

**Carrier Tape Change for all PLCC6 D6RTB
Product Change Notice issued on 01 Aug 2015.**

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:

- > Automotive: Interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Automotive: Exterior applications, eg: signal lighting, Center High Mounted Stop Light (CHMSL)
- > Signs: full color video
- > Consumer & Communication: backlighting of LCDs
- > General Lighting: architectural lighting, decorative lighting



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-PJG-UV+WX+ST-1	Red 625nm	True Green 525nm	Blue 470nm	715.0	1000.0	1400.0	1260.0	1764.0	2470.0	212.0	300.0	420.0

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	1.90	2.10	2.50
True Green	2.80	3.10	3.40
Blue	2.80	3.10	3.40

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	Red; AlInGaP=50; True Green, Blue; InGaN=50	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 For Reverse Bias	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}	440	K/W
Blue & True Green, R _{th JA}	320	K/W
Thermal resistance junction/solder (3 chips on), R _{th JS}	180	K/W

Characteristics

	Symbol		Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	$TC_{\lambda_{dom}}$	Red	0.06	nm / K
		True Green	0.02	nm / K
		Blue	0.02	nm / K
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_V	Red	-3.6	mV / K
		True Green	-3.0	mV / K
		Blue	-2.4	mV / K
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	TC_{I_V}	Red	-0.53	% / K
		True Green	-0.04	% / K
		Blue	0.02	% / K

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	465 - 475
	A	465 - 470
	B	470 - 475

Dominant wavelength is measured with an accuracy of $\pm 1\text{nm}$.

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
U3W3S3	715.0...1000.0	1260.0...1764.0	212.0...300.0
U3W3T3	715.0...1000.0	1260.0...1764.0	300.0...420.0
U3X3S3	715.0...1000.0	1764.0...2470.0	212.0...300.0
U3X3T3	715.0...1000.0	1764.0...2470.0	300.0...420.0
V3W3S3	1000.0...1400.0	1260.0...1764.0	212.0...300.0
V3W3T3	1000.0...1400.0	1260.0...1764.0	300.0...420.0
V3X3S3	1000.0...1400.0	1764.0...2470.0	212.0...300.0
V3X3T3	1000.0...1400.0	1764.0...2470.0	300.0...420.0

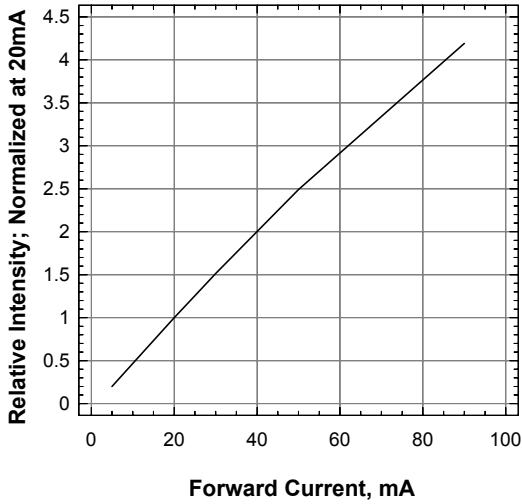
Luminous intensity is measured with an accuracy of ± 11%.

Correlation Between Luminous Intensity And Luminous Flux

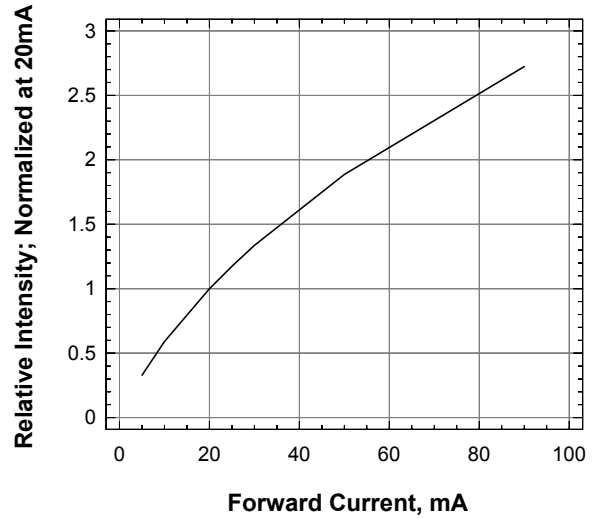
Color	IV Bin	Luminous Intensity (mcd)		Correlated Luminous Flux (lm)	
		Min	Max	Min	Max
Red	U3	715	1000	1.79	2.50
	V3	1000	1400	2.50	3.50
True Green	W3	1260	1764	3.15	4.41
	X3	1764	2470	4.41	6.18
Blue	S3	212	300	0.53	0.75
	T3	300	420	0.75	1.05

