

DomiLED™

Synonymous with function and performance, the 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 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.
- > Consumer appliances: LCD illumination as in PDAs, LCD TV.
- > Communication: indicator and backlight in mobilephone.
- > Display: full color display video notice board.
- > Industrial: white goods (eg: Oven, microwave, etc.).



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 20mA		IV (mcd) Max.
			Min.	Typ.	
DDH-CJS-PQ2-1	Hyper-red, 640nm	120	45.00	71.50	112.50
DDS-CJS-PQ2-1	Super-red, 632nm	120	45.00	71.50	112.50
DDS-CJS-QR2-1	Super-red, 632nm	120	71.50	112.50	180.00
DDS-CJS-RS2-1	Super-red, 632nm	120	112.50	180.00	285.00
● DDS-SJS-QR2-1	Super-red, 632nm	120	71.50	112.50	180.00
DDR-CJS-RS2-1	Red, 625nm	120	112.50	180.00	285.00
DDR-CJS-ST1-1	Red, 625nm	120	180.00	285.00	355.00
● DDR-SJS-RS2-1	Red, 625nm	120	112.50	180.00	285.00
● DDR-TJS-TU2-1	Red, 625nm	120	285.00	450.00	715.00
DDA-CJS-RS2-1	Amber, 615nm	120	112.50	180.00	285.00
DDA-CJS-ST2-1	Amber, 615nm	120	180.00	285.00	450.00
● DDA-SJS-ST2-1	Amber, 615nm	120	180.00	285.00	450.00
DDO-CJS-RS2-1	Orange, 605nm	120	112.50	180.00	285.00
DDO-CJS-ST2-1	Orange, 605nm	120	180.00	285.00	450.00
● DDO-SJS-ST2-1	Orange, 605nm	120	180.00	285.00	450.00
DDY-CJS-QR2-1	Yellow, 587nm	120	71.50	112.50	180.00
DDY-CJS-RS2-1	Yellow, 587nm	120	112.50	180.00	285.00
DDY-CJS-ST2-1	Yellow, 587nm	120	180.00	285.00	450.00
● DDY-SJS-ST2-1	Yellow, 587nm	120	180.00	285.00	450.00
● DDY-TJS-TU2-1	Yellow, 587nm	120	285.00	450.00	715.00

Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ 20mA		IV (mcd) Max.
			Min.	Typ.	
DDG-CJS-PQ2-1	Green, 572nm	120	45.00	71.50	112.50
DDG-CJS-QR2-1	Green, 572nm	120	71.50	112.50	180.00
● DDG-SJS-QR2-1	Green, 572nm	120	71.50	112.50	180.00
DDP-CJS-LM2-1	Pure Green, 560nm	120	11.20	18.00	28.50
DDP-SJS-LM2-1	Pure Green, 560nm	120	11.20	18.00	28.50
DDP-SJS-MN2-1	Pure Green, 560nm	120	18.00	28.50	45.00

● Not for new design

NOTE

1. All part number above comes in a quantity of 2000 units per reel.
2. Other luminous intensity groups are also available upon request.
3. Luminous intensity is measured with an accuracy of $\pm 11\%$.
4. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
5. An optional Vf binning is also available upon request. Binning scheme is as per following table.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 20mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDH-CJS, DDS-CJS, DDR-CJS, DDA-CJS, DDO-CJS, DDY-CJS, DDG-CJS, DDP-CJS	1.6	1.9	2.3	12
DDS-SJS, DDR-SJS, DDA-SJS, DDO-SJS, DDY-SJS, DDG-SJS, DDP-SJS	1.6	1.8	2.3	12
DDR-TJS, DDY-TJS	1.6	2.1	2.6	12

