

### 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, eg: backlighting of display --> navigation system
- > Signs: full color video
- > Consumer & Communication: backlighting of LCDs
- > General Lighting: architectural lighting, decorative lighting



Part Ordering Number	Color, $\lambda_{dom}$ (nm)			Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
	Chip #1	Chip #2	Chip #3		Chip #1	Chip #2	Chip #3
<b>D6RTB-DJD-TU+UV+RS</b>	Red	True Green	Blue	<b>120</b>	<b>320.0 - 637.0</b>	<b>715.0 - 1400.0</b>	<b>126.0 - 254.0</b>
• D6RTB-DJD-T3U3R3	625nm	525nm	460nm		320.0 - 450.0	715.0 - 1012.0	126.0 - 180.0
• D6RTB-DJD-T3U3S3					320.0 - 450.0	715.0 - 1012.0	180.0 - 254.0
• D6RTB-DJD-T3V3R3					320.0 - 450.0	1012.0 - 1400.0	126.0 - 180.0
• D6RTB-DJD-T3V3S3					320.0 - 450.0	1012.0 - 1400.0	180.0 - 254.0
• D6RTB-DJD-U3U3R3					450.0 - 637.0	715.0 - 1012.0	126.0 - 180.0
• D6RTB-DJD-U3U3S3					450.0 - 637.0	715.0 - 1012.0	180.0 - 254.0
• D6RTB-DJD-U3V3R3					450.0 - 637.0	1012.0 - 1400.0	126.0 - 180.0
• D6RTB-DJD-U3V3S3					450.0 - 637.0	1012.0 - 1400.0	180.0 - 254.0

NOTE:

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

### 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  $\pm 1\text{nm}$ .

### Electrical Characteristics at Ta=25°C

	Vf @ If = 20mA		
	Min. (V)	Typ. (V)	Max. (V)
Red	2.00	2.10	2.60
True Green	3.00	3.20	3.60
Blue	3.00	3.20	3.60

Forward voltage, Vf is measured with an accuracy of  $\pm 0.1\text{ V}$ .

## 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.

## Correlation Between Luminous Intensity And Luminous Flux

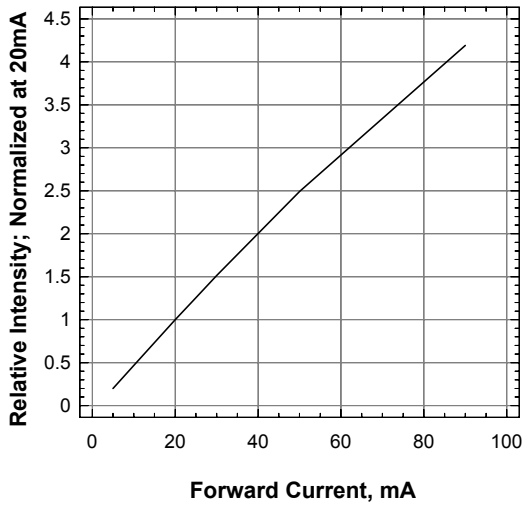
Color	IV Bin	Luminous Intensity (mcd)		Correlated Luminous Flux (lm)	
		Min	Max	Min	Max
Red	T3	320	450	0.80	1.13
	U3	450	637	1.13	1.59
True Green	U3	715	1012	1.79	2.53
	V3	1012	1400	2.53	3.50
Blue	R3	126	180	0.32	0.45
	S3	180	254	0.45	0.64

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

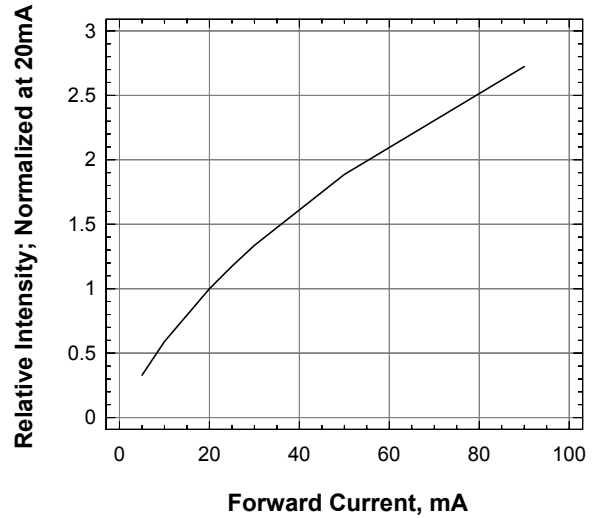
## Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	Red; AllInGaP=30; True Green, Blue; InGaN=25	mA
Peak pulse current; ( $t_p \leq 10\mu s$ , Duty cycle = 0.005)	Red ; AllInGaP=500; True Green, Blue; InGaN=200	mA
Reverse voltage	Red; AllInGaP=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

