current pulsing should be used for dimming purposes.

Luminous Intensity Group at Tj=25°C

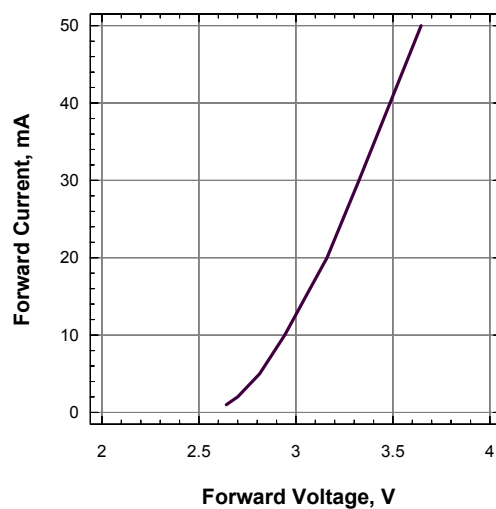
Brightness Group	Luminous Intensity IV (mcd)
P1	45.00...56.00
P2	56.00...71.50
Q1	71.50...90.00
Q2	90.00...112.50
R1	112.50...140.00
R2	140.00...180.00
S1	180.00...224.00

Luminous intensity is measured with an accuracy of $\pm 11\%$.

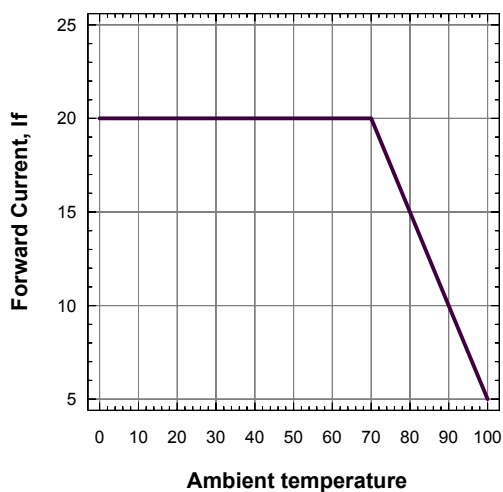
Relative Intensity Vs Forward Current



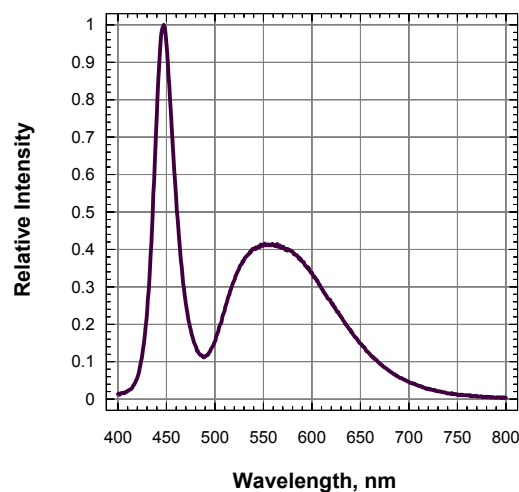
Forward Current Vs Forward Voltage



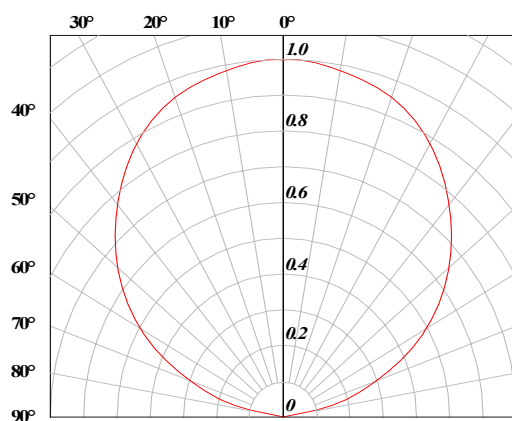
Maximum Current Vs Ambient Temperature



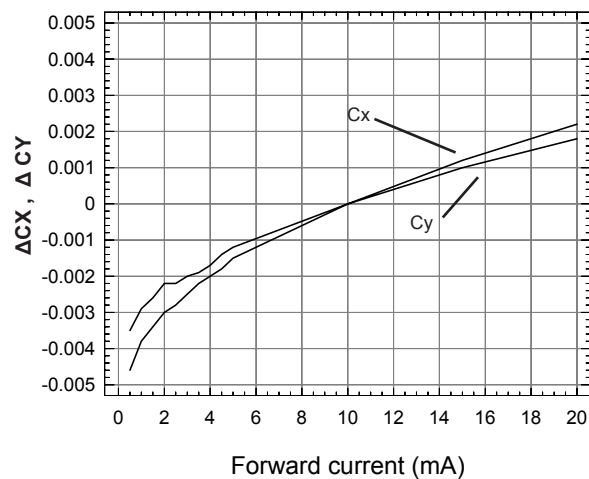
Relative Intensity Vs. Wavelength



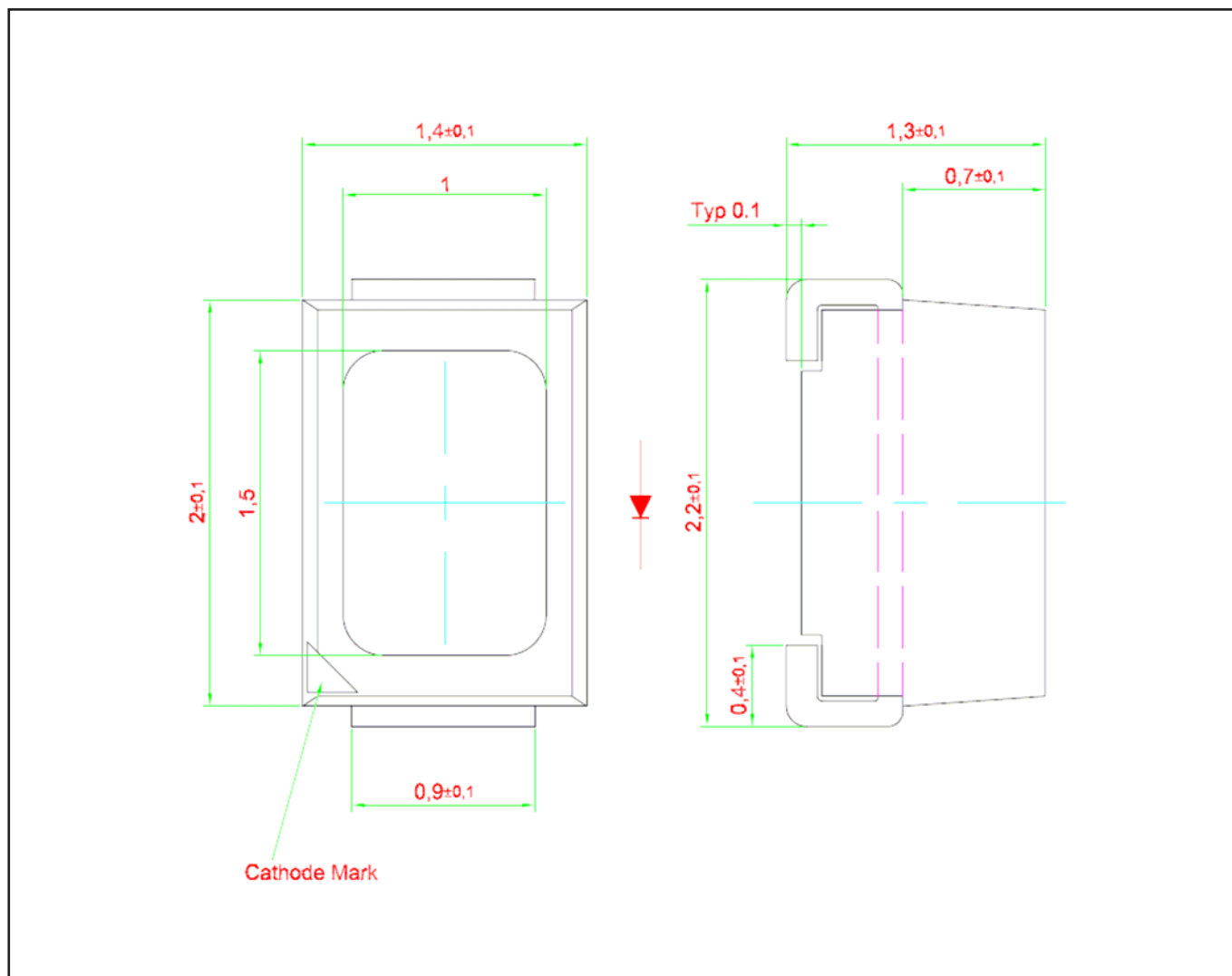
Radiation Pattern



