

Power DomiLEDTM

With its significant power in terms brightness, viewing angle and variety of application possibilities, Power DomiLEDTM 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.
- > 120° viewing angle.
- > Small package outline (LxWxH) of 3.2 x 2.8 x 1.8mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.



Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL),
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).
- > Lighting: architecture lighting, general lighting, garden light, etc



Optical Characteristics (Tj=25°C)

Part Ordering Number	Color	Viewing Angle°	Total Flux IF=30mA, mlm (typ)	Luminous Intensity @ IF = 30mA IV (mcd)		
				Min.	Typ.	Max.
DWF-LJG-W2X-1	Warm White	120	7000	1400.0	2240.0	2850.0

NOTE

1. All part number above comes in a quantity of 2000 units per reel.
2. Luminous intensity is measured with an accuracy of $\pm 11\%$.
3. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
4. 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.

Electrical Characteristics at Tj=25°C

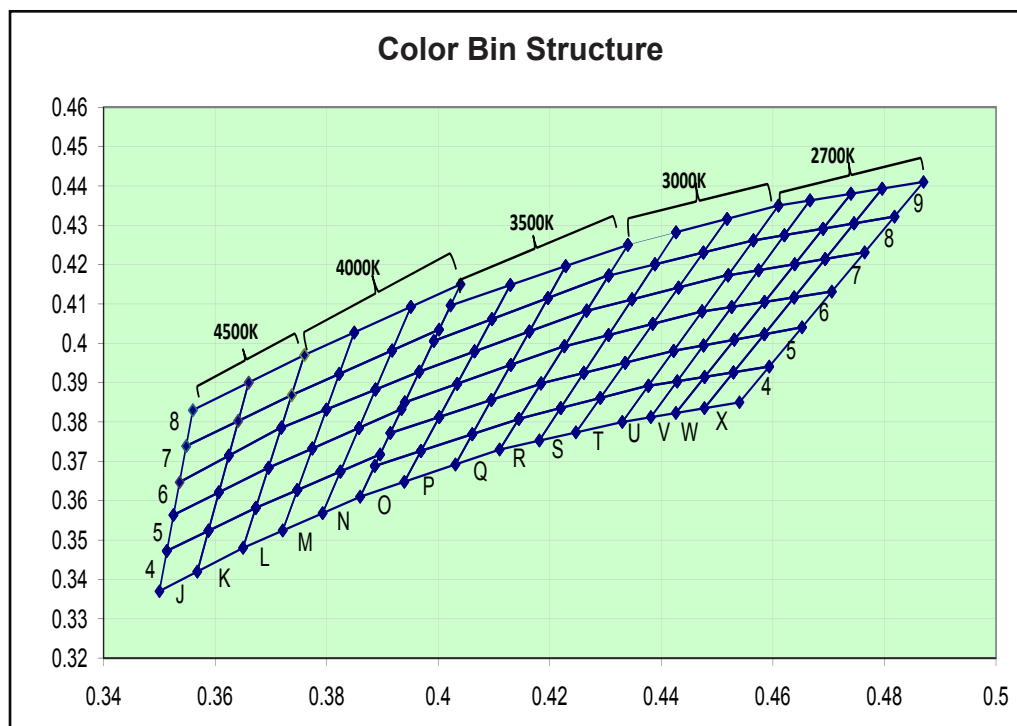
Part Number	Min. (V)	Vf @ If = 30mA		Vr @ Ir = 10uA Min. (V)
		Typ. (V)	Max. (V)	
DWF-LJG	3.0	3.4	3.8	5

Forward voltages, Vf is measured with an accuracy of $\pm 0.1V$.

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	50	mA
Peak pulse current; (tp $\leq$ 10 μ s, Duty cycle = 0.005)	300	mA
Reverse voltage; Ir (max) = 10 μ A	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)	200	mW
Thermal resistance		
- Junction / ambient, Rth JA	300	K/W
- Junction / solder point, Rth JS	130	K/W
(Mounting on FR4 PCB, pad size $\geq$ 16 mm ² per pad)		

Color Bin Structure



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

Bin		1	2	3	4
4U	Cx	0.4330	0.4370	0.4430	0.4380
	Cy	0.3800	0.3890	0.3910	0.3810
5U	Cx	0.4370	0.4420	0.4480	0.4430
	Cy	0.3890	0.3980	0.4000	0.3910
6U	Cx	0.4420	0.4470	0.4530	0.4480
	Cy	0.3980	0.4080	0.4090	0.4000
7U	Cx	0.4470	0.4510	0.4580	0.4530
	Cy	0.4080	0.4170	0.4180	0.4090
8U	Cx	0.4510	0.4560	0.4620	0.4580
	Cy	0.4170	0.4260	0.4270	0.4180
9U	Cx	0.4560	0.4610	0.4670	0.4620
	Cy	0.4260	0.4350	0.4370	0.4270
4V	Cx	0.4380	0.4430	0.4480	0.4430
	Cy	0.3810	0.3910	0.3920	0.3830
5V	Cx	0.4430	0.4480	0.4530	0.4480
	Cy	0.3910	0.4000	0.4010	0.3920
6V	Cx	0.4480	0.4530	0.4590	0.4530
	Cy	0.4000	0.4090	0.4100	0.4010
7V	Cx	0.4530	0.4580	0.4640	0.4590
	Cy	0.4090	0.4180	0.4200	0.4100
8V	Cx	0.4580	0.4620	0.4690	0.4640
	Cy	0.4180	0.4270	0.4290	0.4200
9V	Cx	0.4620	0.4670	0.4740	0.4690
	Cy	0.4270	0.4370	0.4380	0.4290