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

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	30	mA
Peak pulse current; ($t_p \leq 10\mu s$, Duty cycle = 0.005)	DDx-SJS/DDx-TJS : 1000 DDx-CJS : 500	mA
Reverse voltage	12	V
ESD threshold (HBM)	2	kV
LED junction temperature	125	°C
Operating temperature	-40 ... +100	°C
Storage temperature	-40 ... +100	°C
Power dissipation (at room temperature)	75	mW
Thermal resistance		
- Junction / ambient, $R_{th JA}$	500	K/W
- Junction / solder point, $R_{th JS}$	280	K/W
(Mounting on FR4 PCB, pad size $\geq 16 \text{ mm}^2$ per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	$TC_{\lambda_{dom}}$ (typ)	DDR-CJS, DDR-SJS	0.03	nm / K
		DDS-CJS, DDS-SJS	0.01	
		DDO-CJS, DDO-SJS	0.04	
		DDY-CJS, DDY-SJS	0.09	
		DDA-CJS, DDA-SJS	0.05	
		DDG-CJS, DDG-SJS	0.10	
		DDH-CJS	0.01	
		DDR-TJS	0.02	
		DDY-TJS	0.09	
		DDP-SJS	0.10	
Temperature coefficient of V_F (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	TC_V	DDR-CJS, DDR-SJS	-4.3	mV / K
		DDS-CJS, DDS-SJS	-2.3	
		DDO-CJS, DDO-SJS	-1.6	
		DDY-CJS, DDY-SJS	-3.3	
		DDA-CJS, DDA-SJS	-3.2	
		DDG-CJS, DDG-SJS	-0.2	
		DDH-CJS	-1.6	
		DDR-TJS	-2.0	
		DDY-TJS	-1.6	
		DDP-SJS	-0.2	
Temperature coefficient of I_V (typ) $I_F = 20\text{mA}; 0^\circ\text{C} \leq T \leq 100^\circ\text{C}$	TC_{IV}	DDR-CJS, DDR-SJS	-0.59	% / K
		DDS-CJS, DDS-SJS	-0.52	
		DDO-CJS, DDO-SJS	-0.62	
		DDY-CJS, DDY-SJS	-1.05	
		DDA-CJS, DDA-SJS	-0.60	
		DDG-CJS, DDG-SJS	-1.20	
		DDH-CJS	-0.45	
		DDR-TJS	-0.62	
		DDY-TJS	-1.10	
		DDP-SJS	-1.17	

Wavelength Grouping at Tj=25°C

Color	Group	Wavelength distribution (nm)
DDH; Hyper-red	Full	636 - 646
DDS; Super-red	Full	625 - 640
DDR-CJ, -SJ; Red (AS)	Full	620 - 630
DDR-TJ; Red (TS)	Full	620 - 635
DDA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
DDO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
DDY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594
DDG; Green	Full	564.5 - 576.5
	W	564.5 - 567.5
	X	567.5 - 570.5
	Y	570.5 - 573.5
	Z	573.5 - 576.5
DDP; Pure Green	Full	552.5 - 564.5
	W	552.5 - 555.5
	X	555.5 - 558.5
	Y	558.5 - 561.5
	Z	561.5 - 564.5

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

Luminous Intensity Group at Tj=25°C

Brightness Group	Luminous Intensity IV (mcd)
L1	11.2...14.0
L2	14.0...18.0
M1	18.0...22.4
M2	22.4...28.5
N1	28.5...35.5
N2	35.5...45.0
P1	45.0...56.0
P2	56.0...71.5
Q1	71.5...90.0
Q2	90.0...112.5
R1	112.5...140.0
R2	140.0...180.0
S1	180.0...224.0
S2	224.0...285.0
T1	285.0...355.0
T2	355.0...450.0
U1	450.0...560.0
U2	560.0...715.0

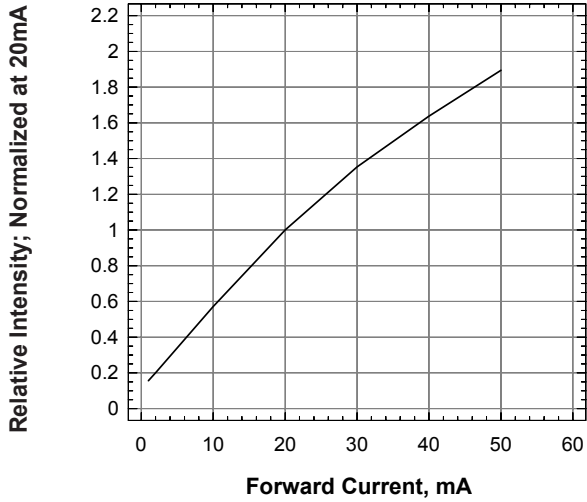
Luminous intensity is measured with an accuracy of $\pm 11\%$.

