DOMINANT™
Opto Technologies
Innovating Illumination

DATA SHEET

Multi DomiLED™

D6RTB-DJD

Multi DomiLED™

Synonymous with function and performance, the Multi 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 tri-color surface mount LED.
- > Each color can be individually controlled
- > 120° viewing angle.
- > Small package outline (LxWxH) of 3.2 x 3.0 x 1.7mm.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.
- > Environmental friendly; RoHS compliance.

Applications:

- > Signs: full color video
- > Consumer & Communication: backlighting of LCDs
- > General Lighting: architectural lighting, decorative lighting

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Optical Characteristics at Tj=25˚C

Part Ordering Number	Color, λ_{dom} (nm)			Luminous Intensity @ If = 20mA IV (mcd)								
				Chip #1			Chip #2			Chip #3		
	Chip #1	Chip #2	Chip #3	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
D6RTB-DJD-TU+WX+TU-1	Red 625nm	True Green 525nm	Blue 460nm	320.0	450.0	637.0	1400.0	1800.0	2500.0	254.0	355.0	450.0
● D6RTB-DJD-TU+UV+RS-1	Red 625nm	True Green 525nm	Blue 460nm	320.0	450.0	637.0	715.0	1012.0	1400.0	126.0	180.0	254.0

● Not for new design

NOTE:
1. Reel comes in a quantity of 1000 units per reel.
2. Luminous intensity is measured with an accuracy of ± 11%.
3. All electrical and optical data are measured at room temperature; Ta = 25˚**C.**

Electrical Characteristics at Tj=25˚C

	Vf @ If = 20mA		
	Min. (V)	Typ. (V)	Max. (V)
Red	2.00	2.10	2.60
True Green	2.80	3.10	3.50
Blue	2.80	3.10	3.50

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	Red; AlInGaP=30; True Green, Blue; InGaN=25	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.005)	Red ; AlInGaP=500; True Green, Blue; InGaN=200	mA
Reverse voltage	Red; AlInGaP=12; True Green, Blue; InGaN= Not Designed	V
ESD threshold (HBM)	2000	V
LED junction temperature	125	˚C
Operating temperature	-40 … +100	˚C
Storage temperature	-40 … +100	˚C
Thermal resistance junction/ambient (3 chips on)		
Red, $R_{th\ JA}$	500	K/W
Blue & True Green, $R_{th\ JA}$	600	K/W

Wavelength Grouping

Color	Group	Wavelength distribution (nm)
Red	Full	620 - 630
True Green	Full	521 - 536
	A	521 - 526
	B	526 - 531
	C	531 - 536
Blue	Full	460 - 470
	A	460 - 465
	B	465 - 470

Dominant wavelength is measured with an accuracy of ±1nm.

Luminous Intensity Group at Tj=25˚C

Only one IV group is allowed for each chip within reel.

Brightness Group	Luminous Intensity IV (mcd)		
	Chip #1	Chip #2	Chip #3
T3U3R3	320.0 ... 450.0	715.0 ... 1012.0	126.0 ... 180.0
T3U3S3	320.0 ... 450.0	715.0 ... 1012.0	180.0 ... 254.0
T3V3R3	320.0 ... 450.0	1012.0 ... 1400.0	126.0 ... 180.0
T3V3S3	320.0 ... 450.0	1012.0 ... 1400.0	180.0 ... 254.0
U3U3R3	450.0 ... 637.0	715.0 ... 1012.0	126.0 ... 180.0
U3U3S3	450.0 ... 637.0	715.0 ... 1012.0	180.0 ... 254.0
U3V3R3	450.0 ... 637.0	1012.0 ... 1400.0	126.0 ... 180.0
U3V3S3	450.0 ... 637.0	1012.0 ... 1400.0	180.0 ... 254.0
T3W3T3	320.0 ... 450.0	1400.0 ... 1800.0	254.0 ... 355.0
T3W3U3	320.0 ... 450.0	1400.0 ... 1800.0	355.0 ... 450.0
T3X3T3	320.0 ... 450.0	1800.0 ... 2500.0	254.0 ... 355.0
T3X3U3	320.0 ... 450.0	1800.0 ... 2500.0	355.0 ... 450.0
U3W3T3	450.0 ... 637.0	1400.0 ... 1800.0	254.0 ... 355.0
U3W3U3	450.0 ... 637.0	1400.0 ... 1800.0	355.0 ... 450.0
U3X3T3	450.0 ... 637.0	1800.0 ... 2500.0	254.0 ... 355.0
U3X3U3	450.0 ... 637.0	1800.0 ... 2500.0	355.0 ... 450.0