Chromaticity vs Forward Current Test



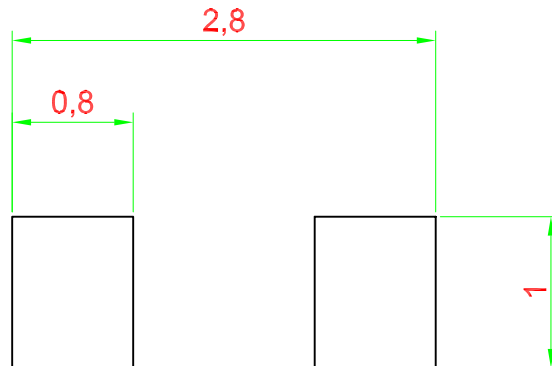
Mini DomiLED™ • InGaN White: DNW-CJG-I1 Package Outlines



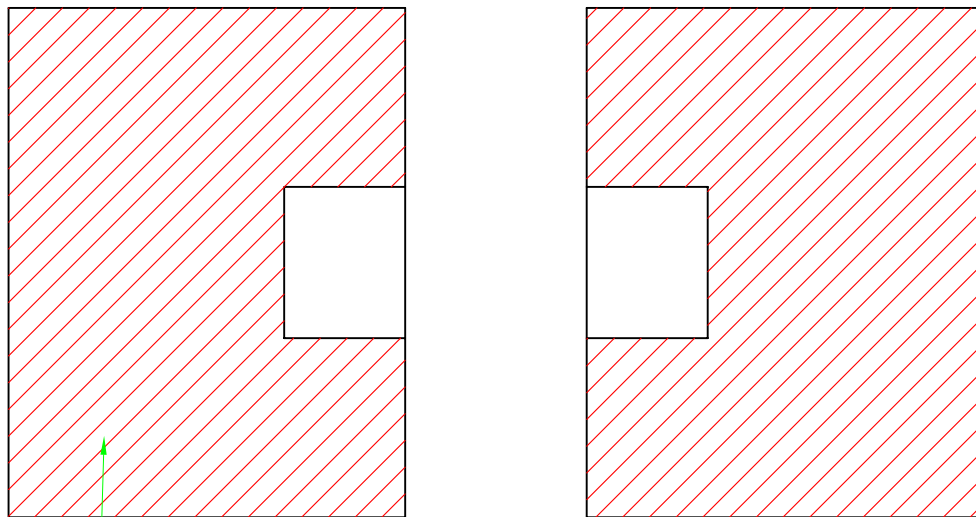
Material

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



Improved Design For Better Heat Dissipation



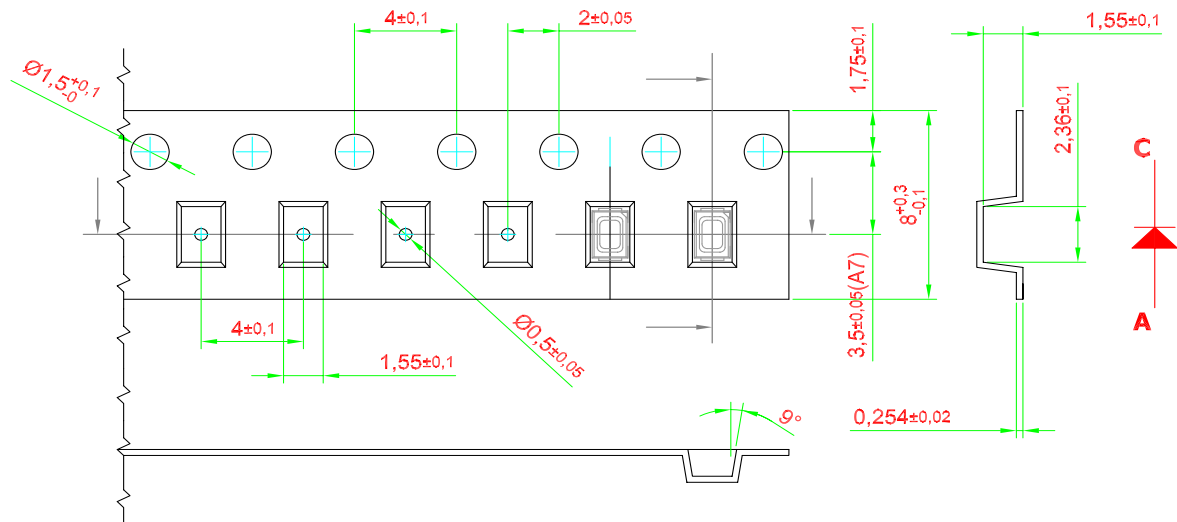
Additional Cu area for improved heat dissipation, > 16mm sq.