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

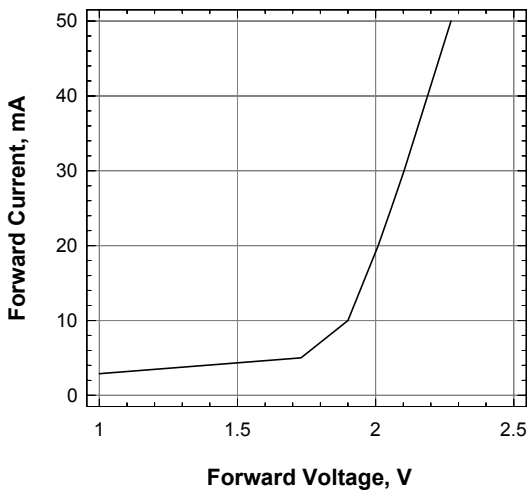
Relative Intensity Vs Forward Current (Red)



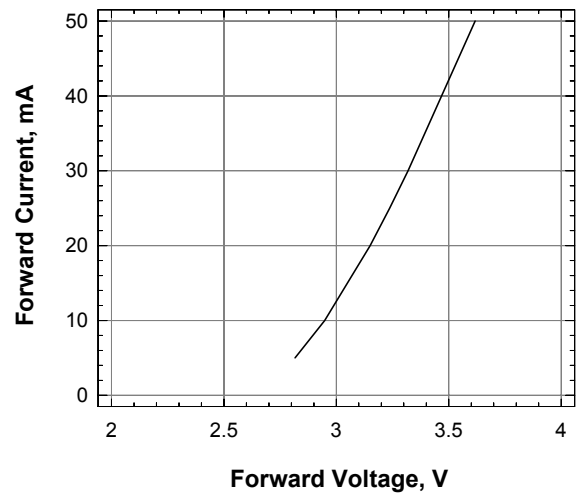
Relative Intensity Vs Forward Current (Blue and True Green)



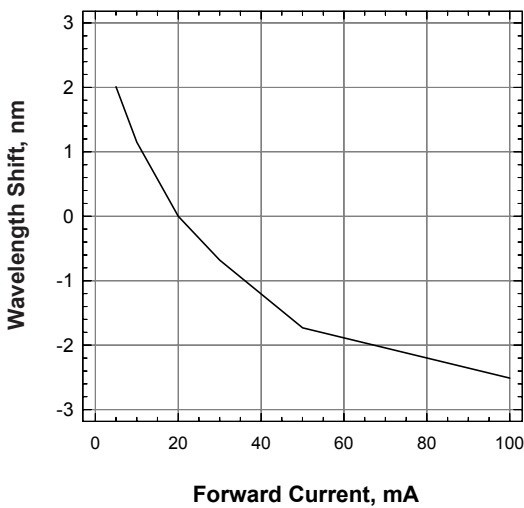
Forward Current Vs Forward Voltage (Red)



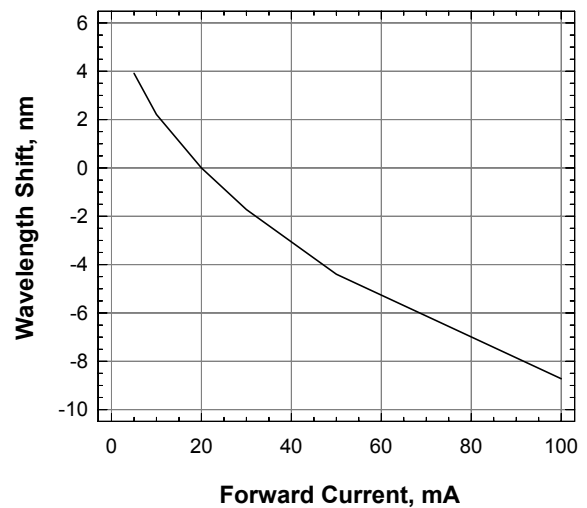
Forward Current Vs Forward Voltage (Blue and True Green)