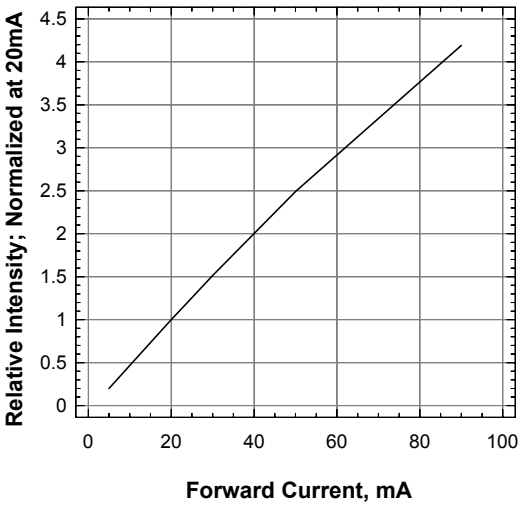
Luminous intensity is measured with an accuracy of ± 11%.

Correlation Between Luminous Intensity And Luminous Flux

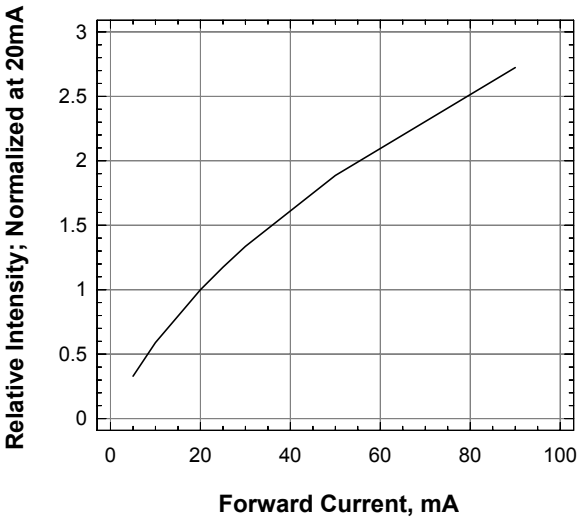
Color	IV Bin	Luminous Intensity (mcd)		Correlated Luminous Flux (lm)	
		Min	Max	Min	Max
Red	T3	320	450	0.80	1.13
	U3	450	637	1.13	1.59
True Green	U3	715	1012	1.79	2.53
	V3	1012	1400	2.53	3.50
	W3	1400	1800	3.50	4.50
	X3	1800	2500	4.50	6.25
Blue	R3	126	180	0.32	0.45
	S3	180	254	0.45	0.64
	T3	254	355	0.64	0.89
	U3	355	450	0.89	1.13

Dominant wavelength is measured with an accuracy of ±1nm.

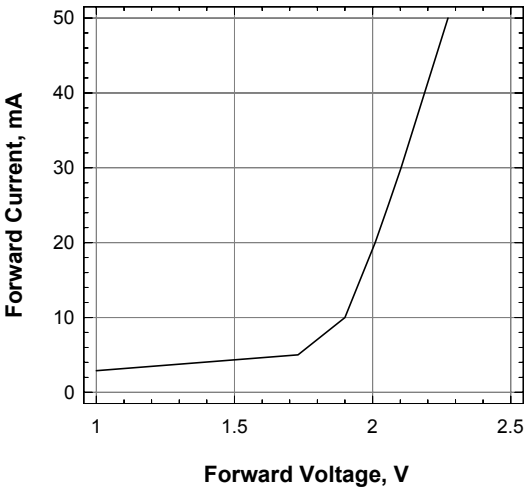
Relative Intensity Vs Forward Current (Red)



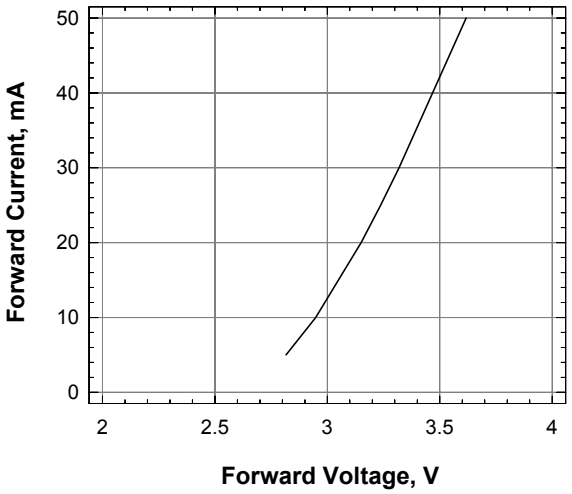
Relative Intensity Vs Forward Current (Blue and True Green)