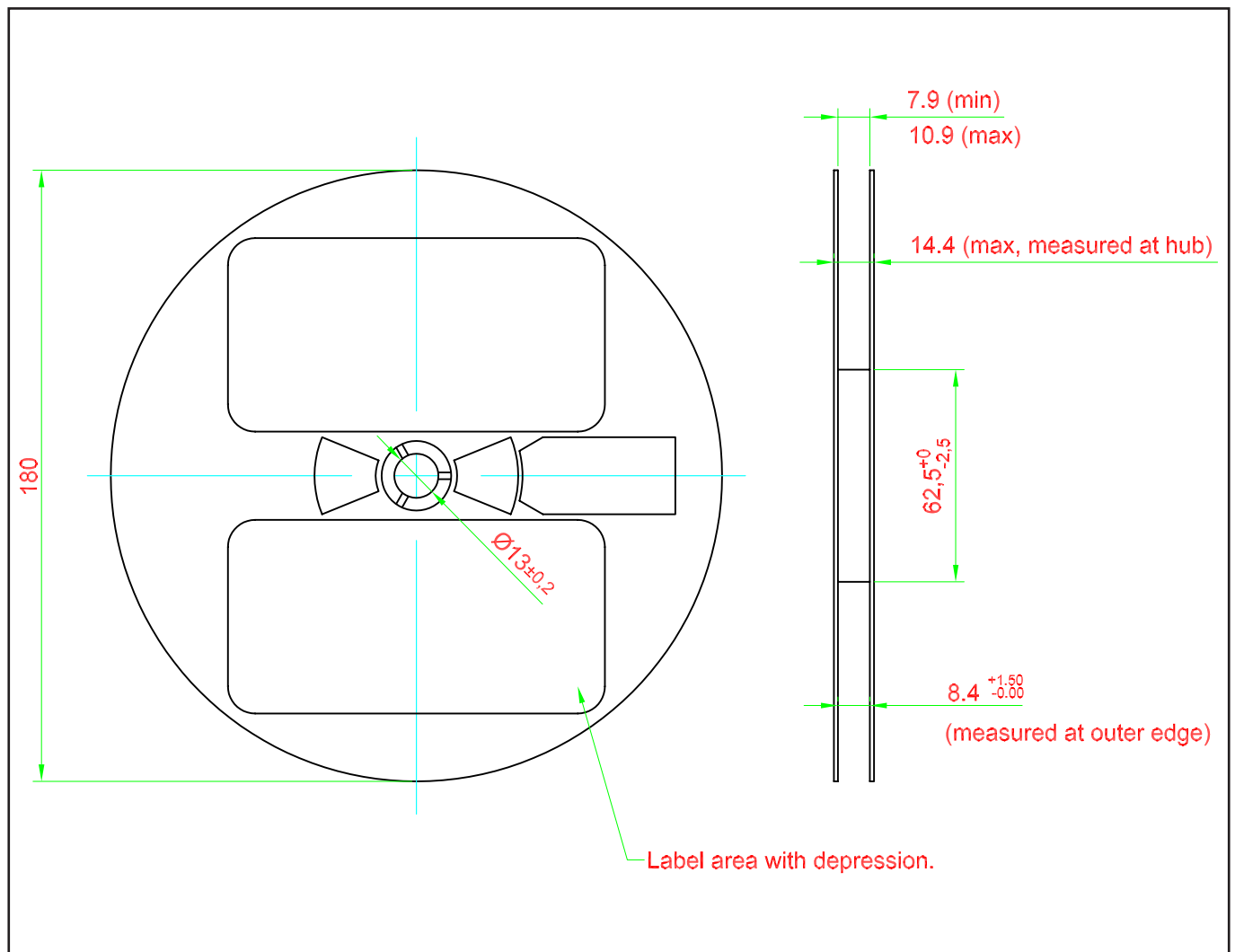
Solder resist.