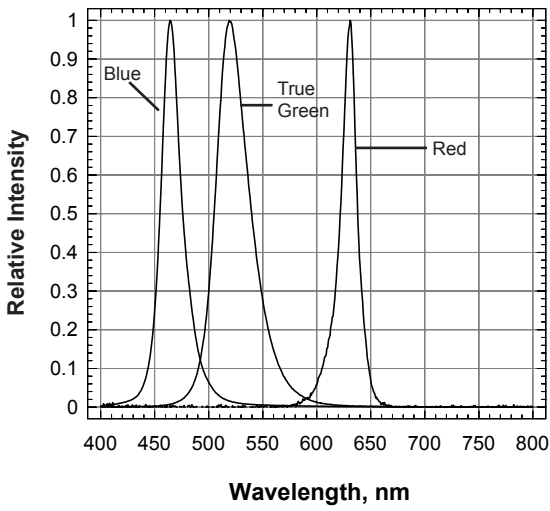
Wavelength Shift Vs Forward Current (Blue)



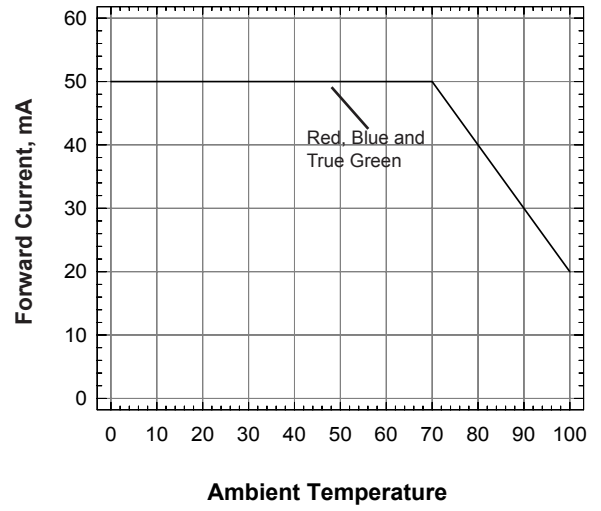
Wavelength Shift Vs Forward Current (True Green)



Relative Intensity vs Wavelength

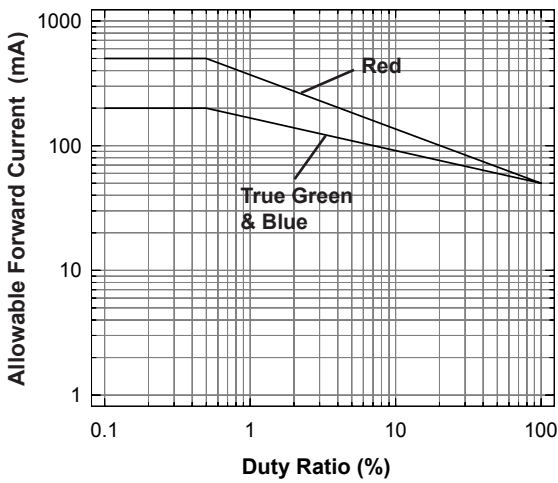


Maximum Permissible Forward Current (3 Chips on)

