

### Mini DomiLED<sup>TM</sup>

With the intense colors that seem to glow with energy and its significant brightness, Mini DomiLED<sup>TM</sup> LED is a highly reliable design device. Its dynamic nature makes it perfect choice for lighting 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	180.00
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-FKPL-I1	120	45.00	71.50	112.50
DNW-CJG-QR2-FKPL-I1	120	71.50	112.50	180.00

**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 ± 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 µA
	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

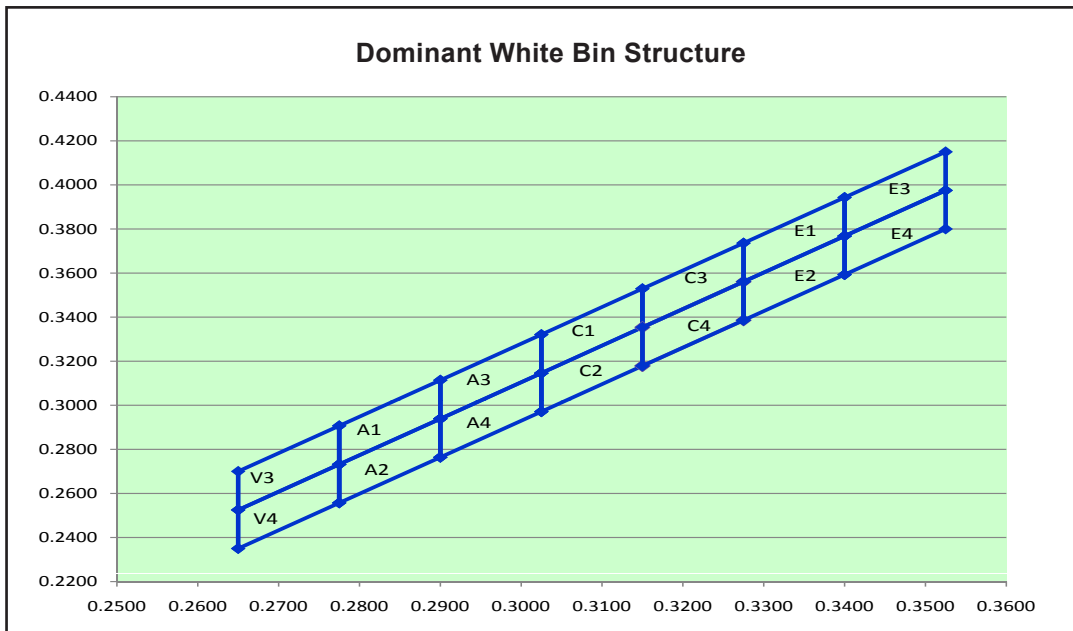
	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005)	200	mA
Reverse voltage	5	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	85	mW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



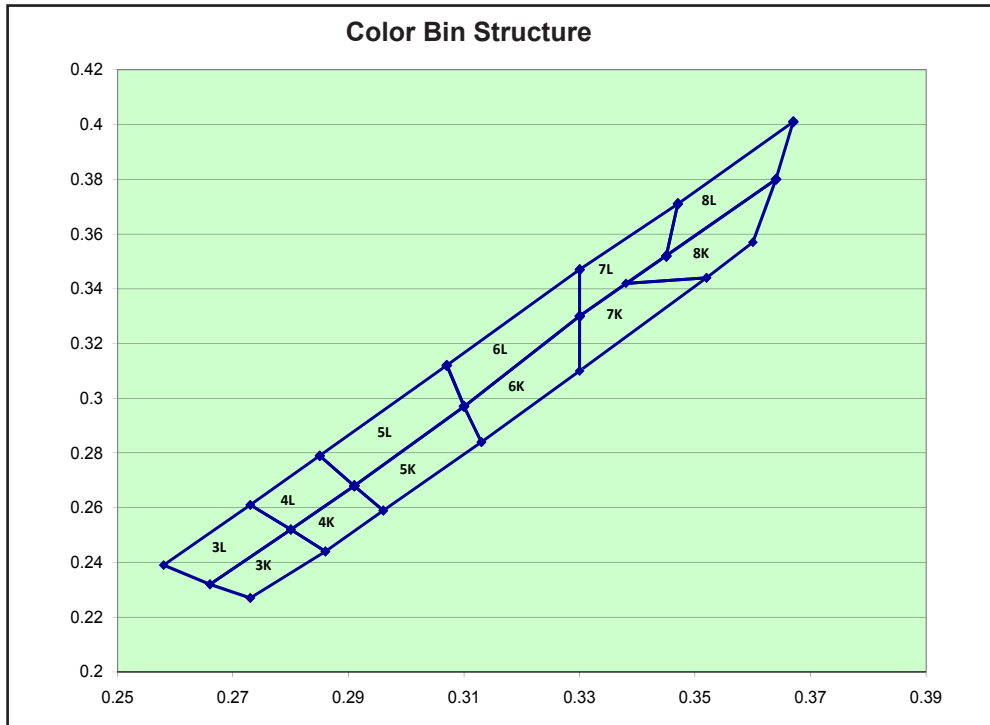
Chromaticity coordinate groups are measured with an accuracy of ± 0.01.