Bin		1	2	3	4
4W	Cx	0.4430	0.4480	0.4540	0.4480
	Cy	0.3830	0.3920	0.3930	0.3840
5W	Cx	0.4480	0.4530	0.4590	0.4540
	Cy	0.3920	0.4010	0.4020	0.3930
6W	Cx	0.4530	0.4590	0.4640	0.4590
	Cy	0.4010	0.4100	0.4120	0.4020
7W	Cx	0.4590	0.4640	0.4700	0.4640
	Cy	0.4100	0.4200	0.4210	0.4120
8W	Cx	0.4640	0.4690	0.4750	0.4700
	Cy	0.4200	0.4290	0.4300	0.4210
9W	Cx	0.4690	0.4740	0.4800	0.4750
	Cy	0.4290	0.4380	0.4400	0.4300
4X	Cx	0.4480	0.4540	0.4590	0.4540
	Cy	0.3840	0.3930	0.3940	0.3850
5X	Cx	0.4540	0.4590	0.4650	0.4590
	Cy	0.3930	0.4020	0.4040	0.3940
6X	Cx	0.4590	0.4640	0.4700	0.4650
	Cy	0.4020	0.4120	0.4130	0.4040
7X	Cx	0.4640	0.4700	0.4760	0.4700
	Cy	0.4120	0.4210	0.4230	0.4130
8X	Cx	0.4700	0.4750	0.4810	0.4760
	Cy	0.4210	0.4300	0.4320	0.4230
9X	Cx	0.4750	0.4800	0.4870	0.4810
	Cy	0.4300	0.4400	0.4410	0.4320
4R	Cx	0.4110	0.4150	0.4220	0.4180
	Cy	0.3730	0.3810	0.3840	0.3750
5R	Cx	0.4150	0.4190	0.4260	0.4220
	Cy	0.3810	0.3900	0.3930	0.3840
6R	Cx	0.4190	0.4220	0.4300	0.4260
	Cy	0.3900	0.3990	0.4020	0.3930
7R	Cx	0.4220	0.4260	0.4350	0.4300
	Cy	0.3990	0.4080	0.4110	0.4020
8R	Cx	0.4260	0.4300	0.4390	0.4350
	Cy	0.4080	0.4170	0.4200	0.4110
9R	Cx	0.4300	0.4340	0.4430	0.4390
	Cy	0.4170	0.4250	0.4290	0.4200
4S	Cx	0.4180	0.4220	0.4300	0.4250
	Cy	0.3750	0.3840	0.3870	0.3780
5S	Cx	0.4220	0.4260	0.4340	0.4300
	Cy	0.3840	0.3930	0.3960	0.3870
6S	Cx	0.4260	0.4300	0.4390	0.4340
	Cy	0.3930	0.4020	0.4050	0.3960
7S	Cx	0.4300	0.4350	0.4430	0.4390
	Cy	0.4020	0.4110	0.4140	0.4050
8S	Cx	0.4350	0.4390	0.4470	0.4430
	Cy	0.4110	0.4200	0.4230	0.4140
9S	Cx	0.4390	0.4430	0.4520	0.4470
	Cy	0.4200	0.4290	0.4320	0.4230
4T	Cx	0.4250	0.4300	0.4370	0.4330
	Cy	0.3780	0.3870	0.3890	0.3800

Bin		1	2	3	4
5T	Cx	0.4300	0.4340	0.4420	0.4370
	Cy	0.3870	0.3960	0.3980	0.3890
6T	Cx	0.4340	0.4390	0.4470	0.4420
	Cy	0.3960	0.4050	0.4080	0.3980
7T	Cx	0.4390	0.4430	0.4510	0.4470
	Cy	0.4050	0.4140	0.4170	0.4080
8T	Cx	0.4430	0.4470	0.4560	0.4510
	Cy	0.4140	0.4230	0.4260	0.4170
9T	Cx	0.4470	0.4520	0.4610	0.4560
	Cy	0.4230	0.4320	0.4350	0.4260
4O	Cx	0.3860	0.3890	0.3980	0.3940
	Cy	0.3610	0.3690	0.3730	0.3650
5O	Cx	0.3890	0.3910	0.4010	0.3980
	Cy	0.3690	0.3770	0.3810	0.3730
6O	Cx	0.3910	0.3940	0.4040	0.4010
	Cy	0.3770	0.3850	0.3900	0.3810
7O	Cx	0.3940	0.3970	0.4070	0.4040
	Cy	0.3850	0.3930	0.3980	0.3900
8O	Cx	0.3970	0.4000	0.4100	0.4070
	Cy	0.3930	0.4010	0.4060	0.3980
9O	Cx	0.4000	0.4030	0.4130	0.4100
	Cy	0.4010	0.4100	0.4150	0.4060
4P	Cx	0.3940	0.3980	0.4060	0.4030
	Cy	0.3650	0.3730	0.3770	0.3690
5P	Cx	0.3980	0.4010	0.4100	0.4060
	Cy	0.3730	0.3810	0.3860	0.3770
6P	Cx	0.4010	0.4040	0.4130	0.4100
	Cy	0.3810	0.3900	0.3940	0.3860
7P	Cx	0.4040	0.4070	0.4160	0.4130
	Cy	0.3900	0.3980	0.4030	0.3940
8P	Cx	0.4070	0.4100	0.4200	0.4160
	Cy	0.3980	0.4060	0.4120	0.4030
9P	Cx	0.4100	0.4130	0.4230	0.4200
	Cy	0.4060	0.4150	0.4200	0.4120
4Q	Cx	0.4030	0.4060	0.4150	0.4110
	Cy	0.3690	0.3770	0.3810	0.3730
5Q	Cx	0.4060	0.4100	0.4190	0.4150
	Cy	0.3770	0.3860	0.3900	0.3810
6Q	Cx	0.4100	0.4130	0.4220	0.4190
	Cy	0.3860	0.3940	0.3990	0.3900
7Q	Cx	0.4130	0.4160	0.4260	0.4220
	Cy	0.3940	0.4030	0.4080	0.3990
8Q	Cx	0.4160	0.4200	0.4300	0.4260
	Cy	0.4030	0.4120	0.4170	0.4080
9Q	Cx	0.4200	0.4230	0.4340	0.4300
	Cy	0.4120	0.4200	0.4250	0.4170
4L	Cx	0.3650	0.3670	0.3750	0.3720
	Cy	0.3480	0.3580	0.3620	0.3520
5L	Cx	0.3670	0.3690	0.3770	0.3750
	Cy	0.3580	0.3680	0.3730	0.3620