Taping and orientation

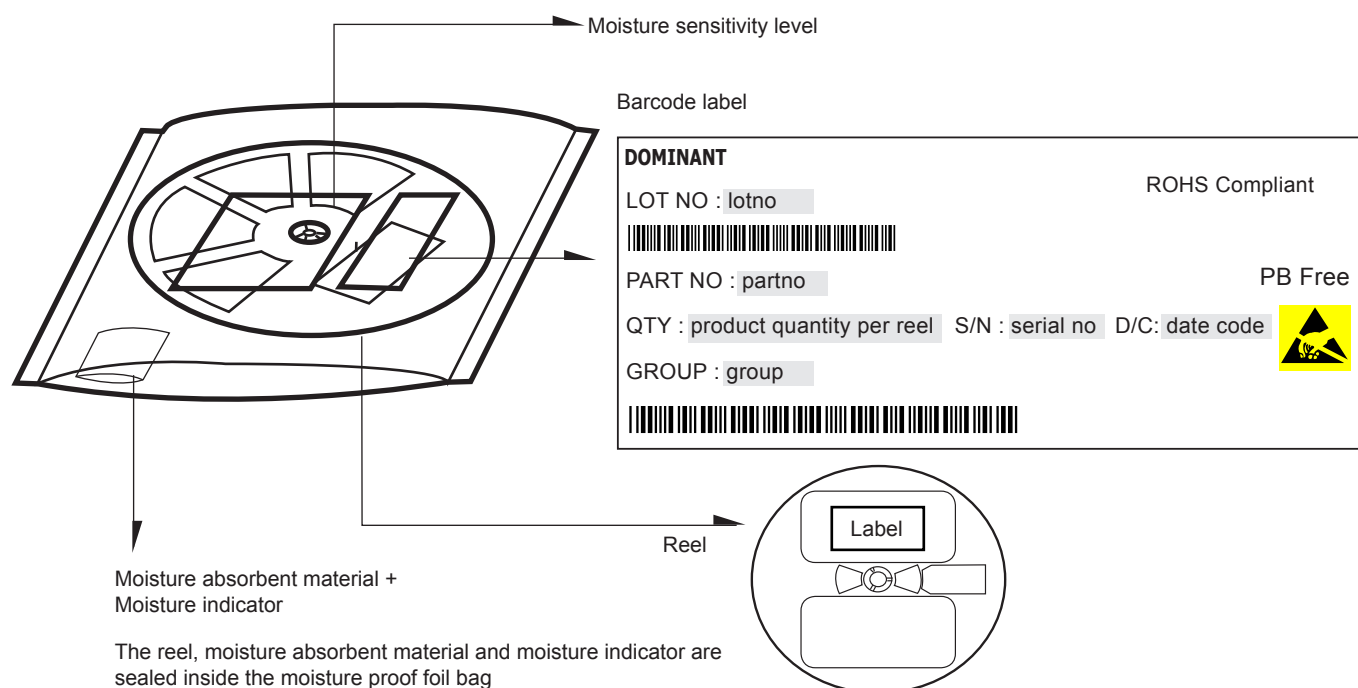
- Reels come in quantity of 3000 units.
- Reel diameter is 180 mm.