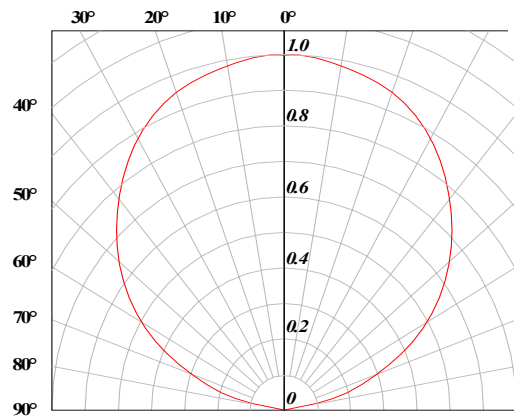


Allowable Forward Current Vs Duty Ratio

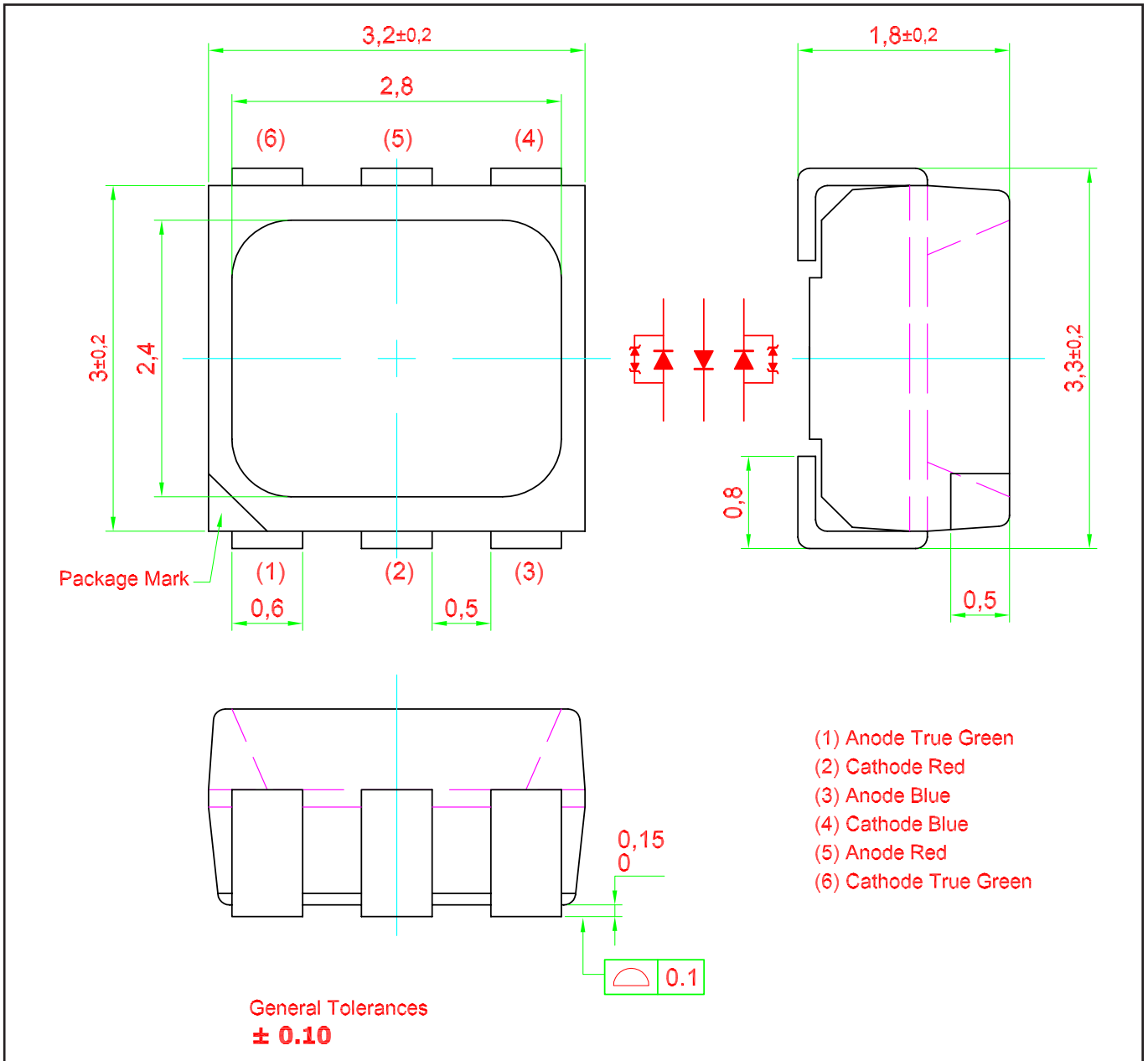
(Tj=25 Deg C, tp<10uS)