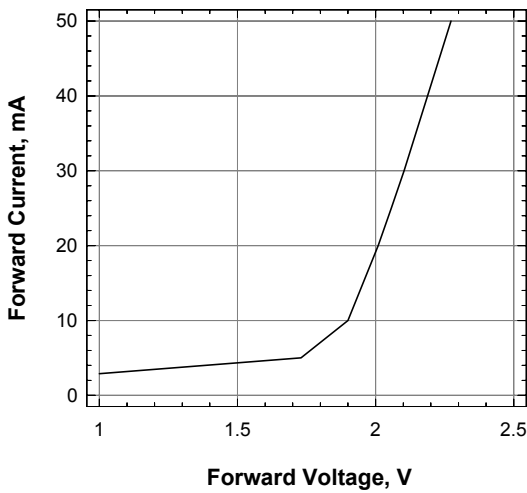
**Relative Intensity Vs Forward Current (Red)**



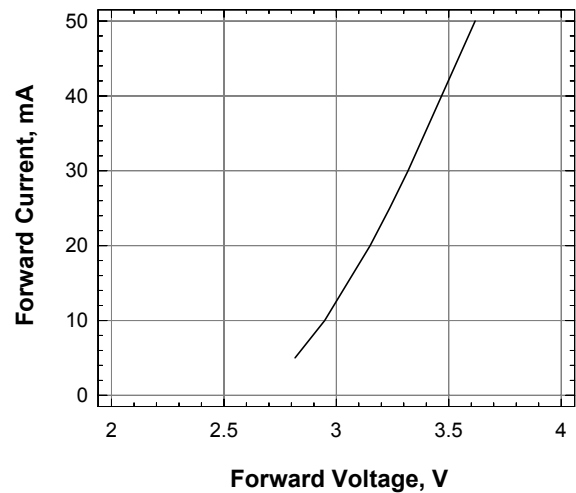
**Relative Intensity Vs Forward Current (Blue and True Green)**



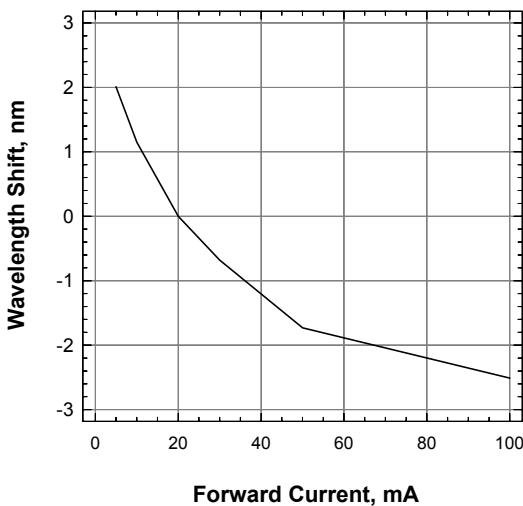
**Forward Current Vs Forward Voltage (Red)**



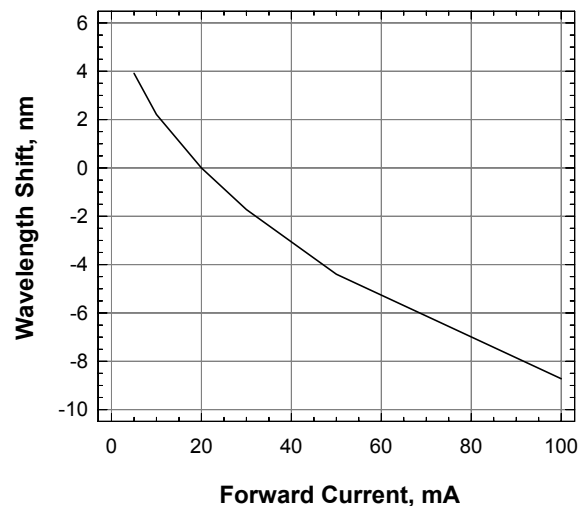
**Forward Current Vs Forward Voltage (Blue and True Green)**



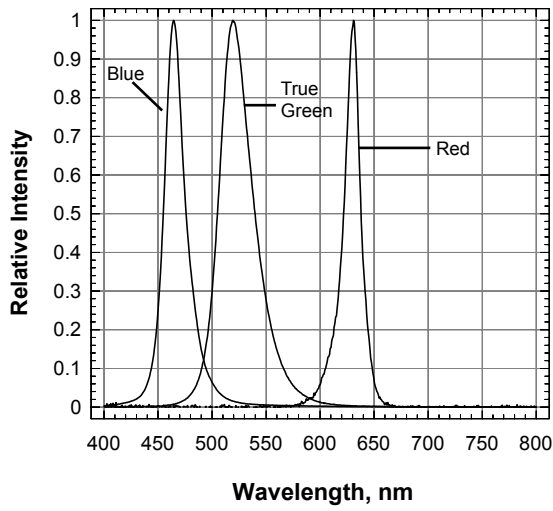
**Wavelength Shift Vs Forward Current (Blue)**