Bin		1	2	3	4
6L	Cx	0.3690	0.3710	0.3800	0.3770
	Cy	0.3680	0.3780	0.3830	0.3730
7L	Cx	0.3710	0.3740	0.3830	0.3800
	Cy	0.3780	0.3870	0.3930	0.3830
8L	Cx	0.3740	0.3760	0.3850	0.3830
	Cy	0.3870	0.3970	0.4030	0.3930
4M	Cx	0.3720	0.3750	0.3820	0.3790
	Cy	0.3520	0.3620	0.3670	0.3560
5M	Cx	0.3750	0.3770	0.3850	0.3820
	Cy	0.3620	0.3730	0.3780	0.3670
6M	Cx	0.3770	0.3800	0.3880	0.3850
	Cy	0.3730	0.3830	0.3880	0.3780
7M	Cx	0.3800	0.3830	0.3920	0.3880
	Cy	0.3830	0.3930	0.3990	0.3880
8M	Cx	0.3830	0.3850	0.3950	0.3920
	Cy	0.3930	0.4030	0.4090	0.3990
4N	Cx	0.3790	0.3820	0.3900	0.3860
	Cy	0.3560	0.3670	0.3720	0.3610
5N	Cx	0.3820	0.3850	0.3930	0.3900
	Cy	0.3670	0.3780	0.3830	0.3720
6N	Cx	0.3850	0.3880	0.3970	0.3930
	Cy	0.3780	0.3880	0.3930	0.3830
7N	Cx	0.3880	0.3920	0.4010	0.3970
	Cy	0.3880	0.3990	0.4040	0.3930
8N	Cx	0.3920	0.3950	0.4040	0.4010
	Cy	0.3990	0.4090	0.4150	0.4040
4J	Cx	0.3500	0.3510	0.3590	0.3570
	Cy	0.3370	0.3470	0.3520	0.3430
5J	Cx	0.3510	0.3520	0.3610	0.3590
	Cy	0.3470	0.3560	0.3620	0.3520
6J	Cx	0.3520	0.3540	0.3630	0.3610
	Cy	0.3560	0.3650	0.3710	0.3620
7J	Cx	0.3540	0.3550	0.3640	0.3630
	Cy	0.3650	0.3740	0.3810	0.3710
8J	Cx	0.3550	0.3560	0.3660	0.3640
	Cy	0.3740	0.3830	0.3900	0.3810
4K	Cx	0.3570	0.3590	0.3670	0.3650
	Cy	0.3430	0.3520	0.3580	0.3480
5K	Cx	0.3590	0.3610	0.3690	0.3670
	Cy	0.3520	0.3620	0.3680	0.3580
6K	Cx	0.3610	0.3630	0.3710	0.3690
	Cy	0.3620	0.3710	0.3780	0.3680
7K	Cx	0.3630	0.3640	0.3740	0.3710
	Cy	0.3710	0.3810	0.3870	0.3780
8K	Cx	0.3640	0.3660	0.3760	0.3740
	Cy	0.3810	0.3900	0.3970	0.3870

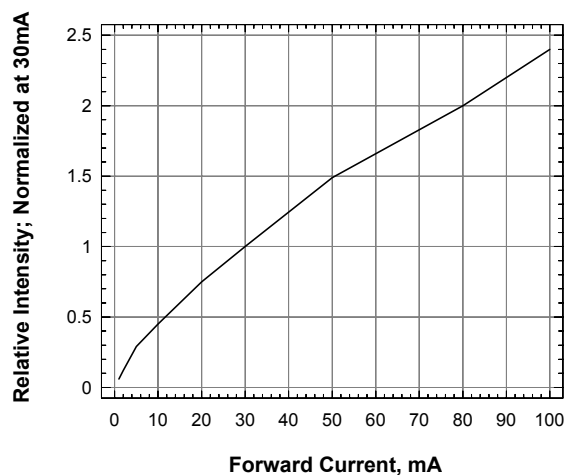
InGaN wavelength is very sensitive to drive current. Operating at lower current is not recommended and may yield unpredictable performance current pulsing should be used for dimming purposed.