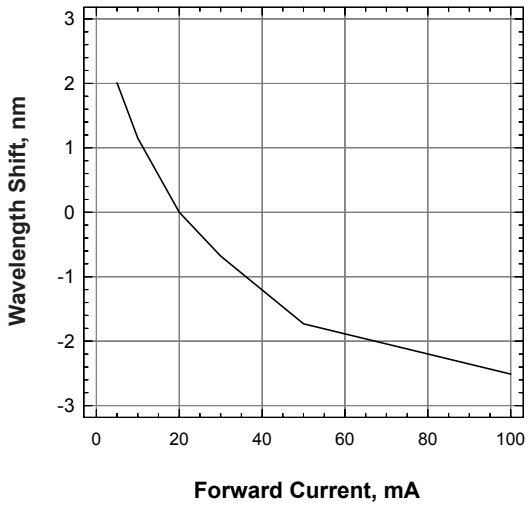
Forward Current Vs Forward Voltage (Red)



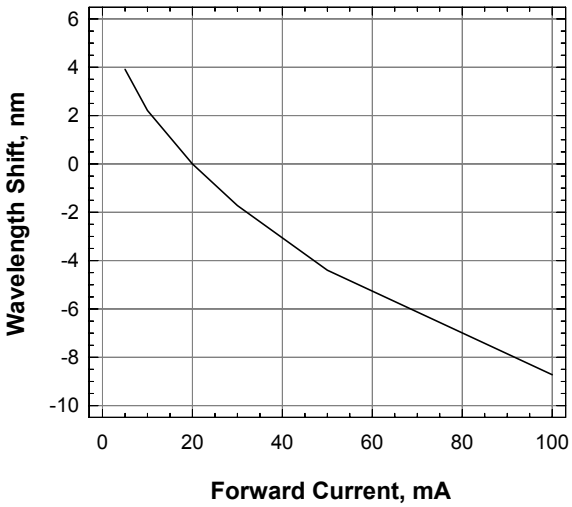
Forward Current Vs Forward Voltage (Blue and True Green)



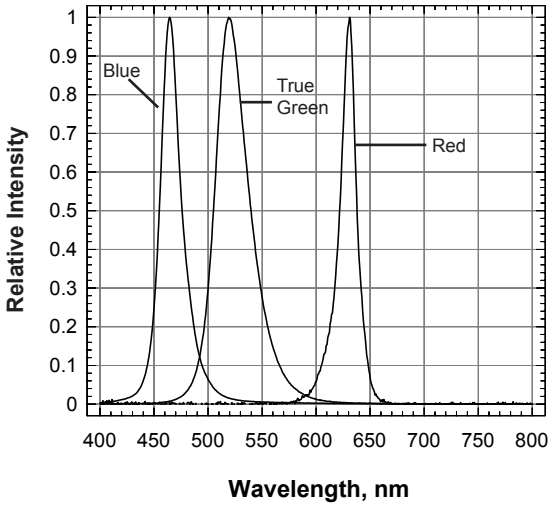
Wavelength Shift Vs Forward Current (Blue)



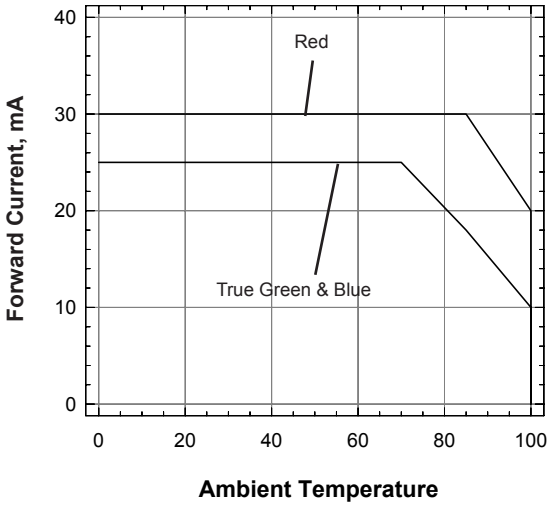
Wavelength Shift Vs Forward Current (True Green)