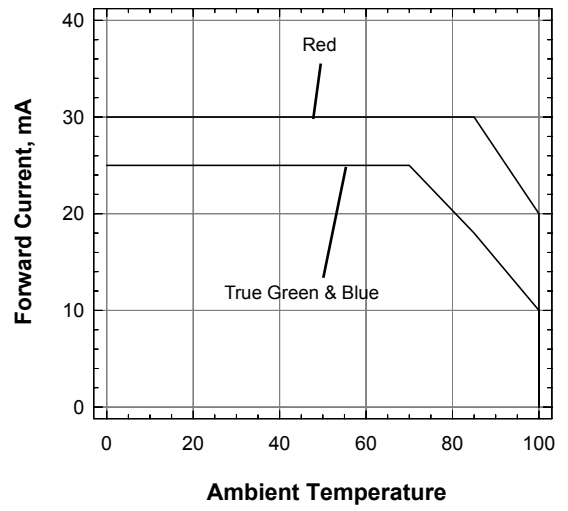
**Wavelength Shift Vs Forward Current (True Green)**



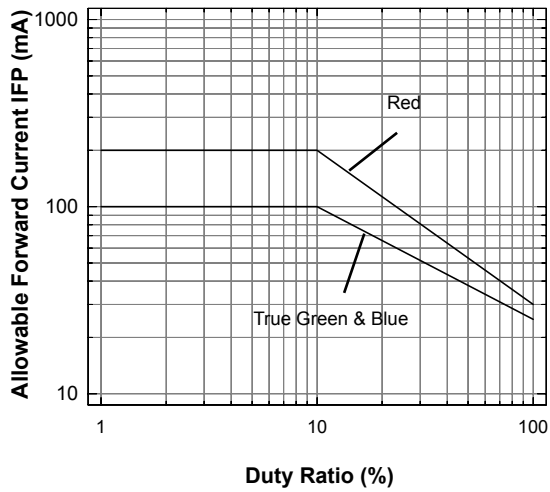
**Relative Intensity vs Wavelength**



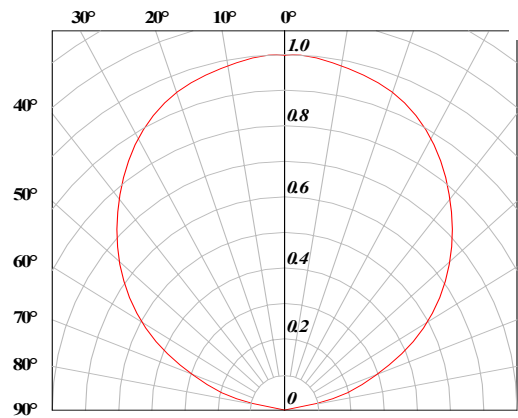
**Maximum Permissible Forward Current**



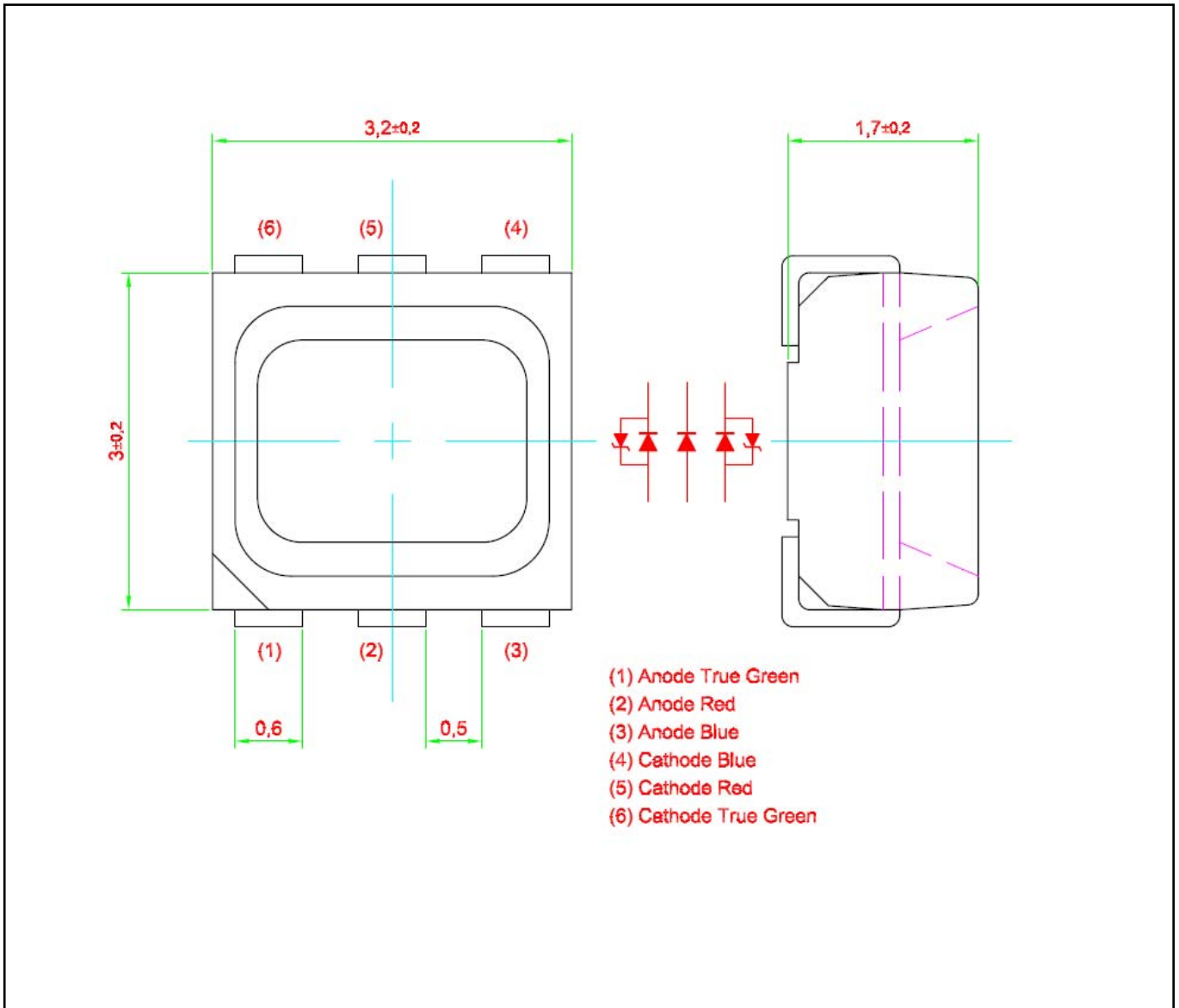
**Allowable Forward Current vs Duty Ratio**