Luminous Intensity Group at Tj=25°C

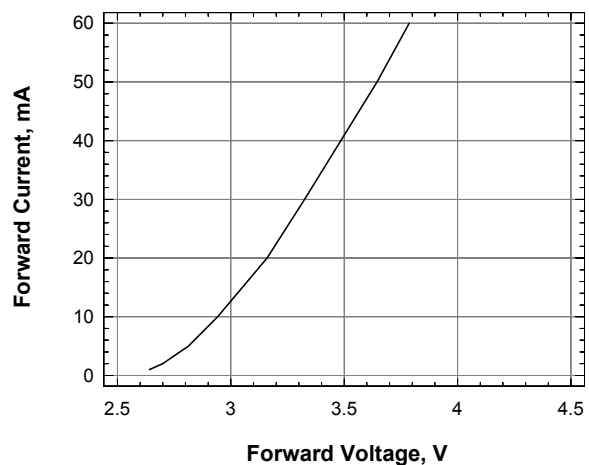
Brightness Group	Luminous Intensity IV (mcd)
W2	1400.0...1800.0
X1	1800.0...2240.0
X2	2240.0...2850.0

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

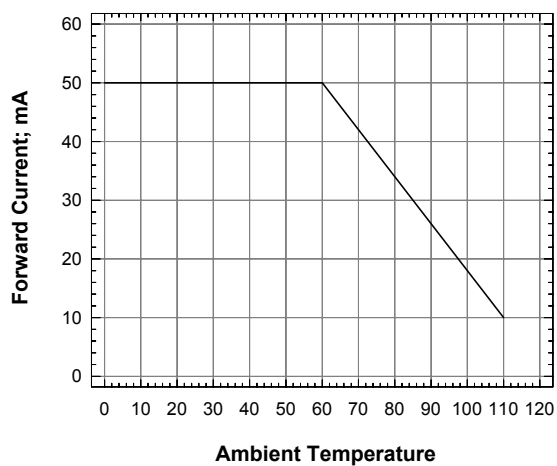
Relative Intensity Vs Forward Current



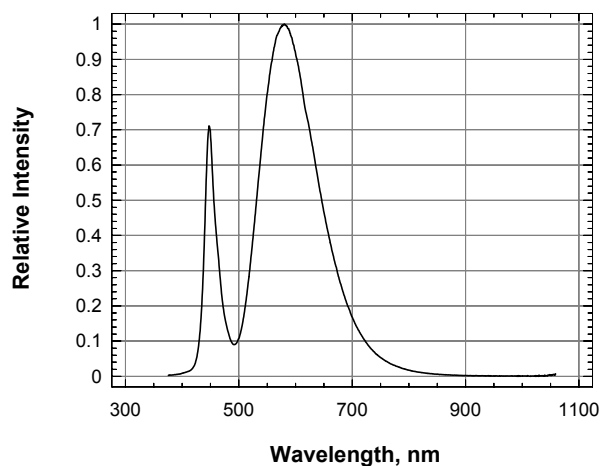
Forward Current Vs Forward Voltage



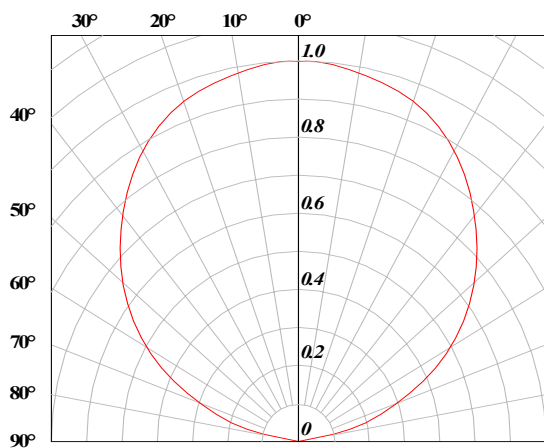
Forward Current Vs Ambient Temperature



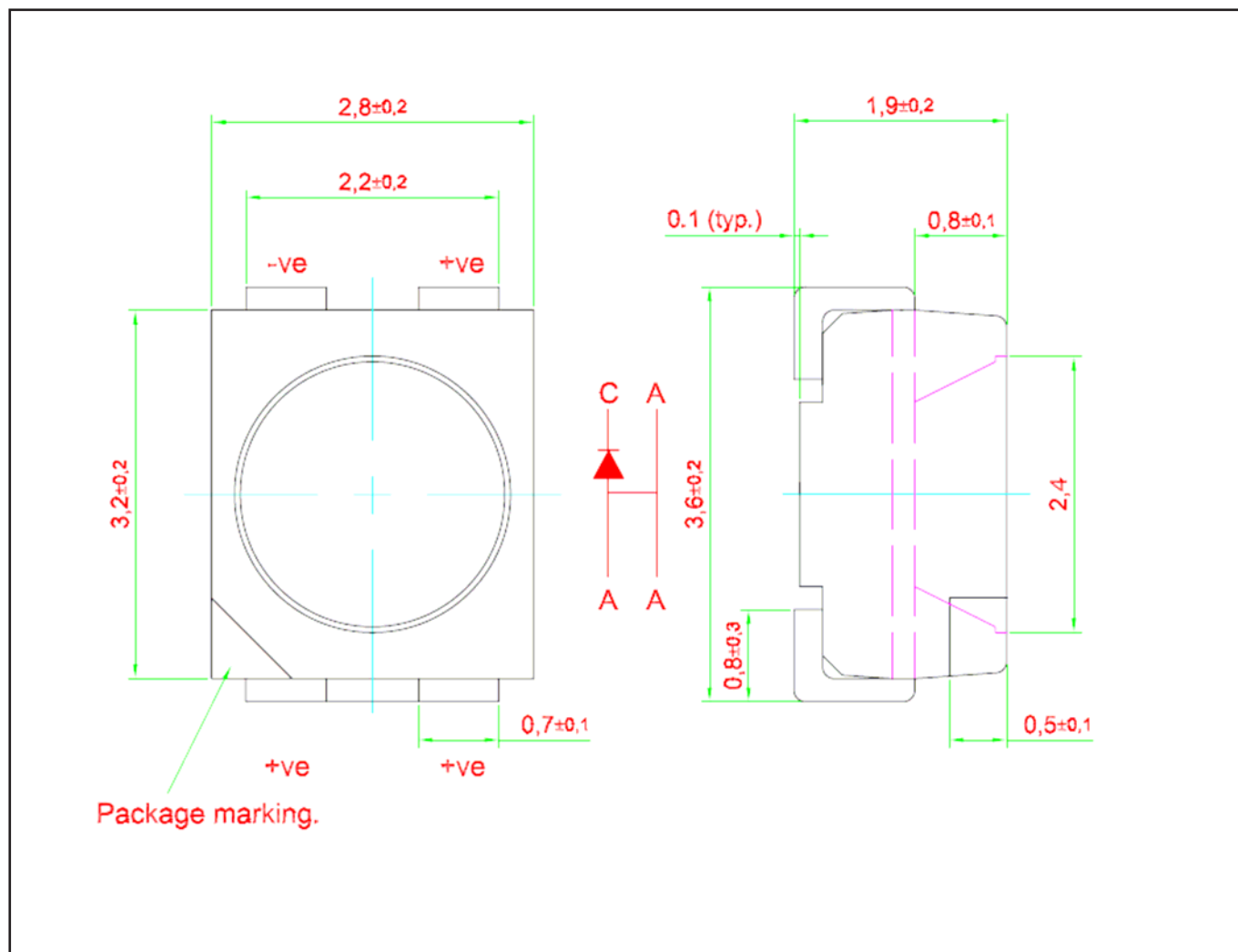
Relative Intensity Vs Wavelength



Radiation Pattern



Power DomiLED™ • InGaN Warm White : DWF-LJG 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