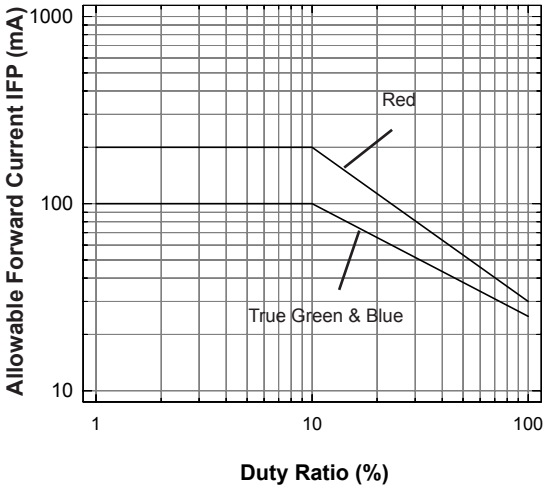
Relative Intensity vs Wavelength



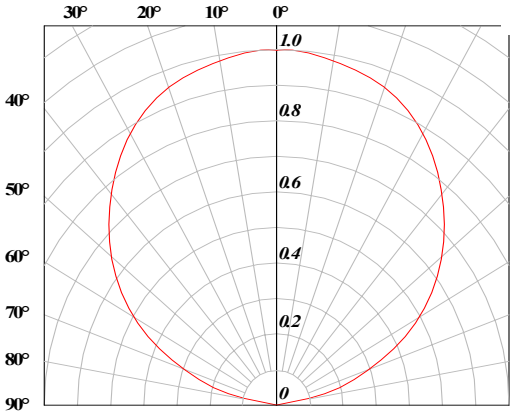
Maximum Permissible Forward Current



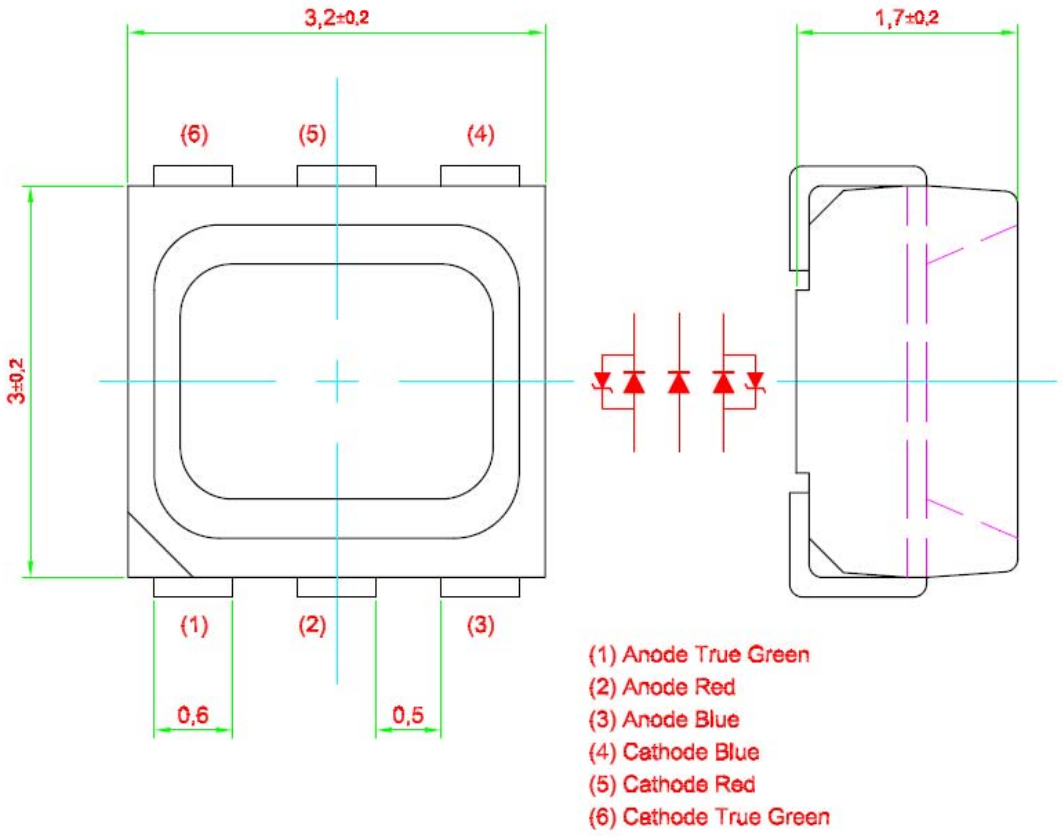
Allowable Forward Current Vs Duty Ratio



Radiation Pattern