Vf Binning (Optional) at Tj= 25°C

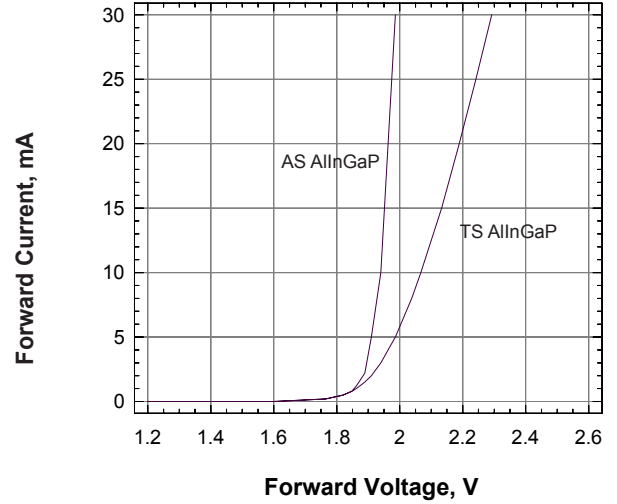
Vf Bin @ 20mA	Forward Voltage (V)
01	1.55 ... 1.85
02	1.85 ... 2.15
03	2.15 ... 2.45
04	2.45 ... 2.75

Forward voltage, Vf is measured with an accuracy of ± 0.1 V.
Please consult sales & marketing for special part number to incorporate Vf binning.

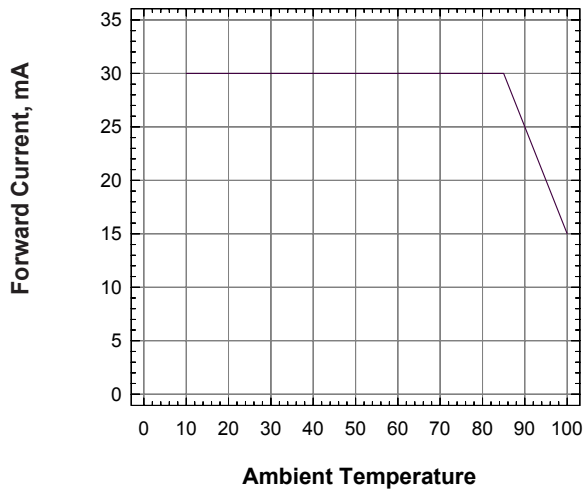
Relative Luminous Intensity Vs Forward Current