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



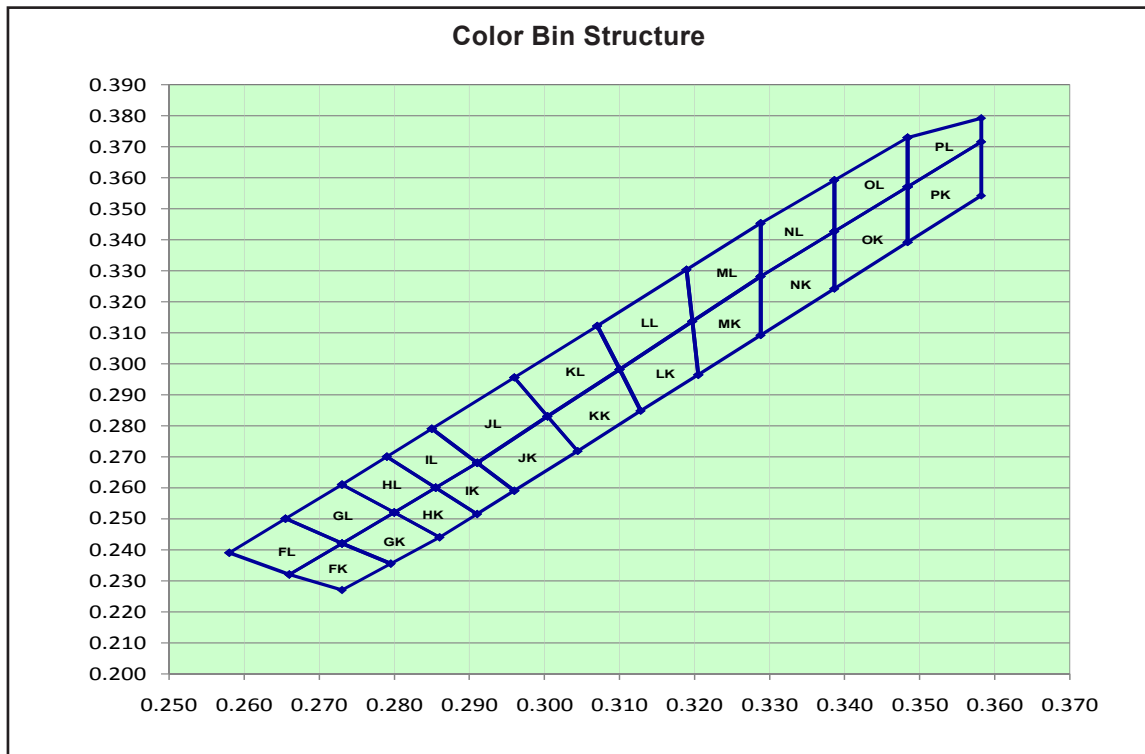
Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

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 (FKPL), Color Bin Structure**

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



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

Bin		1	2	3	4
FK	Cx	0.2660	0.2730	0.2793	0.2731
	Cy	0.2320	0.2270	0.2357	0.2422
FL	Cx	0.2580	0.2655	0.2731	0.2660
	Cy	0.2390	0.2500	0.2422	0.2320
GK	Cx	0.2731	0.2793	0.2856	0.2799
	Cy	0.2422	0.2357	0.2445	0.2520
GL	Cx	0.2655	0.2731	0.2799	0.2729
	Cy	0.2500	0.2422	0.2520	0.2611
HK	Cx	0.2799	0.2855	0.2908	0.2856
	Cy	0.2520	0.2600	0.2518	0.2445
HL	Cx	0.2729	0.2790	0.2855	0.2799
	Cy	0.2611	0.2701	0.2600	0.2520
IK	Cx	0.2855	0.2908	0.2960	0.2910
	Cy	0.2600	0.2518	0.2590	0.2680
IL	Cx	0.2790	0.2850	0.2910	0.2855
	Cy	0.2701	0.2790	0.2680	0.2600
JK	Cx	0.2910	0.2960	0.3044	0.3004
	Cy	0.2680	0.2590	0.2718	0.2830
JL	Cx	0.2850	0.2910	0.3004	0.2960
	Cy	0.2790	0.2680	0.2830	0.2956
KK	Cx	0.3004	0.3044	0.3128	0.3100
	Cy	0.2830	0.2718	0.2848	0.2982
KL	Cx	0.2960	0.3004	0.3100	0.3070
	Cy	0.2956	0.2830	0.2982	0.3122