Radiation Pattern



Multi DomiLED™ : D6RTB-PJG Package Outlines

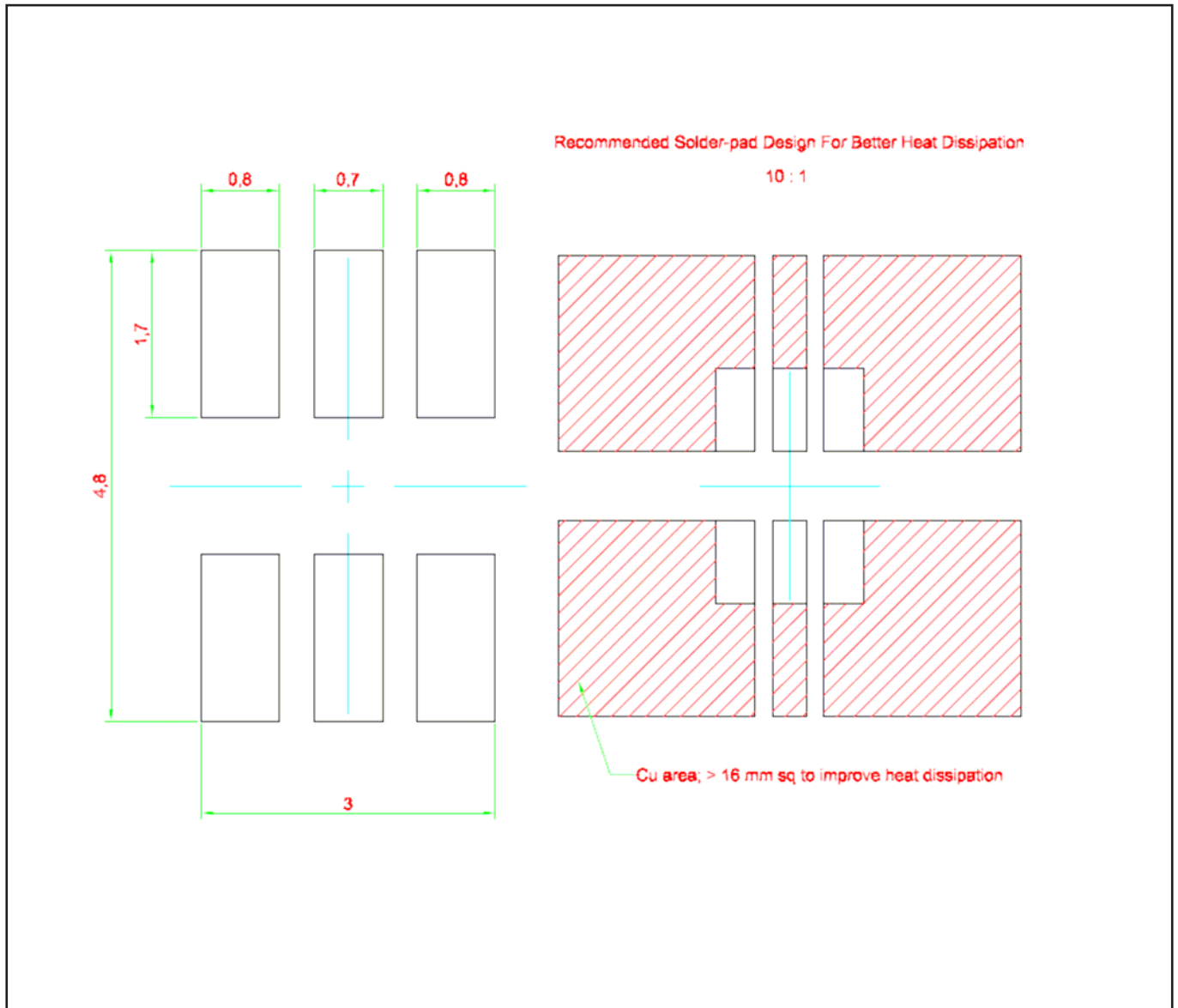


Materials