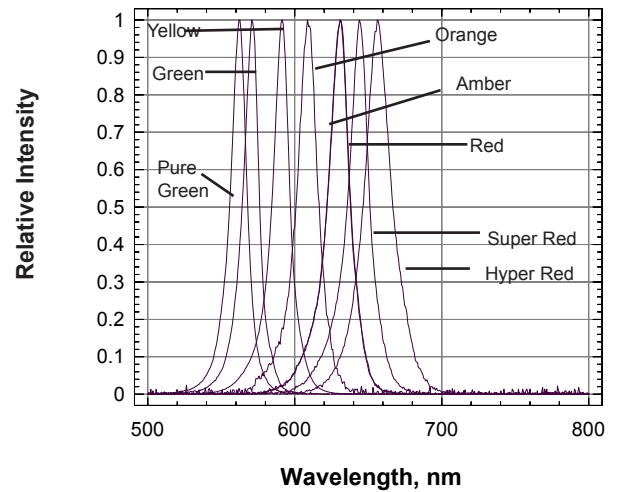
Forward Current Vs Forward Voltage



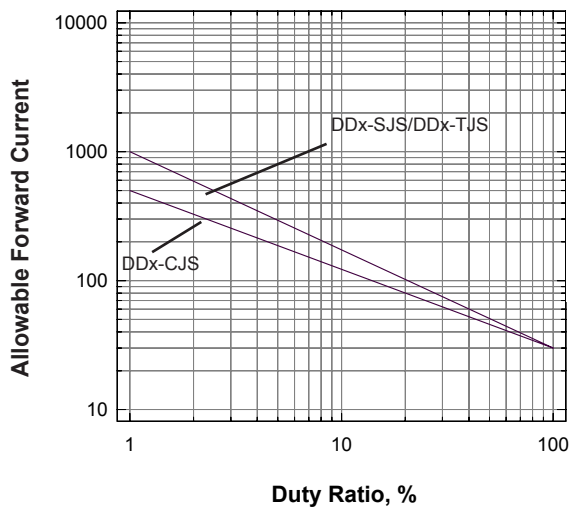
Maximum Current Vs Temperature



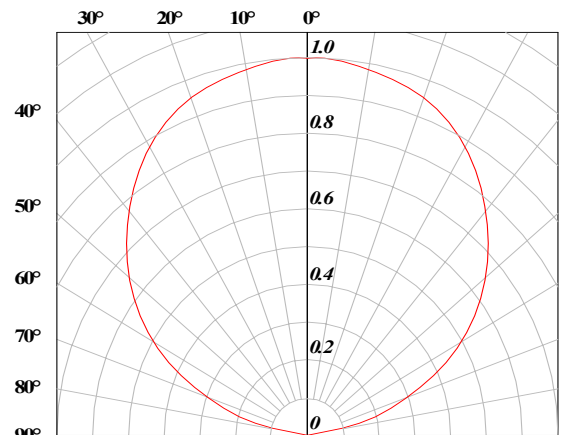
Relative Intensity Vs Wavelength



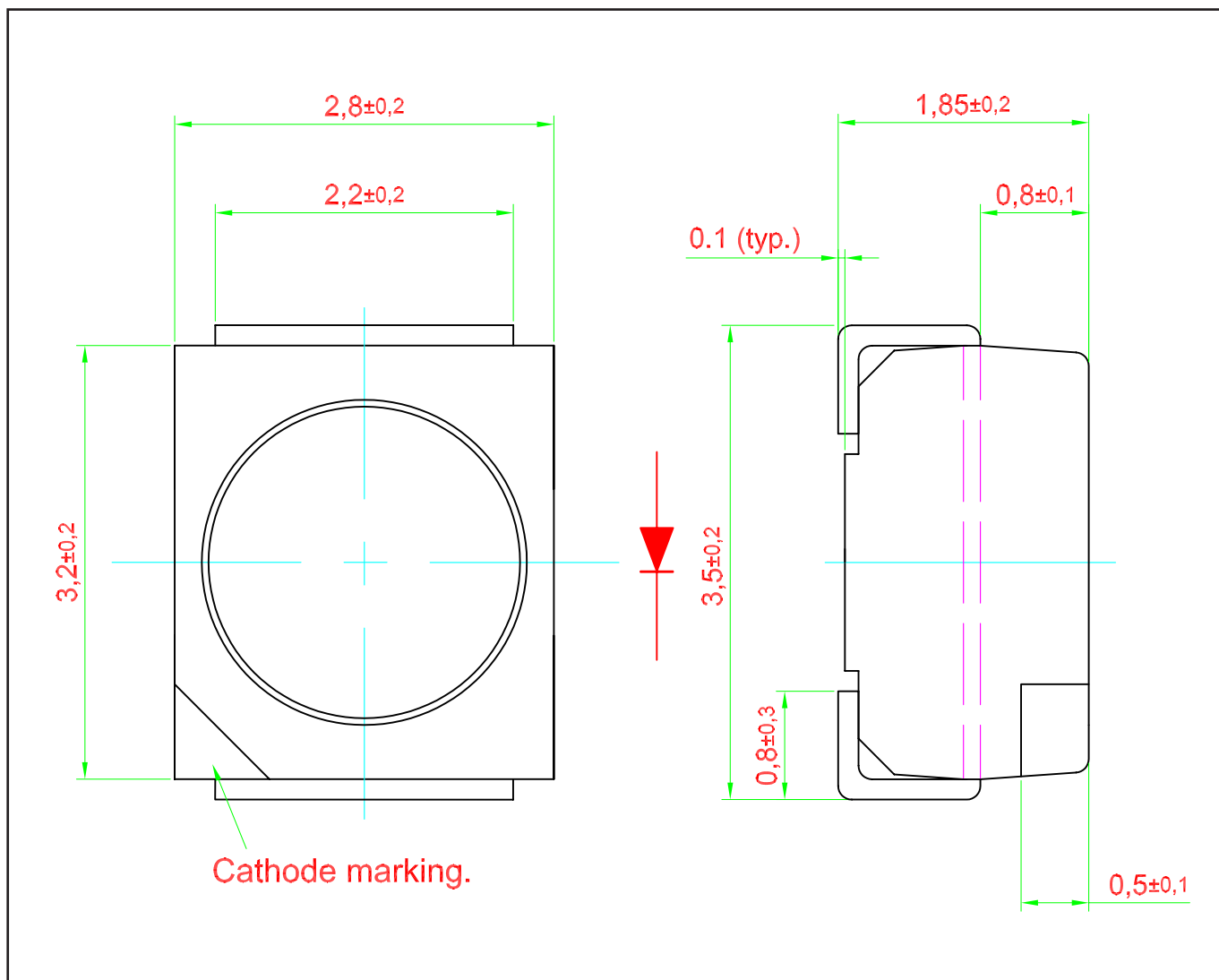
Allowable Forward Current Vs Duty Ratio (Ta= 25 Deg C)