<b>Bin</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
LK	Cx	0.3100	0.3128	0.3205	0.3197
	Cy	0.2982	0.2848	0.2964	0.3137
LL	Cx	0.3070	0.3100	0.3197	0.3189
	Cy	0.3122	0.2982	0.3137	0.3303
MK	Cx	0.3197	0.3205	0.3288	0.3288
	Cy	0.3137	0.2964	0.3092	0.3282
ML	Cx	0.3189	0.3197	0.3288	0.3288
	Cy	0.3303	0.3137	0.3282	0.3453
NK	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3282	0.3092	0.3242	0.3427
NL	Cx	0.3288	0.3288	0.3386	0.3386
	Cy	0.3453	0.3282	0.3427	0.3592
OK	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3427	0.3242	0.3392	0.3571
OL	Cx	0.3386	0.3386	0.3484	0.3484
	Cy	0.3592	0.3427	0.3571	0.3730
PK	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3571	0.3392	0.3542	0.3716
PL	Cx	0.3484	0.3484	0.3582	0.3582
	Cy	0.3730	0.3571	0.3716	0.3792

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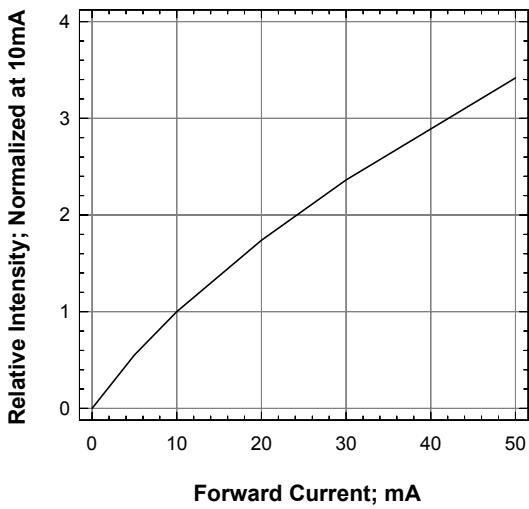
**Luminous Intensity Group at Tj=25°C**

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

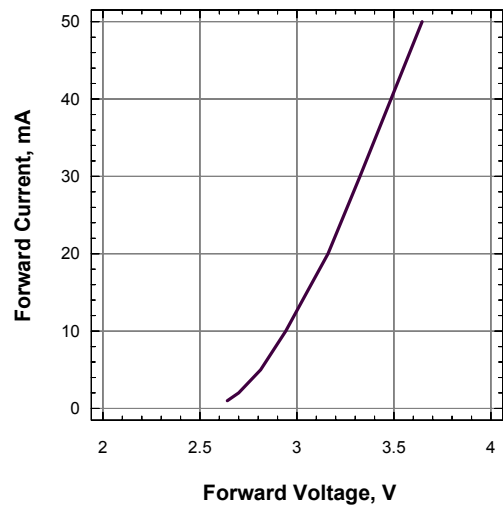
Luminous intensity is measured with an accuracy of ± 11%.



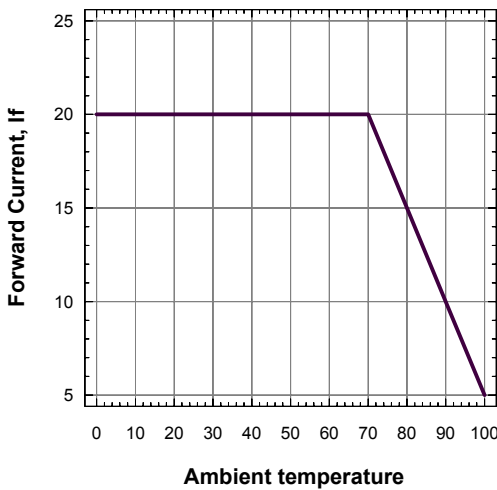
**Relative Intensity Vs Forward Current**



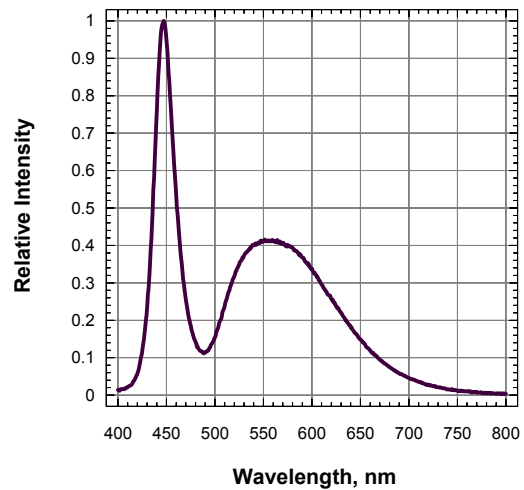
**Forward Current Vs Forward Voltage**



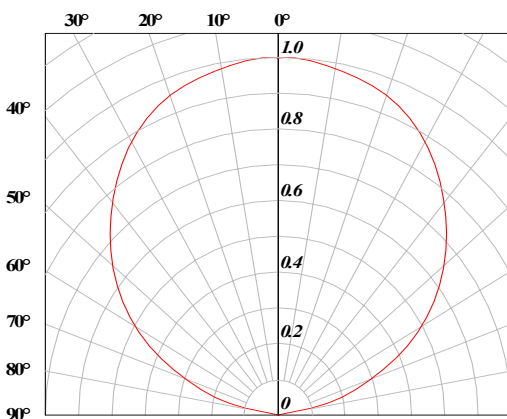
**Maximum Current Vs Ambient Temperature**