Technical drawing of a PCB layout for a 4-pin component. The drawing shows a top view of the component footprint with dimensions in mm.

The footprint is defined by the following dimensions:

- Overall width: 7 mm
- Overall height: 11.5 mm
- Pad width: 3.3 mm
- Pad height: 5.5 mm
- Pad spacing (horizontal): 1.1 mm
- Pad spacing (vertical): 1.5 mm
- Distance from top edge to top of pads: 4.5 mm
- Distance from left edge to left of pads: 2.6 mm

The pads are filled with a red hatched pattern, indicating they are covered by a solder mask.

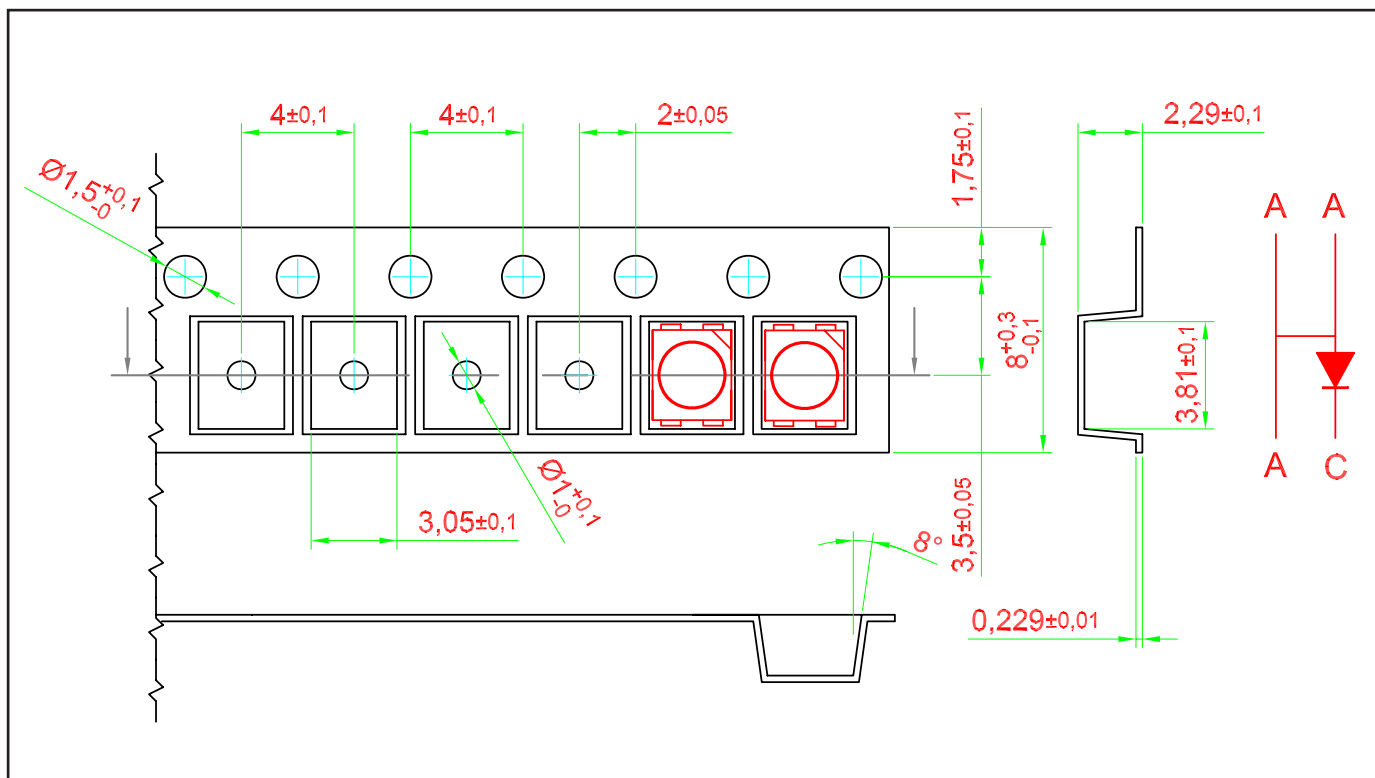
Legend:

- Solder mask.

Additional Cu area for improved heat dissipation.
Cu area >16 mm sq per pad .
Electrically isolated with solder mask.

Taping and orientation

- Reels come in quantity of 2000 units.
- Reel diameter is 180 mm.

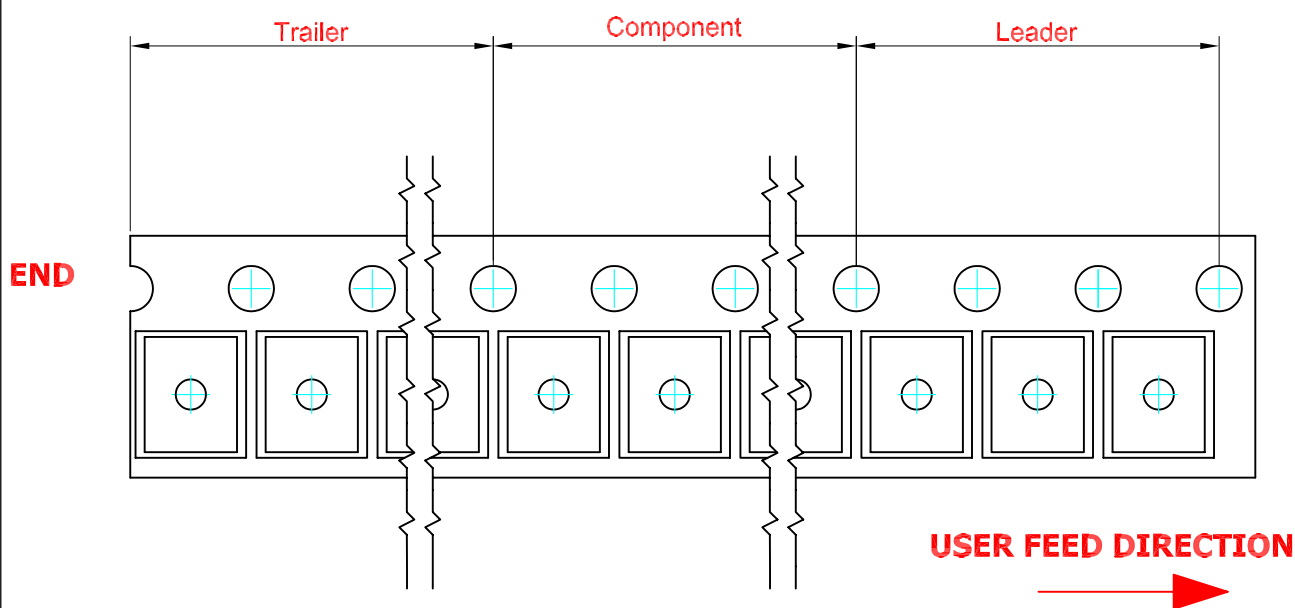


200 mm min. for $\varnothing 180$ reel.