Radiation Pattern



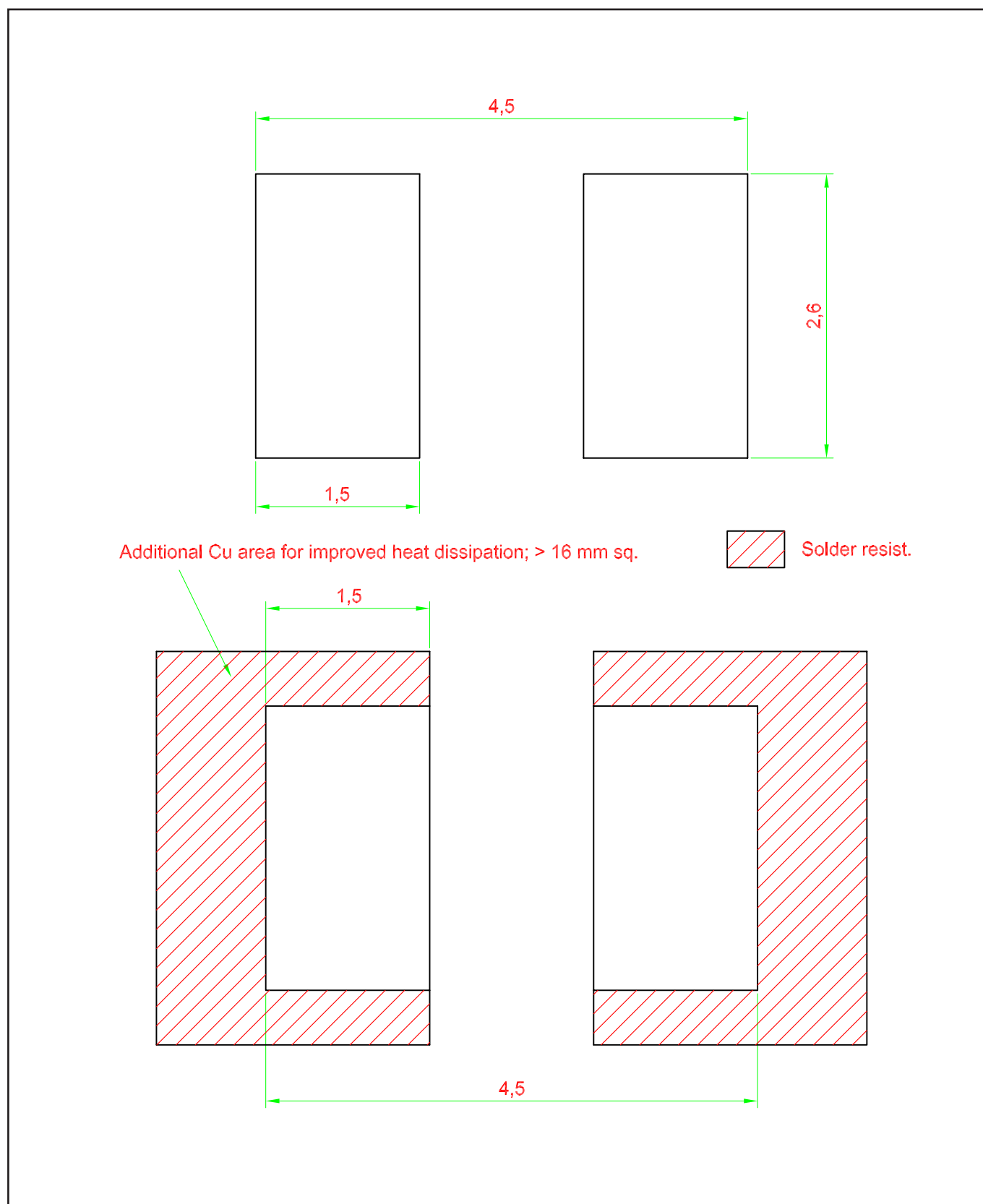
DomiLED™ • AlInGaP : DDx-xJS Package Outlines