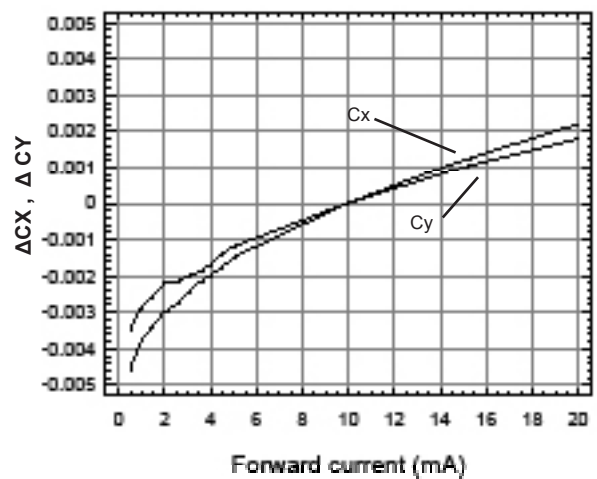
**Relative Intensity Vs. Wavelength**



**Radiation Pattern**

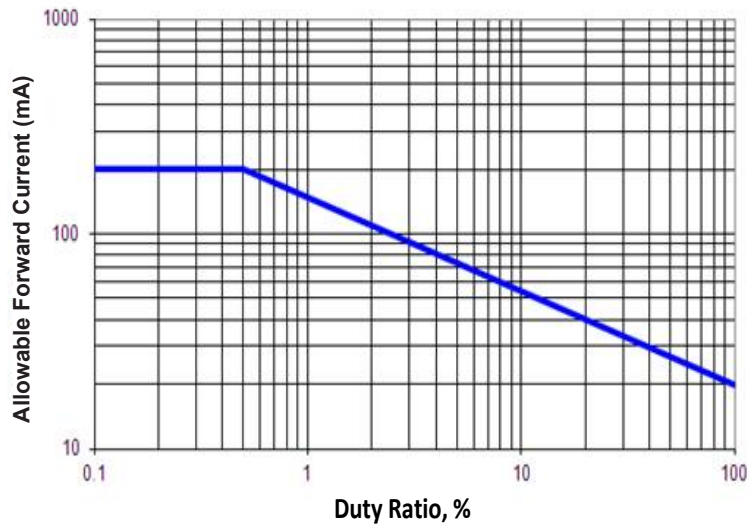


**Chromaticity vs Forward Current Test**

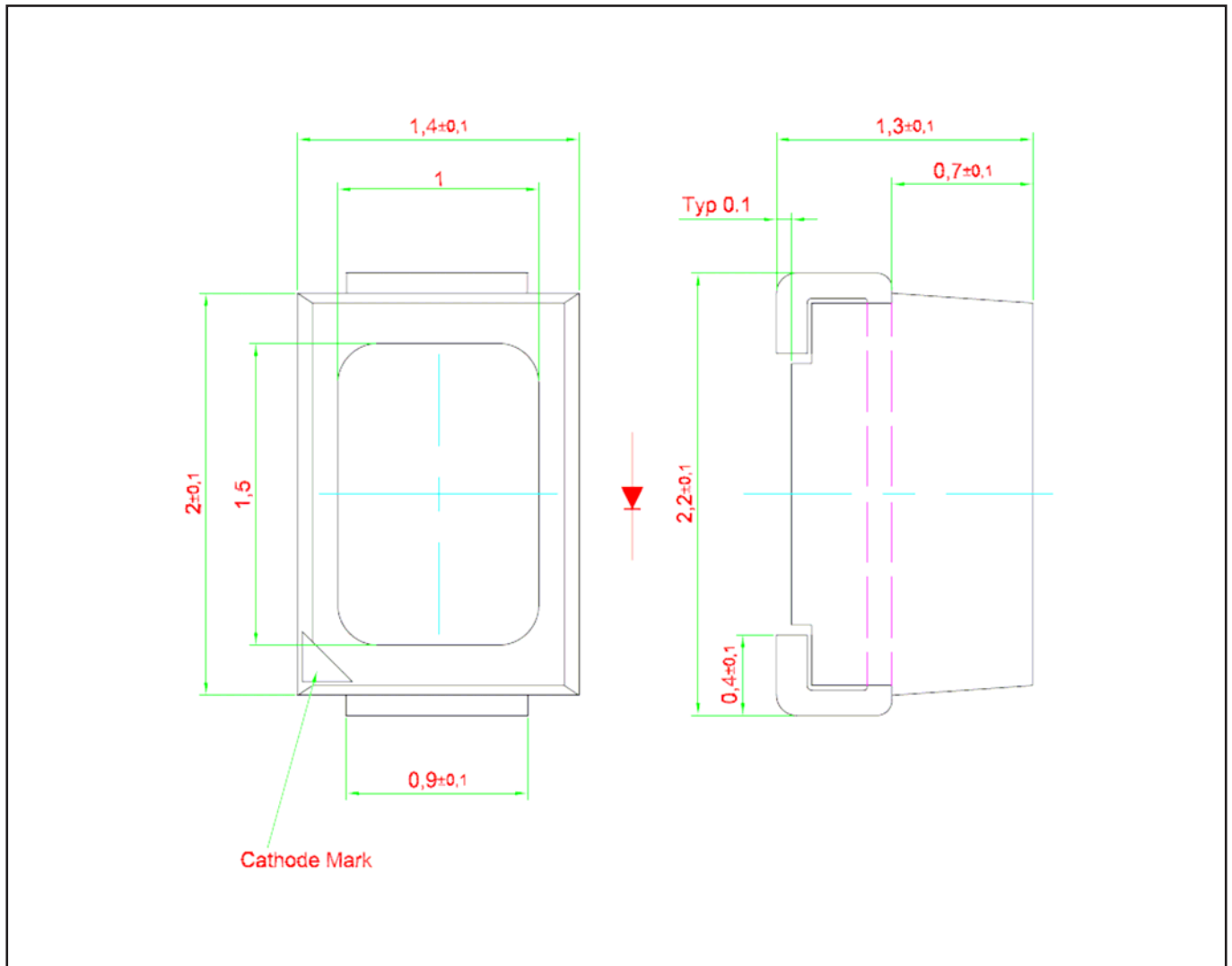


Allowable Forward Current Vs Duty Ratio

(Ta=25 Deg C. tp≤10uS)



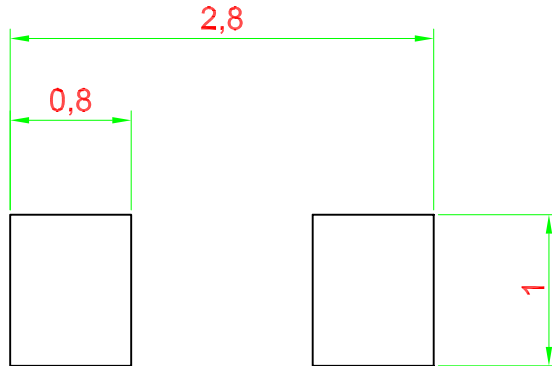
**Mini DomiLED™ • InGaN White: DNW-CJG-I1 Package Outlines**