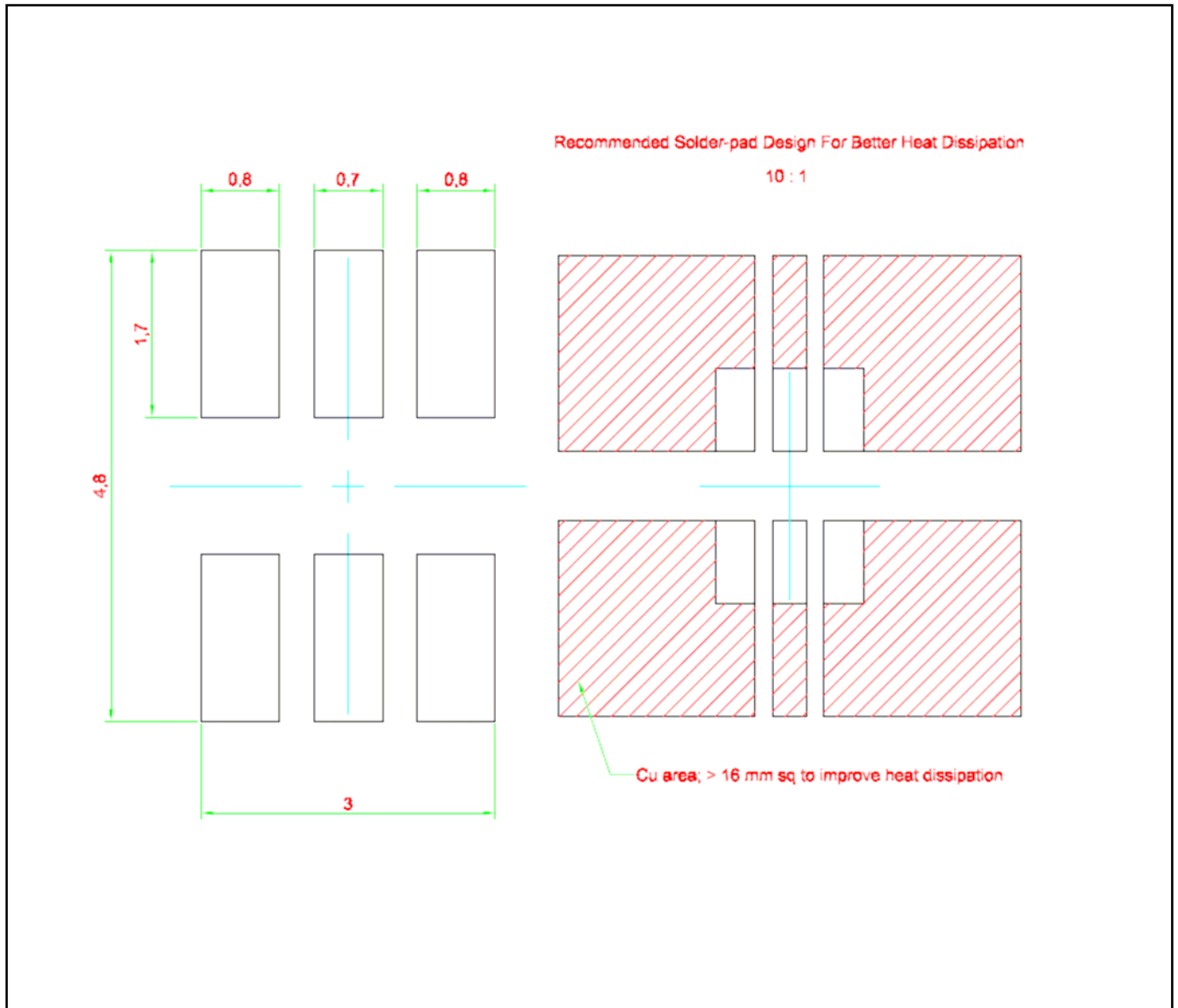
**Radiation Pattern**



**Multi DomiLED™ : D6RTB-DJD Package Outlines**

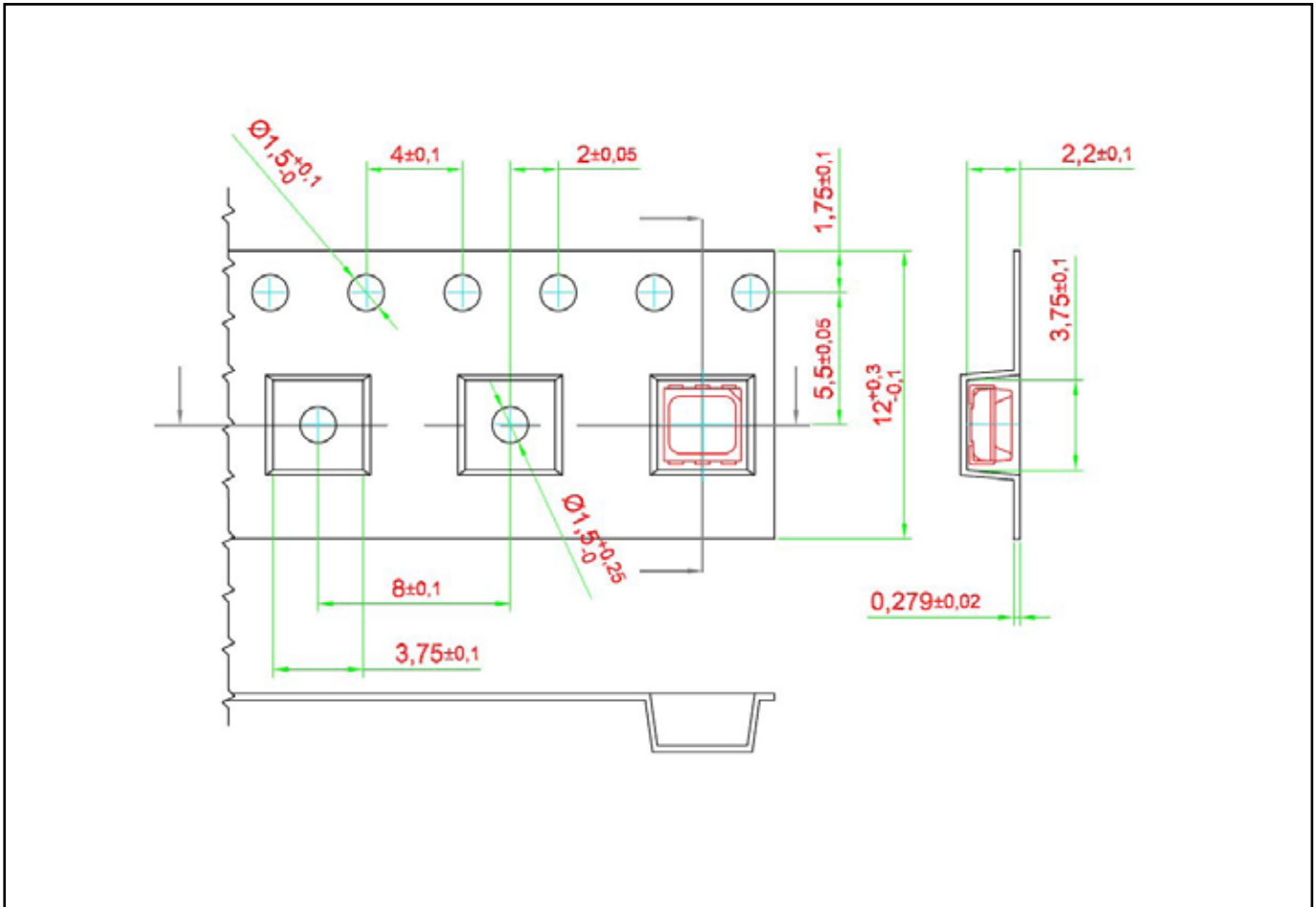