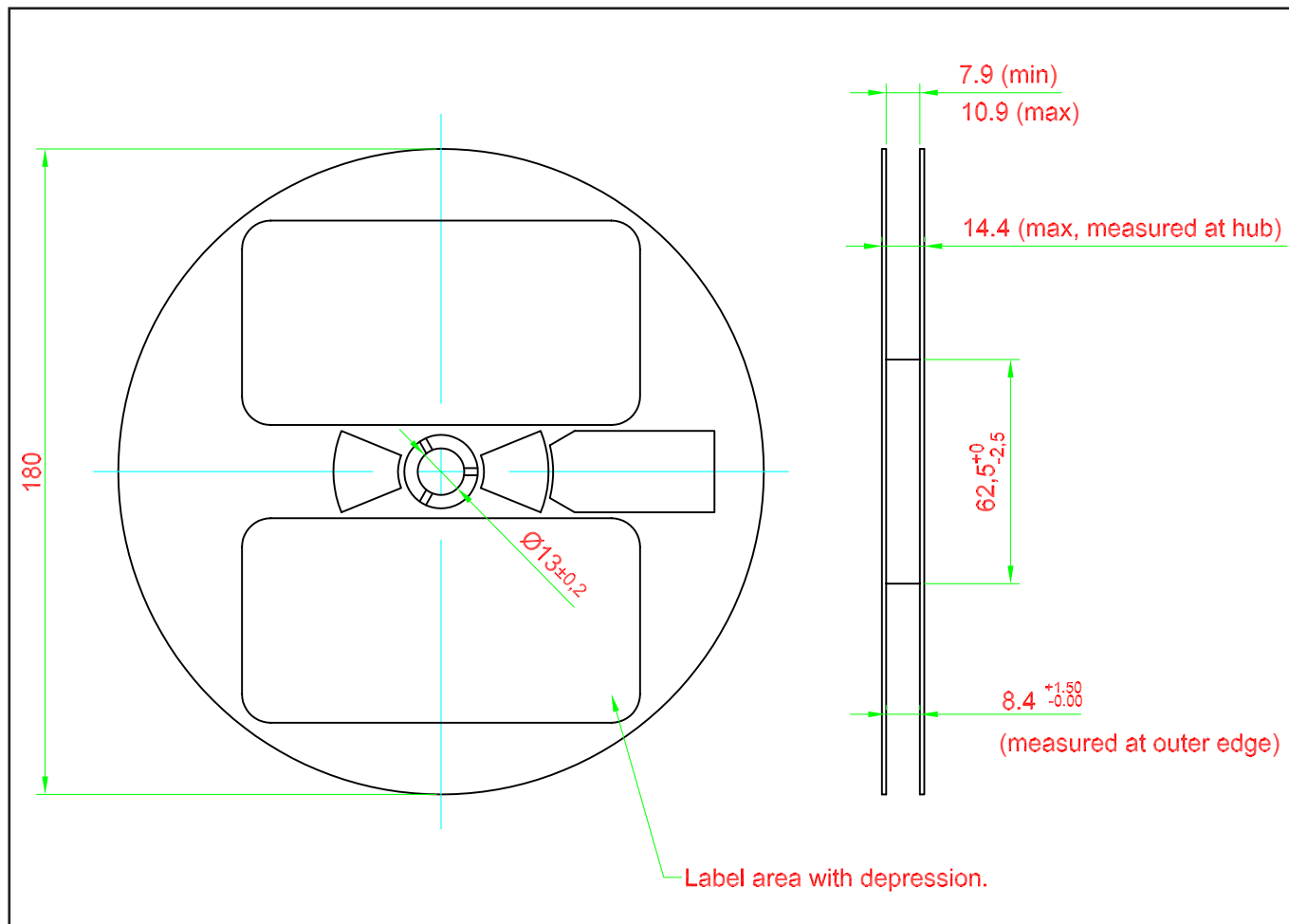
480 mm min. for $\varnothing 180$ reel.

200 mm min. for $\varnothing 330$ reel.

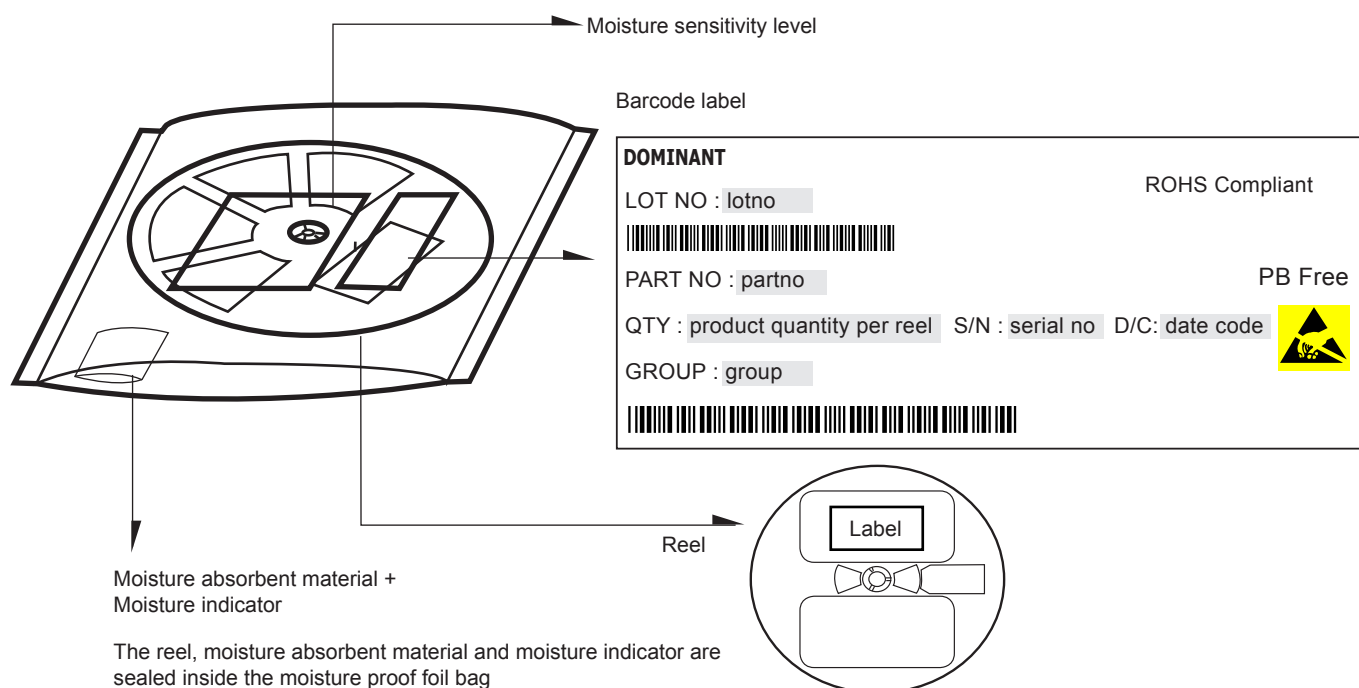
960 mm min. for $\varnothing 330$ reel.