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

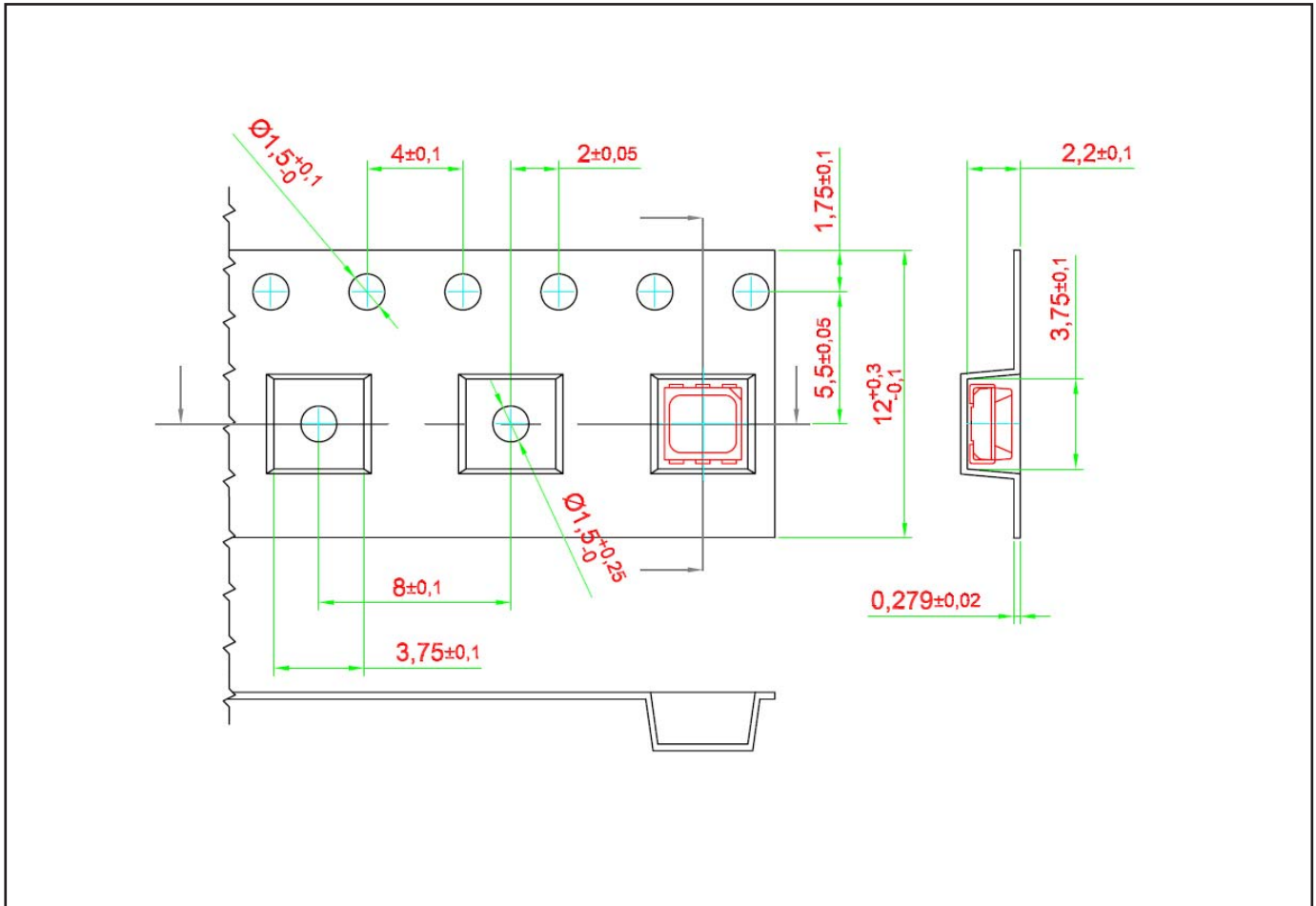
Note: Package is Pb-free.