### Recommended Solder Pad



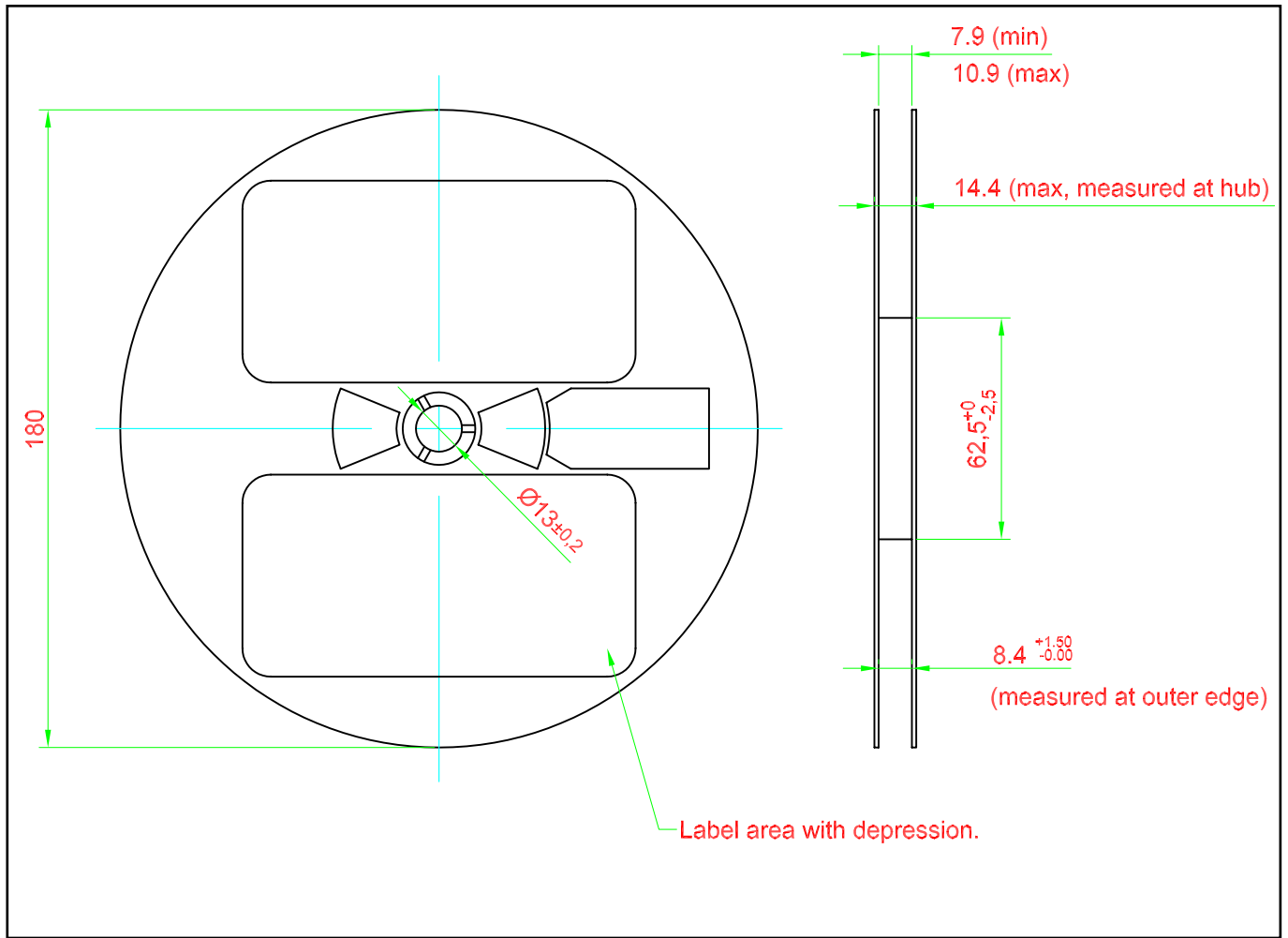
### Taping and orientation

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