Multi DomiLED™ : D6RTB-DJD Package Outlines

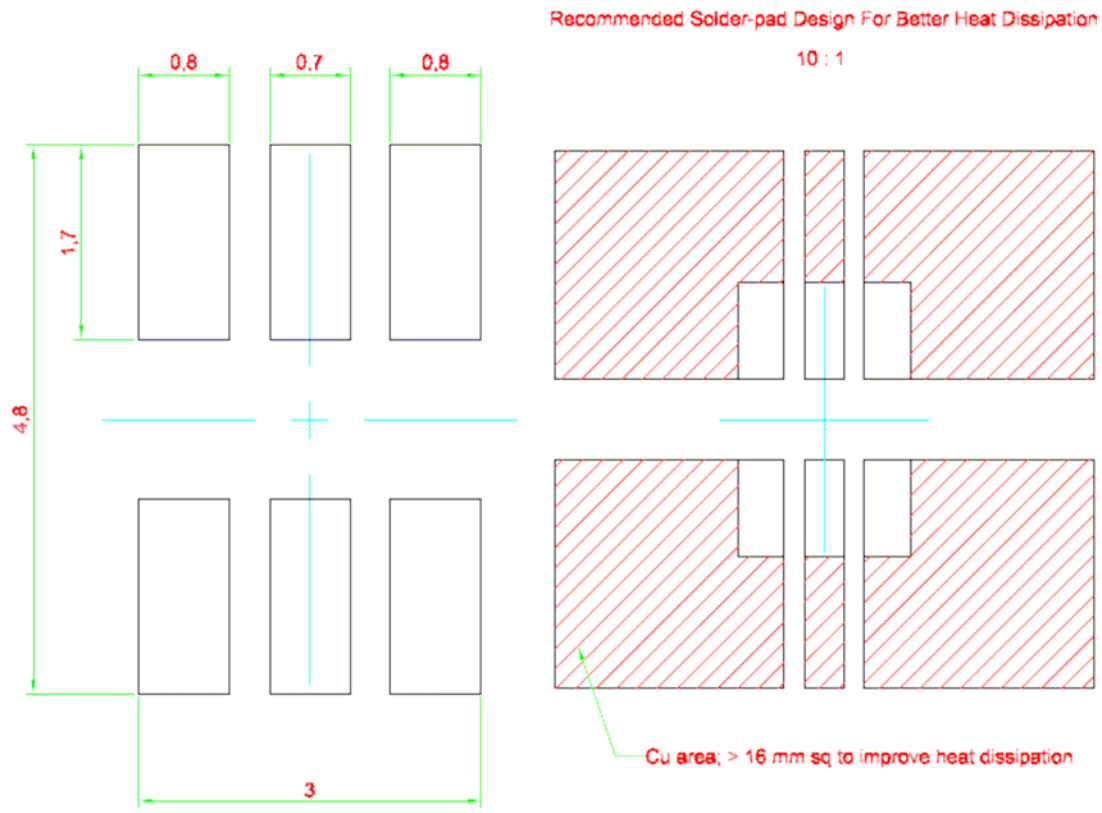


Materials

	Materials
Lead Frame	Copper alloy
Housing	High temperature resistant plastic, PPA
Encapsulant	SIlicone resin
Lead-finishing	Pure tin plating, Sn