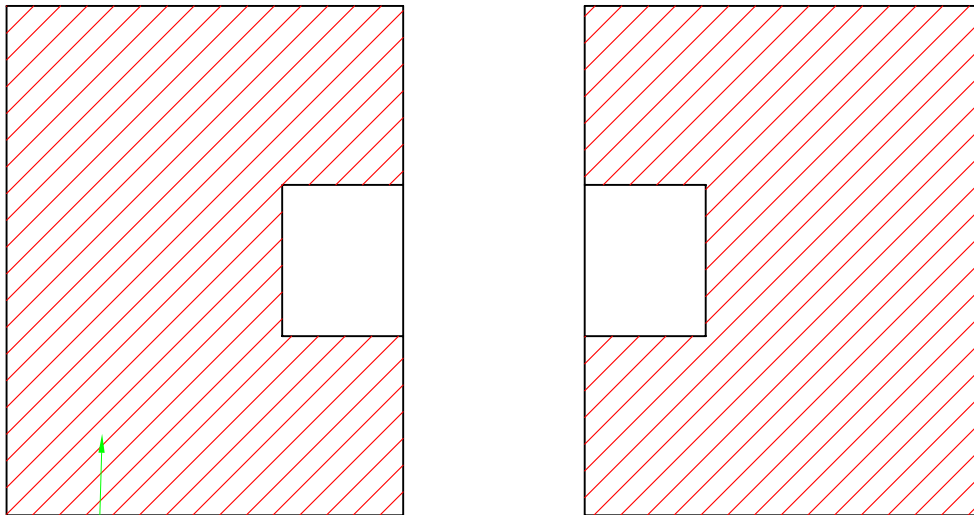
**Material**

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

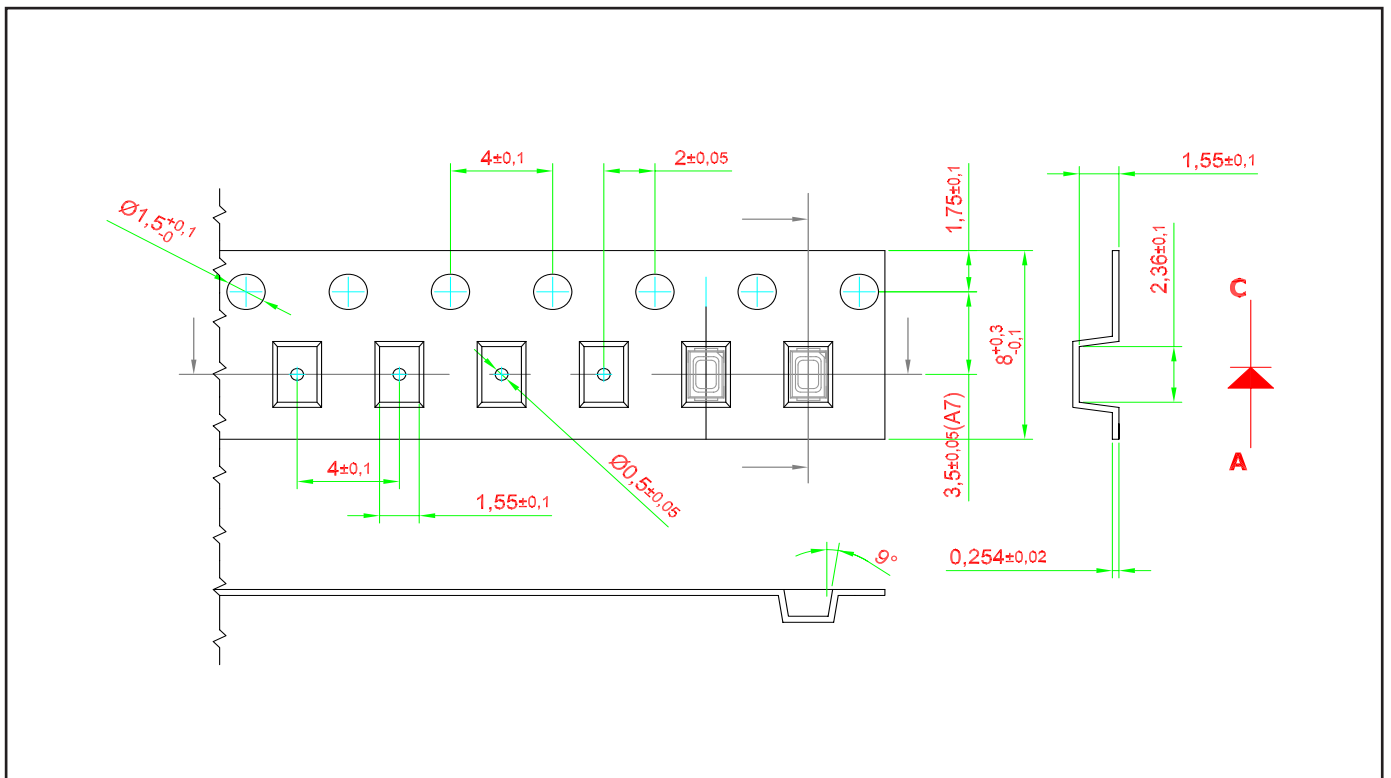