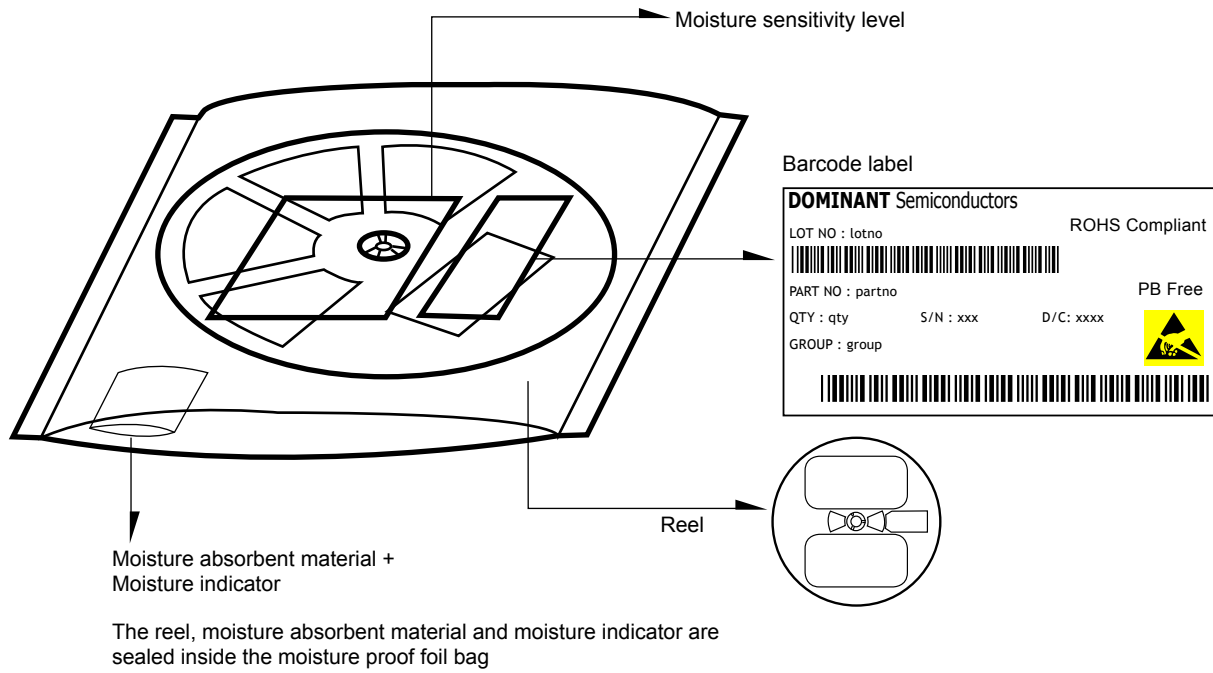




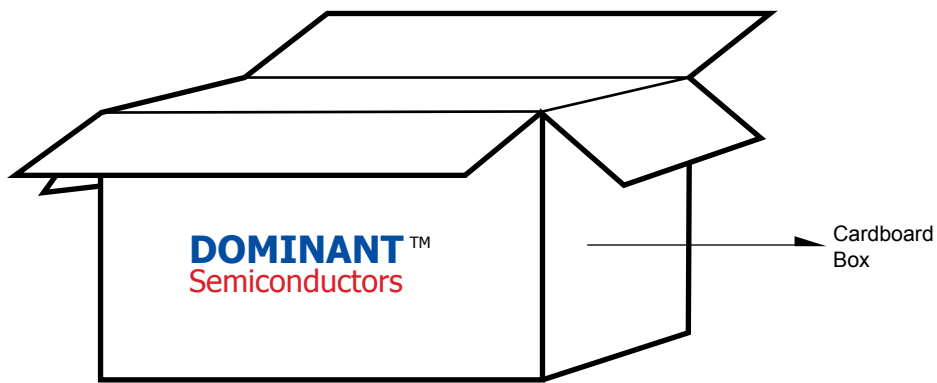
**Packaging Specification**



**Packaging