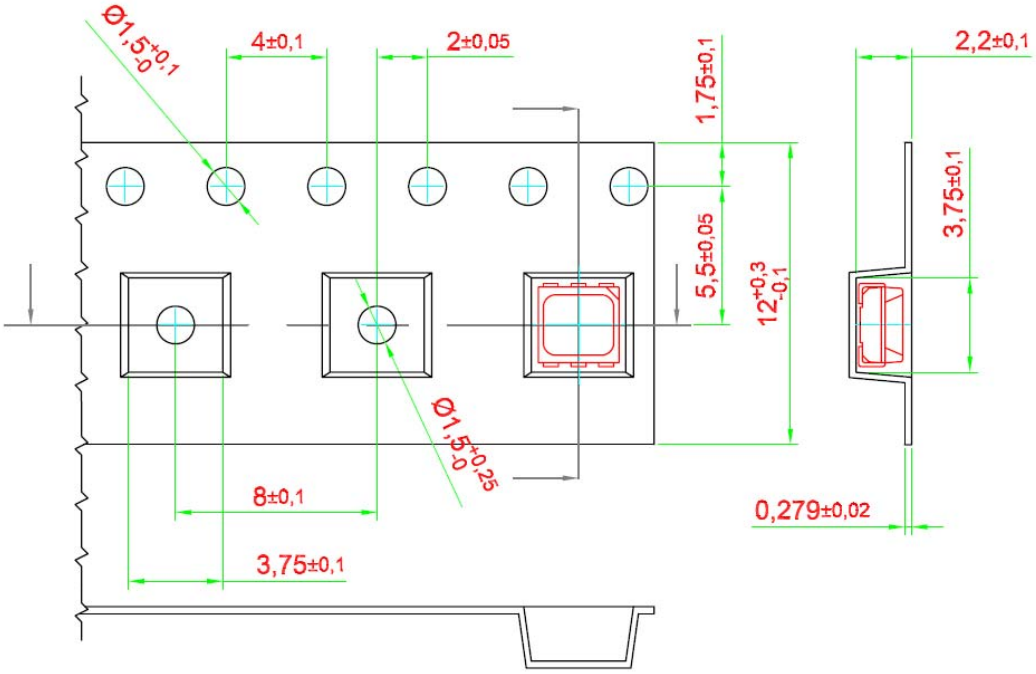
Note: Package is Pb-free.