Additional Cu area for improved heat dissipation, > 16mm sq.

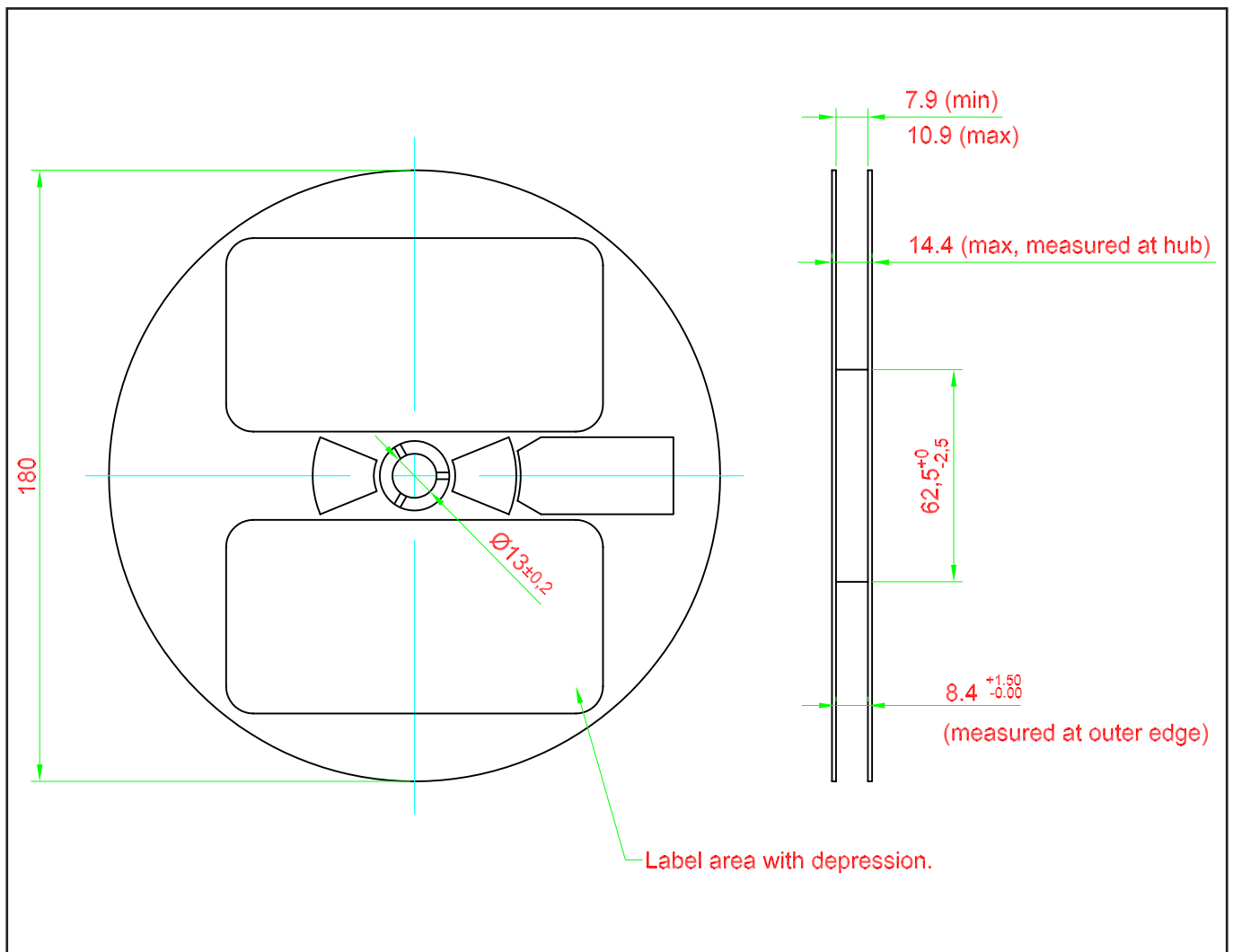
 Solder resist.