Specification**



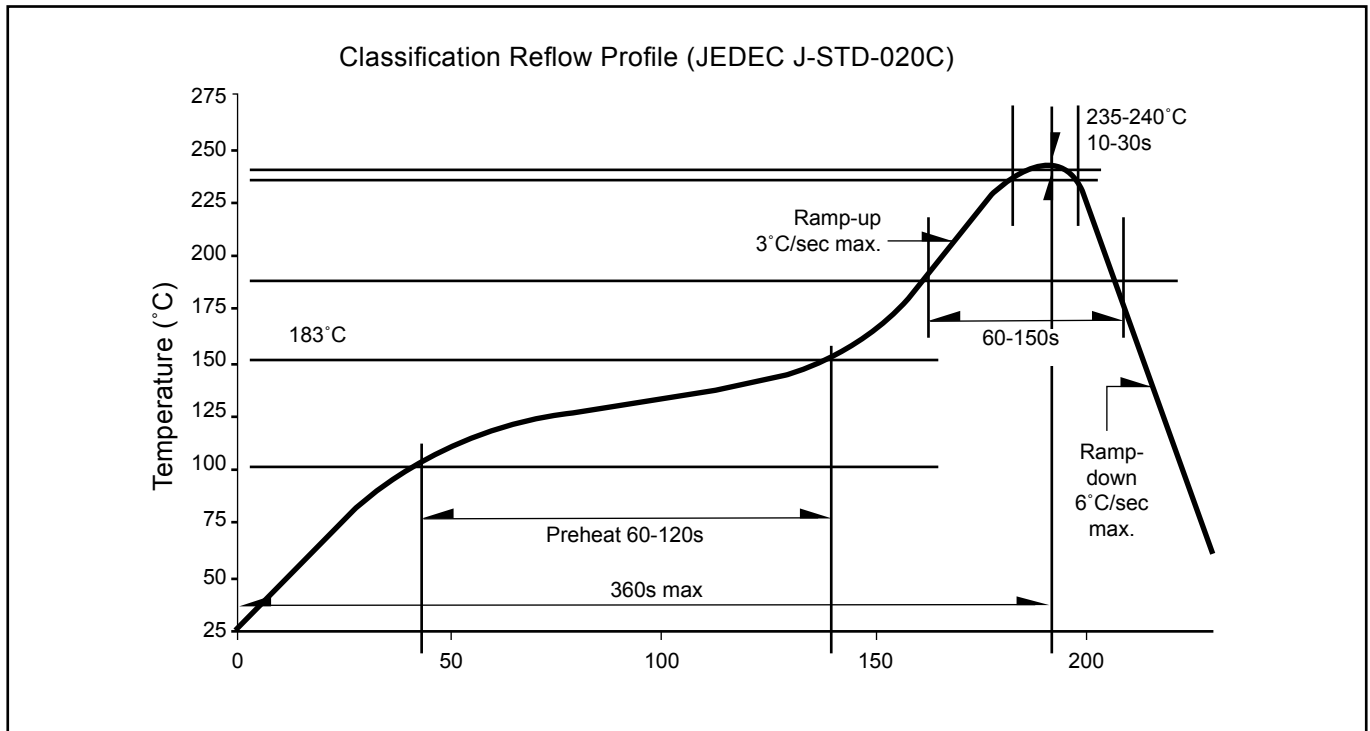
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (1000pcs)
Weight (gram)	0.034	100 ± 10