Recommended Solder Pad

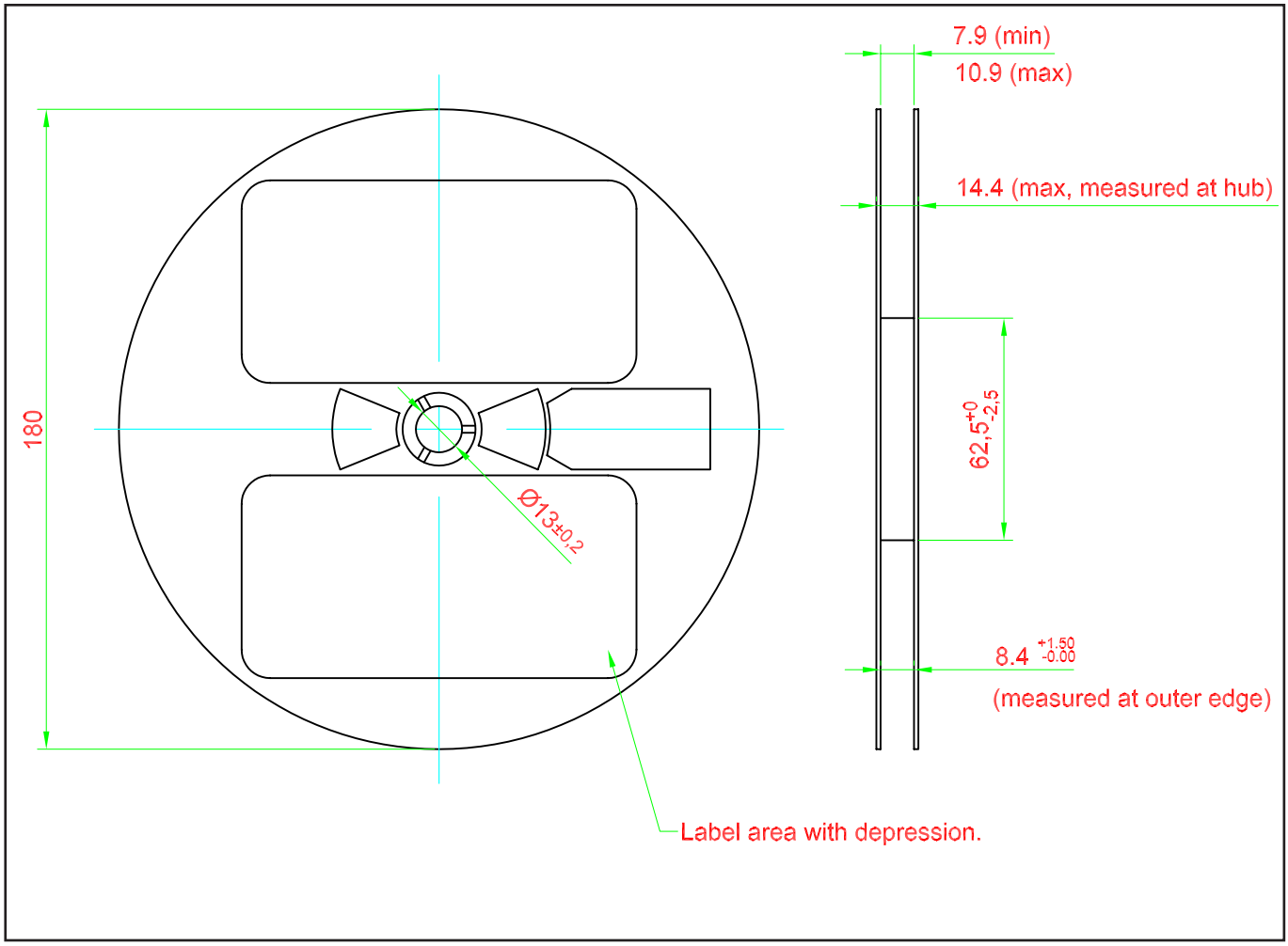


Taping and orientation

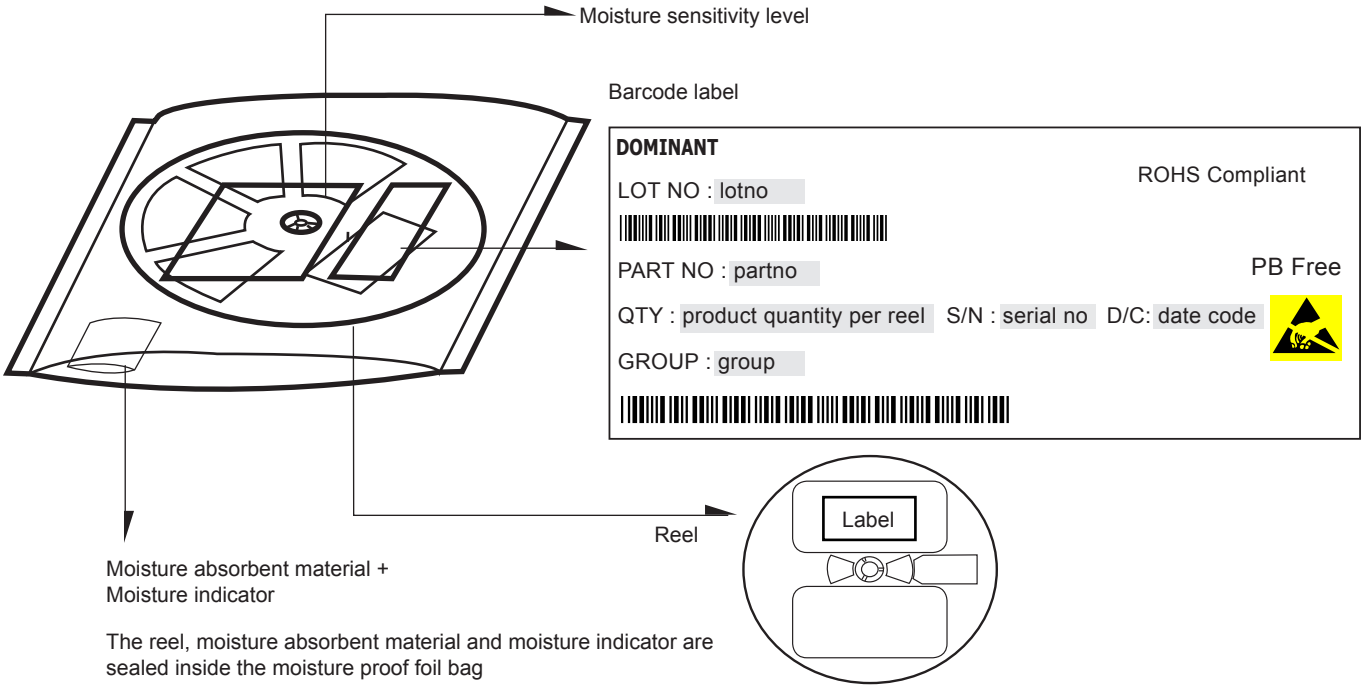
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