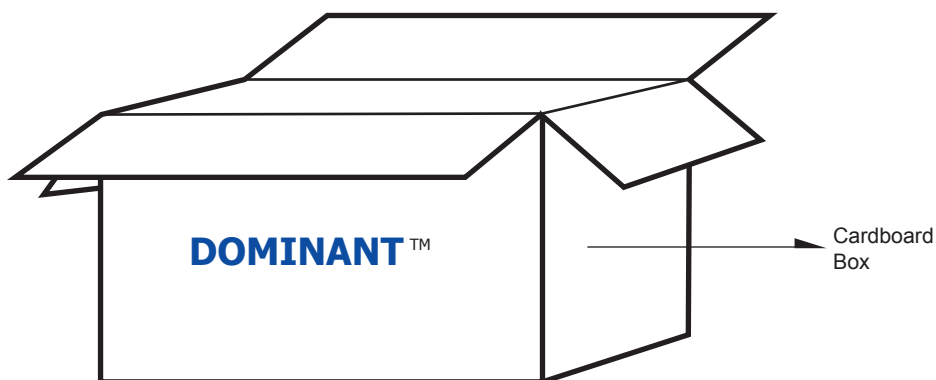
Packaging Specification



Packaging Specification



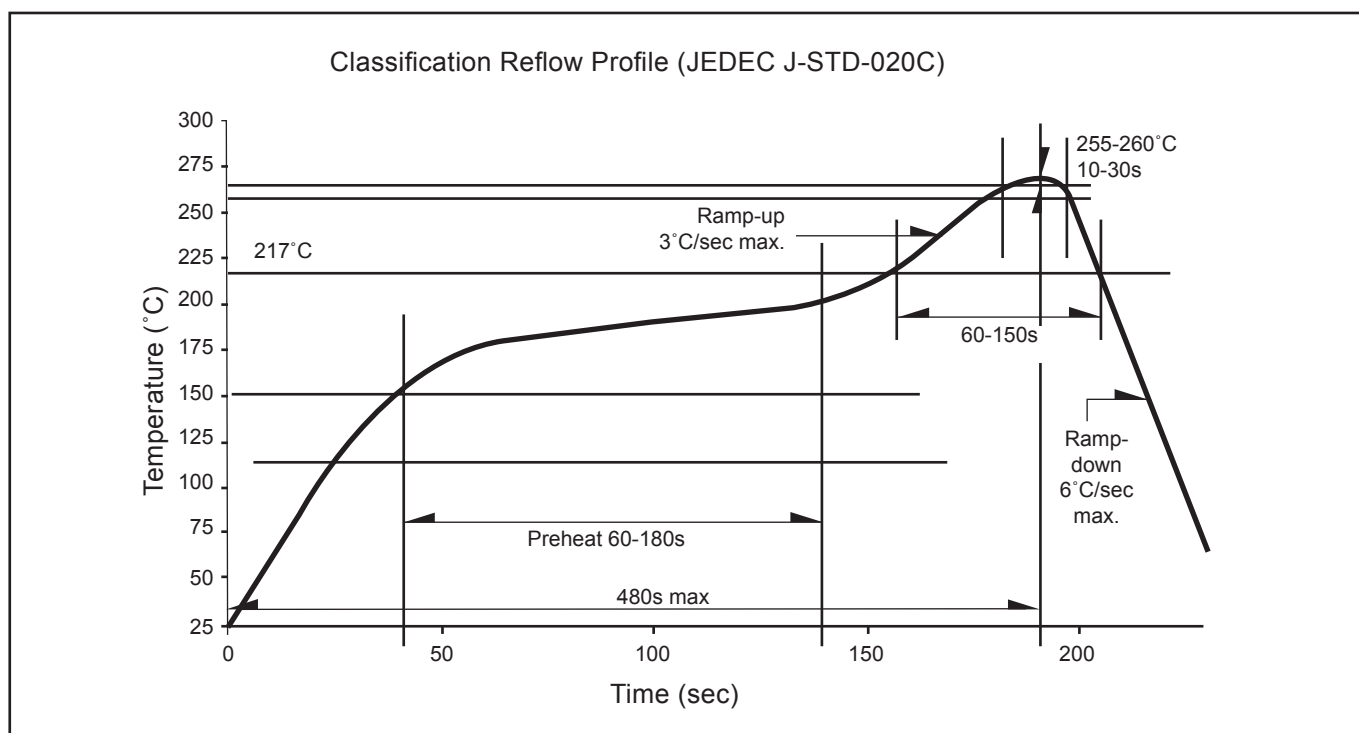
	Average 1pc Power DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



For Power 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	30,000 MAX
Large	416 x 516 x 476	1.74	96 reels MAX	192,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Initial Release	21 Jun 2012
2	Update Thermal Resistance	13 Mar 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>.

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