## Taping and orientation

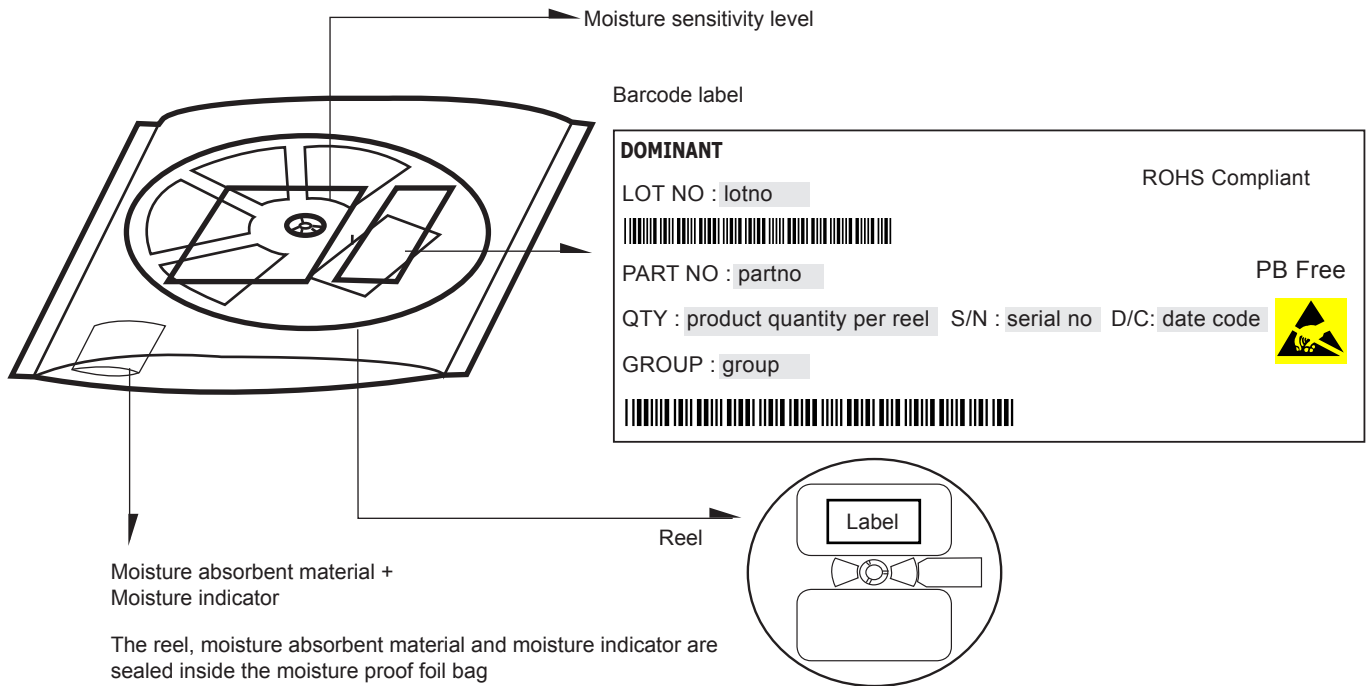
- Reels come in quantity of 3000 units.
- Reel diameter is 180 mm.