Recommended Solder Pad

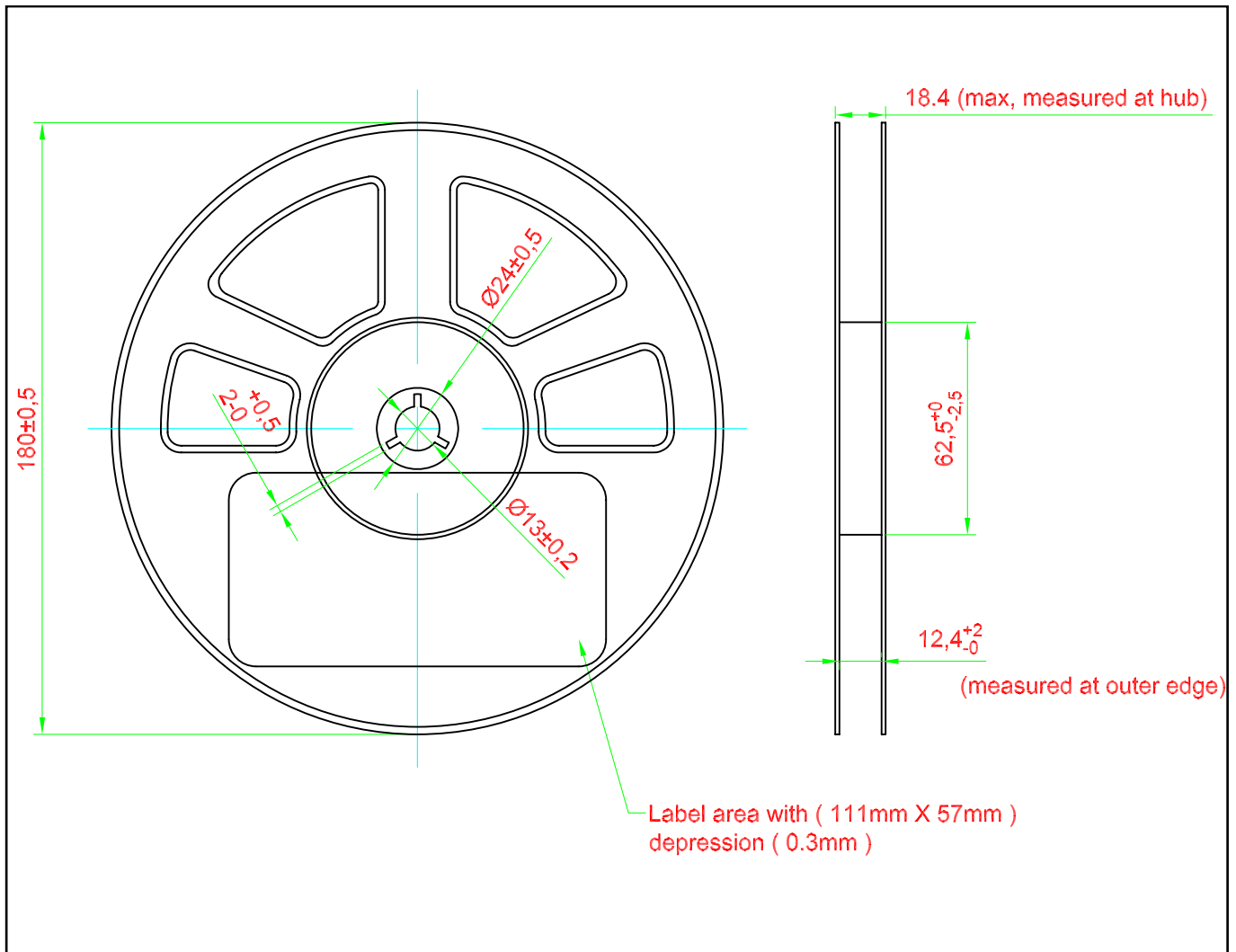


Taping and orientation

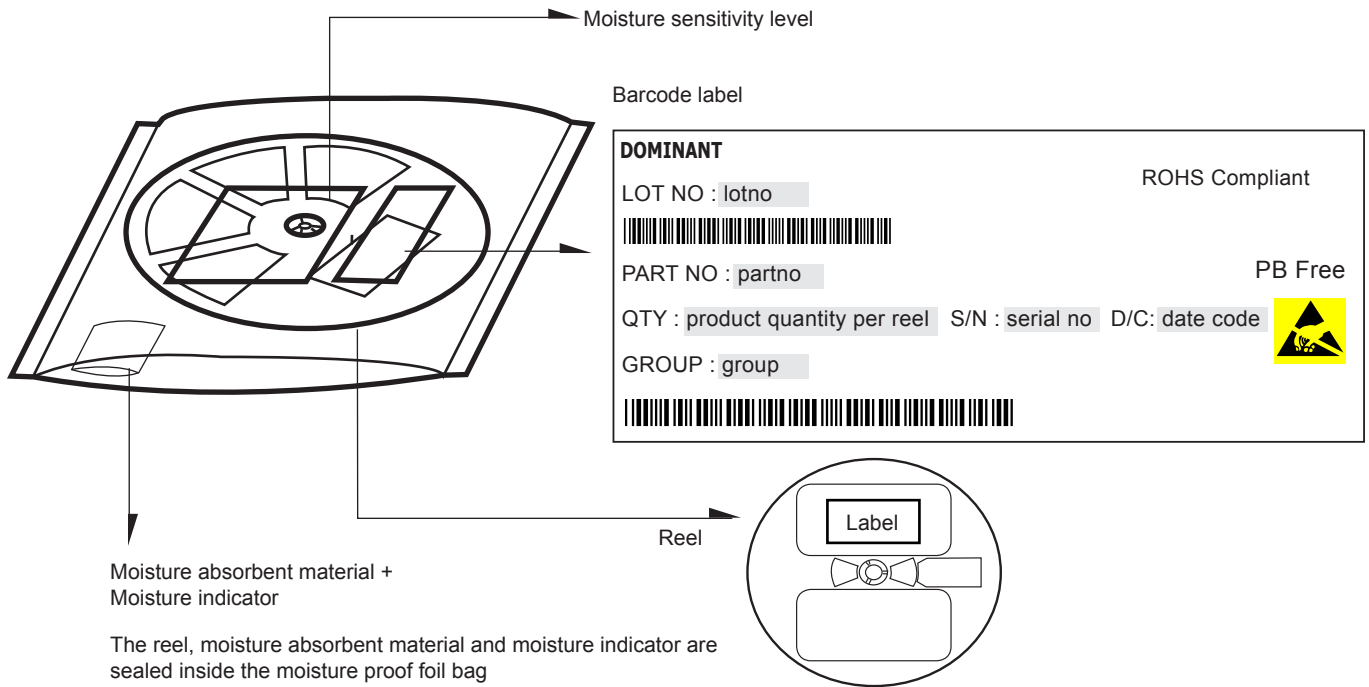
- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