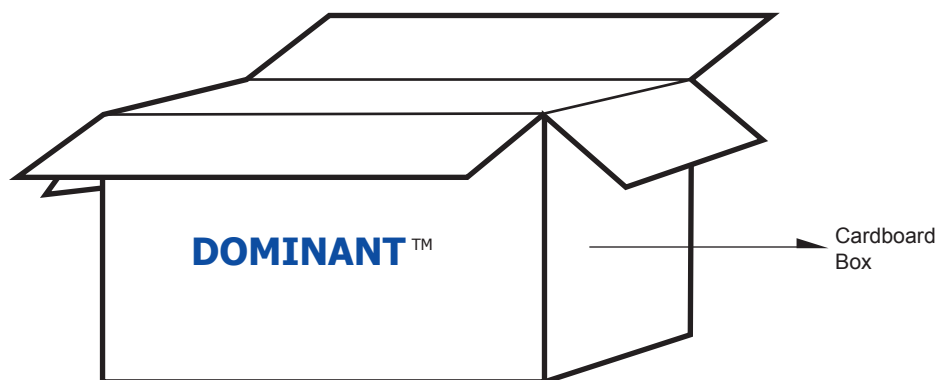
Packaging Specification



Packaging Specification



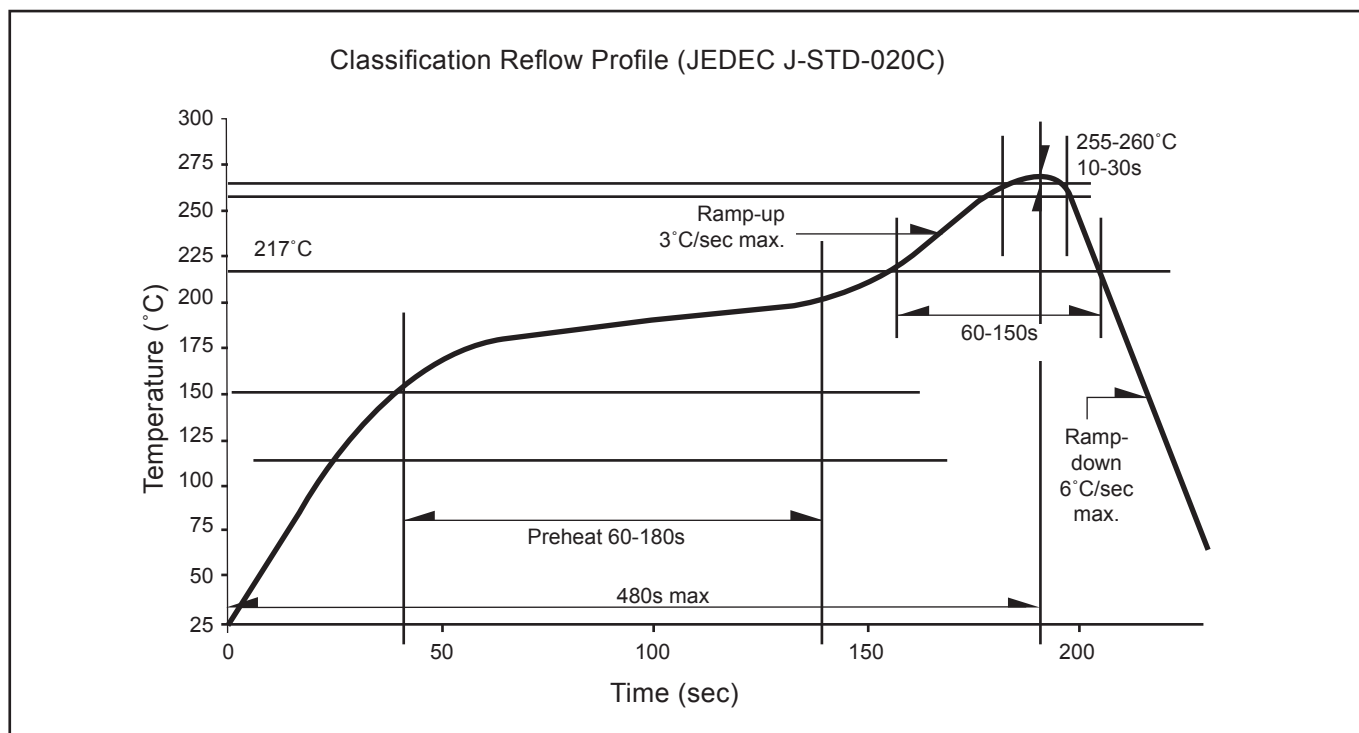
	Average 1pc Mini DomiLED	1 completed bag (3000pcs)
Weight (gram)	0.007	140 ± 10



For Mini DomiLED™

Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box	Quantity / Box (pcs)
Small	300 x 250 x 250	0.58	15 reels MAX	45,000 MAX
Large	416 x 516 x 476	1.74	96 reels MAX	288,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	23 Nov 2012
2, 4	Add new partno: DNW-CJG-QR2-1-I1 Add color bin structure	26 Apr 2013
2	Add Thermal Resistance	03 Jul 2013
3, 8	Add Characteristic, Add Graph: Chromaticity vs Forward Current Test	12 Aug 2013

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.

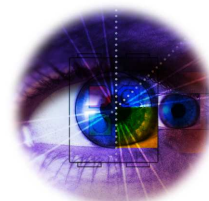
DOMINANT Opto Technologies products are not authorized for use as critical components in life support devices or systems without the express written approval from the Managing Director of DOMINANT Opto Technologies.

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>.

Please contact us for more information:

DOMINANT Opto Technologies Sdn. Bhd
Lot 6, Batu Berendam, FTZ Phase III, 75350 Melaka, Malaysia.
Tel: +606 283 3566 Fax: +606 283 0566
E-mail: sales@dominant-semi.com



DOMINANT™
Opto Technologies
Innovating Illumination