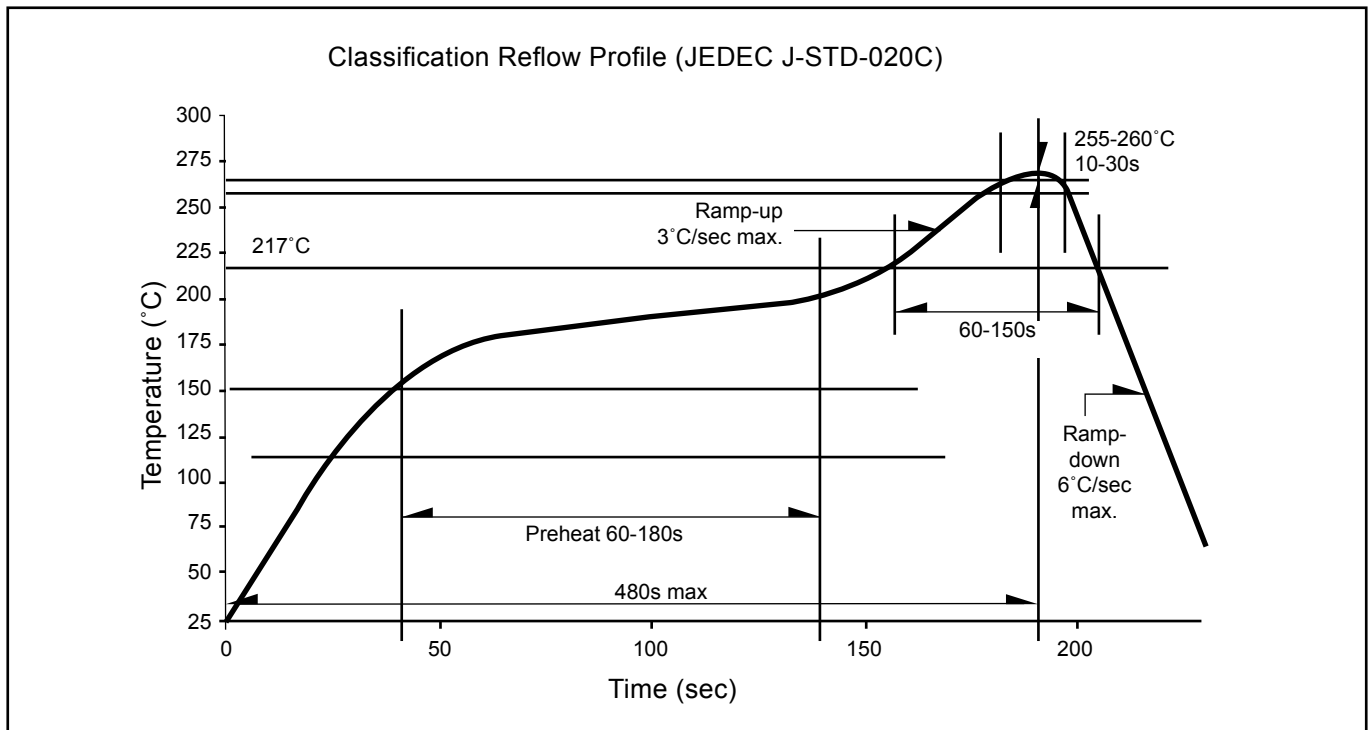
**For Multi DomiLED™**

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 Sn-Pb IR-Reflow Soldering Profile**



**Recommended Pb-free Soldering Profile**



**Revision History**

Page	Subjects	Date of Modification
-	Change to official format	05 Mar 2007
3	- Add Thermal Resistance Junction/Ambient	16 May 2007
5	- Add Max permissible Forward Current Graph	16 May 2007
5	- Add Allowable Forward Current Vs Duty Ratio	16 May 2007

**NOTE**

All the information contained in this document is considered to be reliable at the time of publishing. However, DOMINANT Semiconductors does not assume any liability arising out of the application or use of any product described herein.

DOMINANT Semiconductors reserves the right to make changes at any time without prior notice to any products in order to improve reliability, function or design.

DOMINANT Semiconductors 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 Semiconductors.

## About Us

DOMINANT Semiconductors 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 Semiconductors can be found on the Internet at <http://www.dominant-semi.com>.

Please contact us for more information:

### Head Quarter

DOMINANT Semiconductors 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](mailto:sales@dominant-semi.com)

### DOMINANT China Sales Office

DOMINANT Semiconductors (Shenzhen) Co. Ltd.  
24BC Newbaohui Building, No. 1007 West Nanhai Blvd., Nanshan, Shenzhen, China P.C. 518054  
Tel: +86 (755) 86031785 / +86 (755) 86031786 Fax: +86 (755) 86031789  
E-mail: [sales\\_china@dominant-semi.com](mailto:sales_china@dominant-semi.com)

### DOMINANT Korea Sales Office

DOMINANT Semiconductors Korea Inc.  
902 Sunil Technopia, 440 Sangdaewon-dong, Jungwon-gu, Sungnam-si, Kyunggi-do, Korea 462726  
Tel: 82-31-777-3978 Fax: 82-31-777-3976  
E-mail: [sales\\_korea@dominant-semi.com](mailto:sales_korea@dominant-semi.com)