Packaging Specification

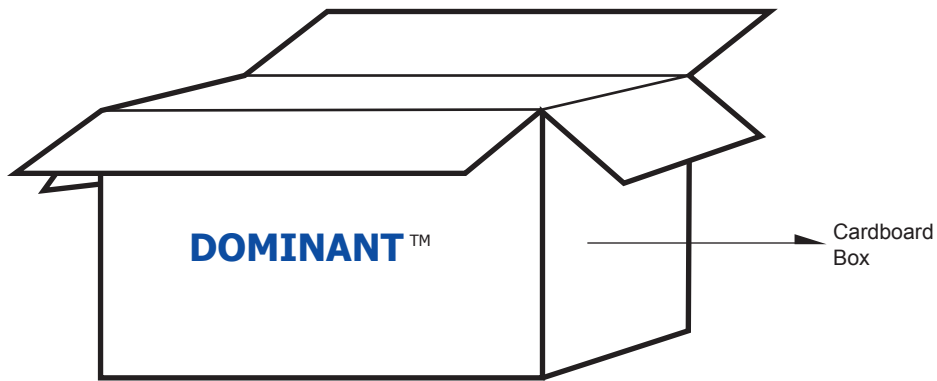


Packaging Specification



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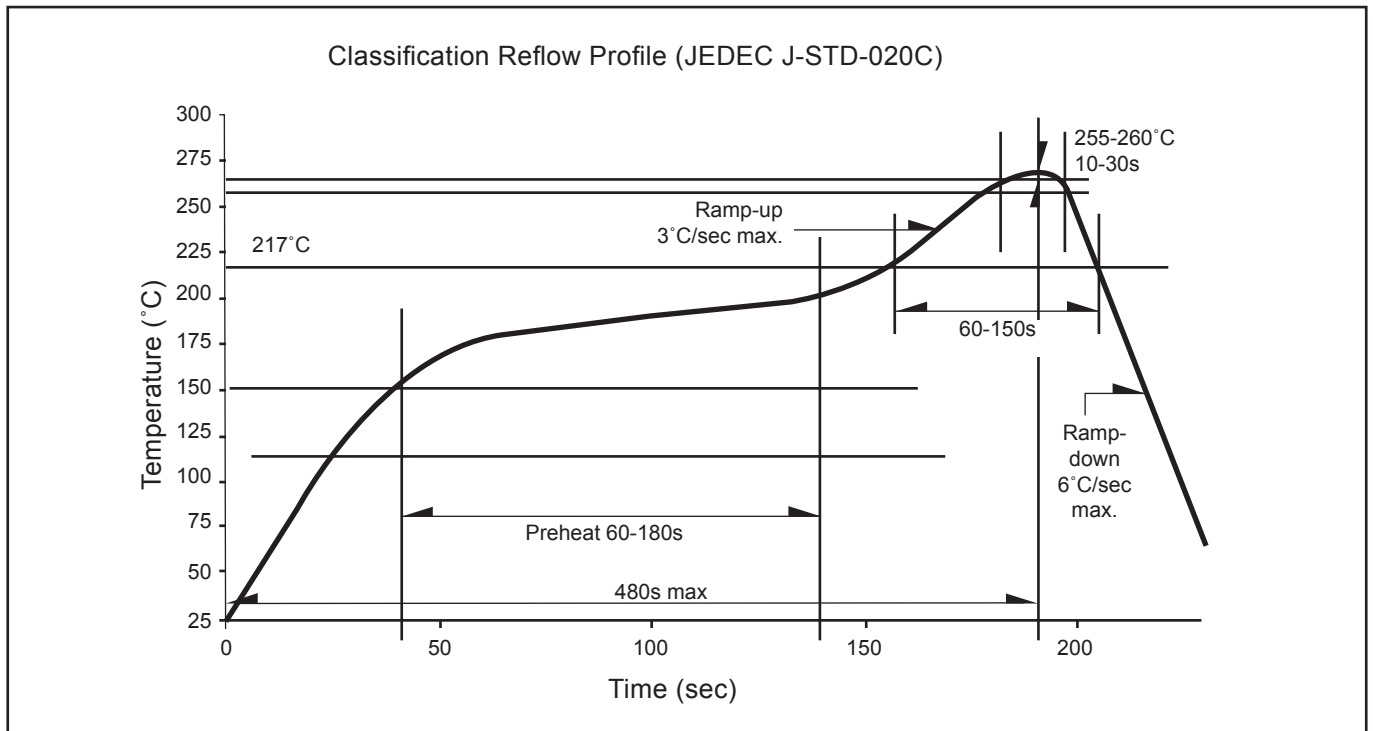
Weight (gram)	0.034	100 ± 10
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For Multi DomiLED™

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
-	Initial release	22 May 2012
2	Update partno from D6RTB-PJG-UV+VW+ST-1 -> D6RTB-PJG-UV+WX+ST-1	10 Sep 2012
1	Update Applications	31 Oct 2012
2, 6	Update DC forward current to 50 Update Thermal Resistance / Ambient	30 Aug 2013
6	Update graph: Allowable Forward Current Vs Duty Ratio	21 Nov 2013
7	Update package outline	15 Jul 2014

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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