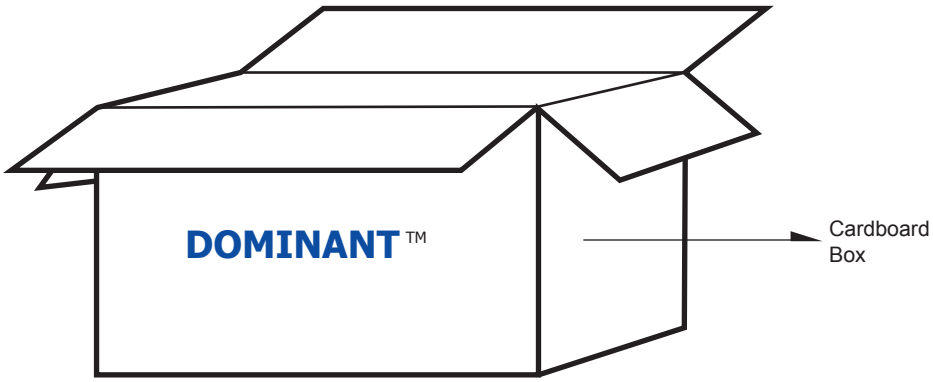
Packaging Specification



Packaging Specification



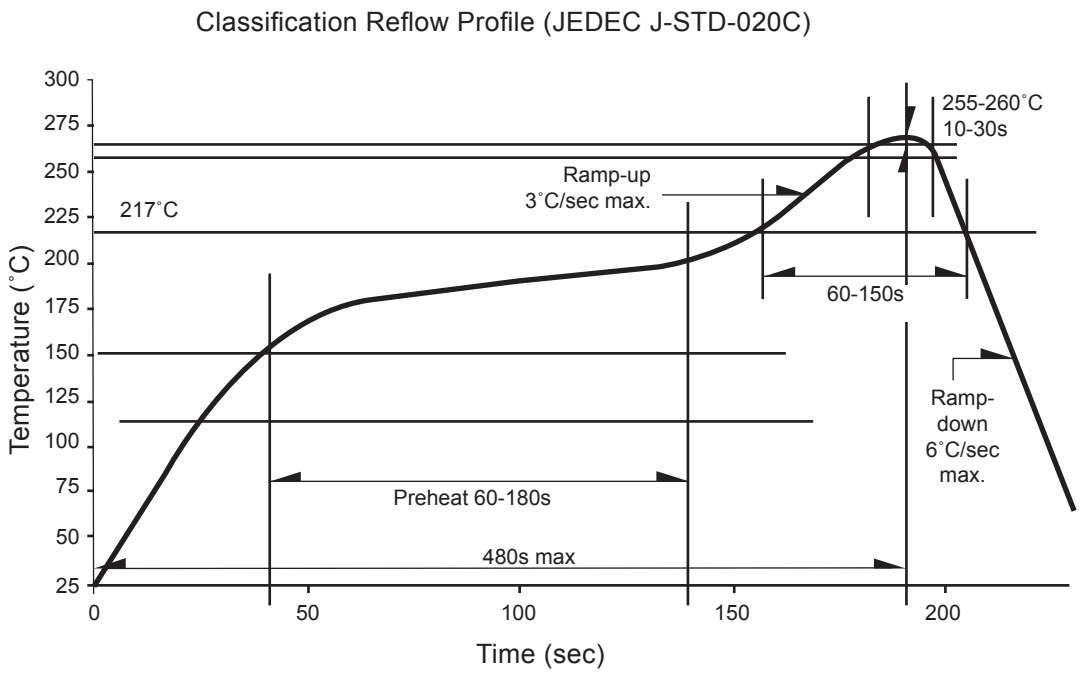
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (1000pcs)
Weight (gram)	**0.034**	**100 ± 10**



For Multi 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	15,000 MAX
Large	416 x 516 x 476	1.74	50 reels MAX	50,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
-	Change to official format	05 Mar 2007
3, 5	- Add Thermal Resistance Junction/Ambient - Add Max permissible Forward Current Graph - Add Allowable Forward Current Vs Duty Ratio	16 May 2007
-	Update company name	04 May 2010
2	Typo error on Optical Characteristics	05 Oct 2011
2	Not for new design: D6RTB-DJD-TU+UV+RS-1 Add new partno: D6RTB-DJD-TU+WX+TU-1	07 Jun 2012
2	Update Electrical Characteristics for True Green and Blue	16 Dec 2013

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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