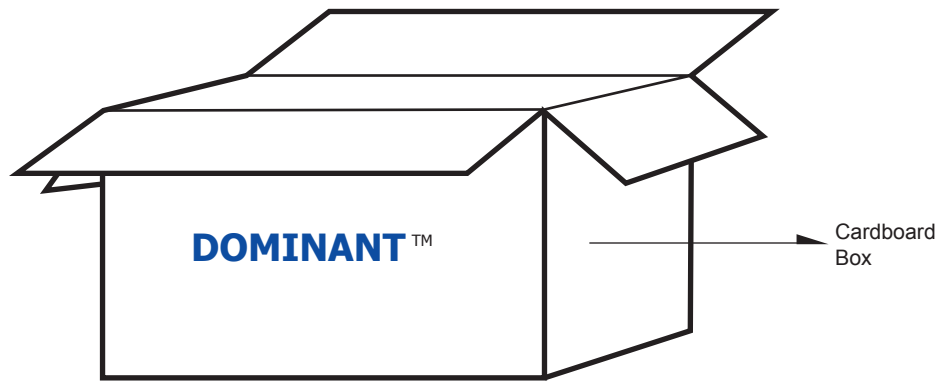
### Packaging Specification



**Packaging Specification**



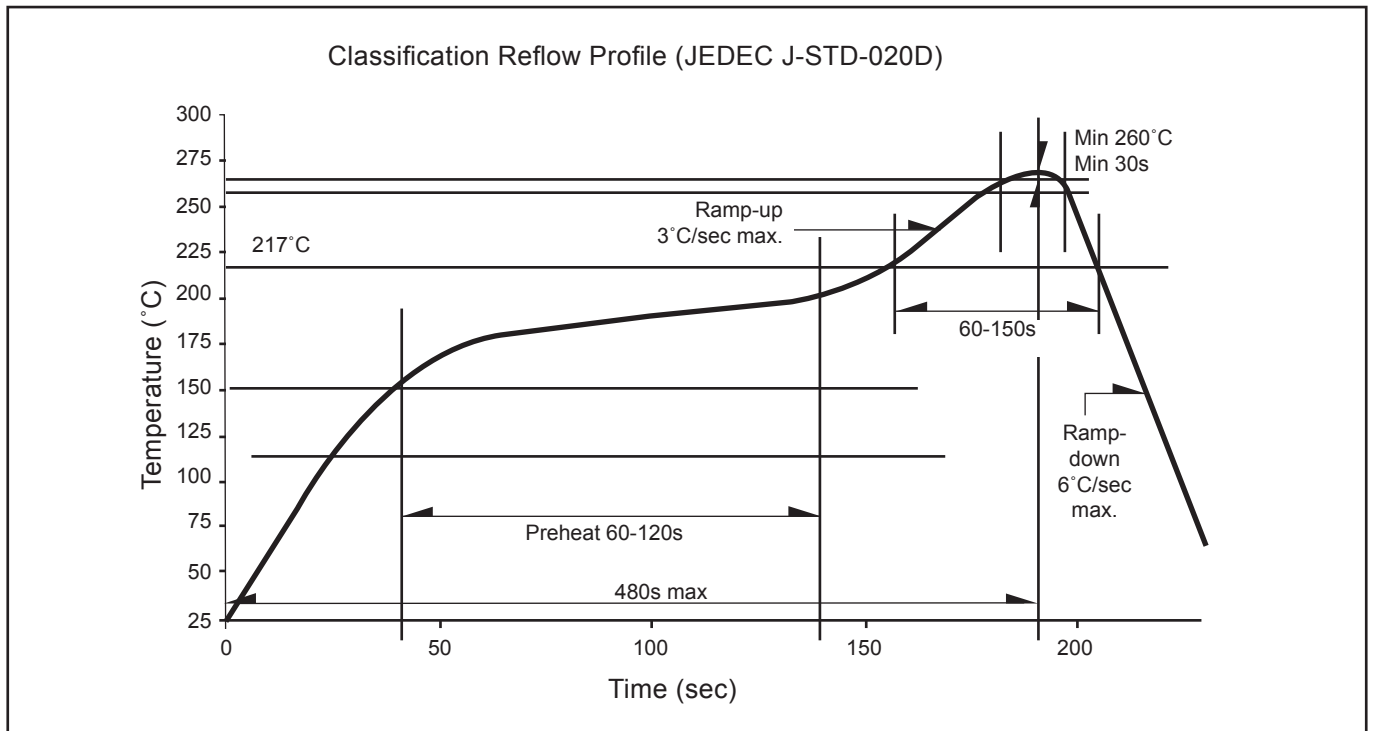
	Average 1pc Mini DomiLED	1 completed bag (3000pcs)
Weight (gram)	0.007	140 ± 10



**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**

<b>Page</b>	<b>Subjects</b>	<b>Date of Modification</b>
-	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
9	Add Graph: Allowable Forward Current Vs. Duty Ratio	03 Mar 2014
6, 7	Update Color Bin Structure from JKPL to FKPL	11 Feb 2015
2, 16	Add new partno: DNW-CJG-QR2-FKPL-I1 Update Recommended Pb-free Soldering Profile	03 Mar 2015

**NOTE**

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## 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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