Material

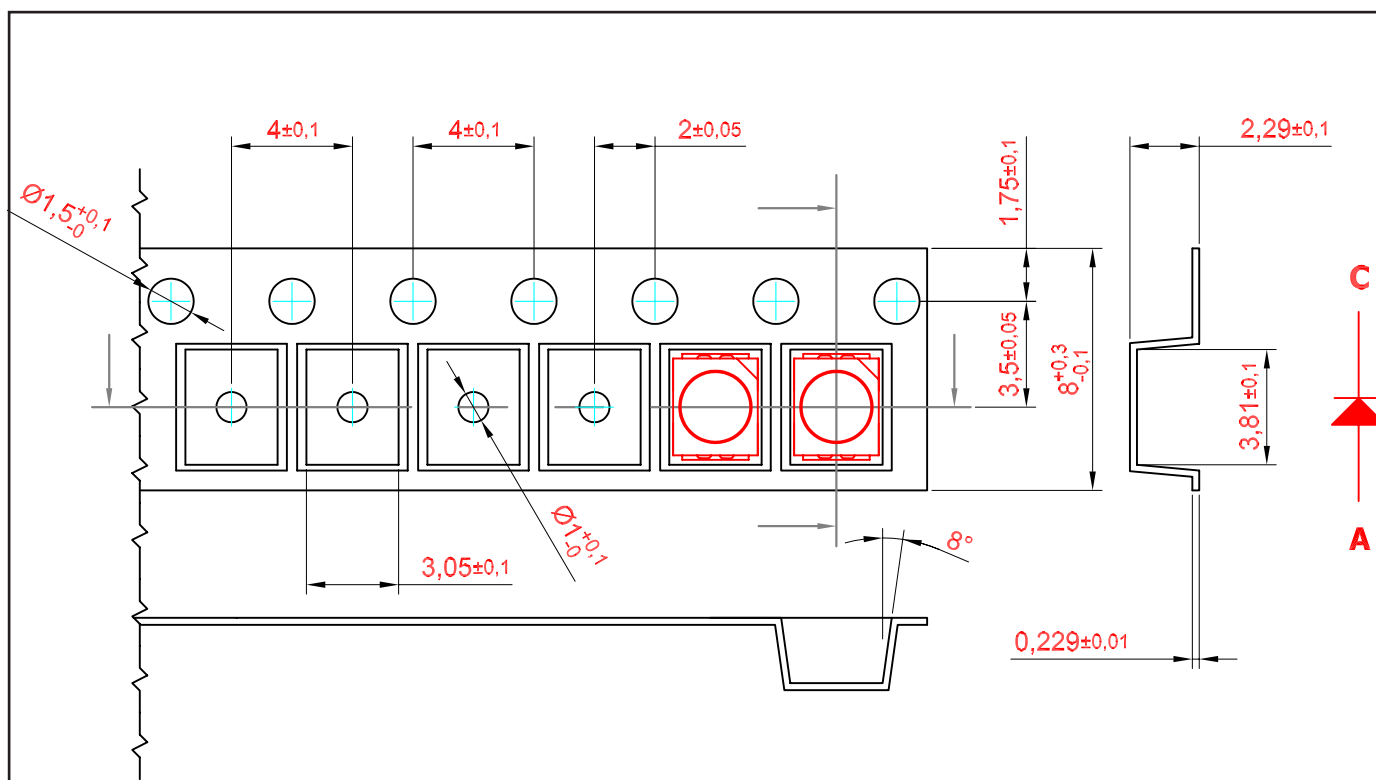
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad



Taping and orientation

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

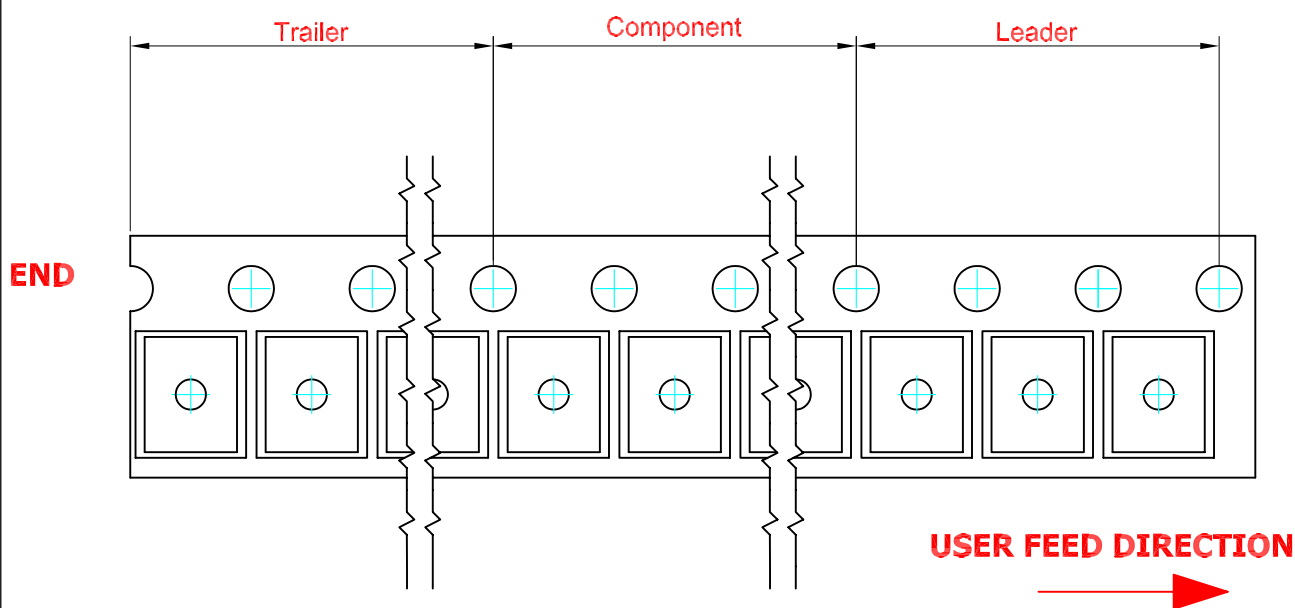


200 mm min. for $\varnothing 180$ reel.

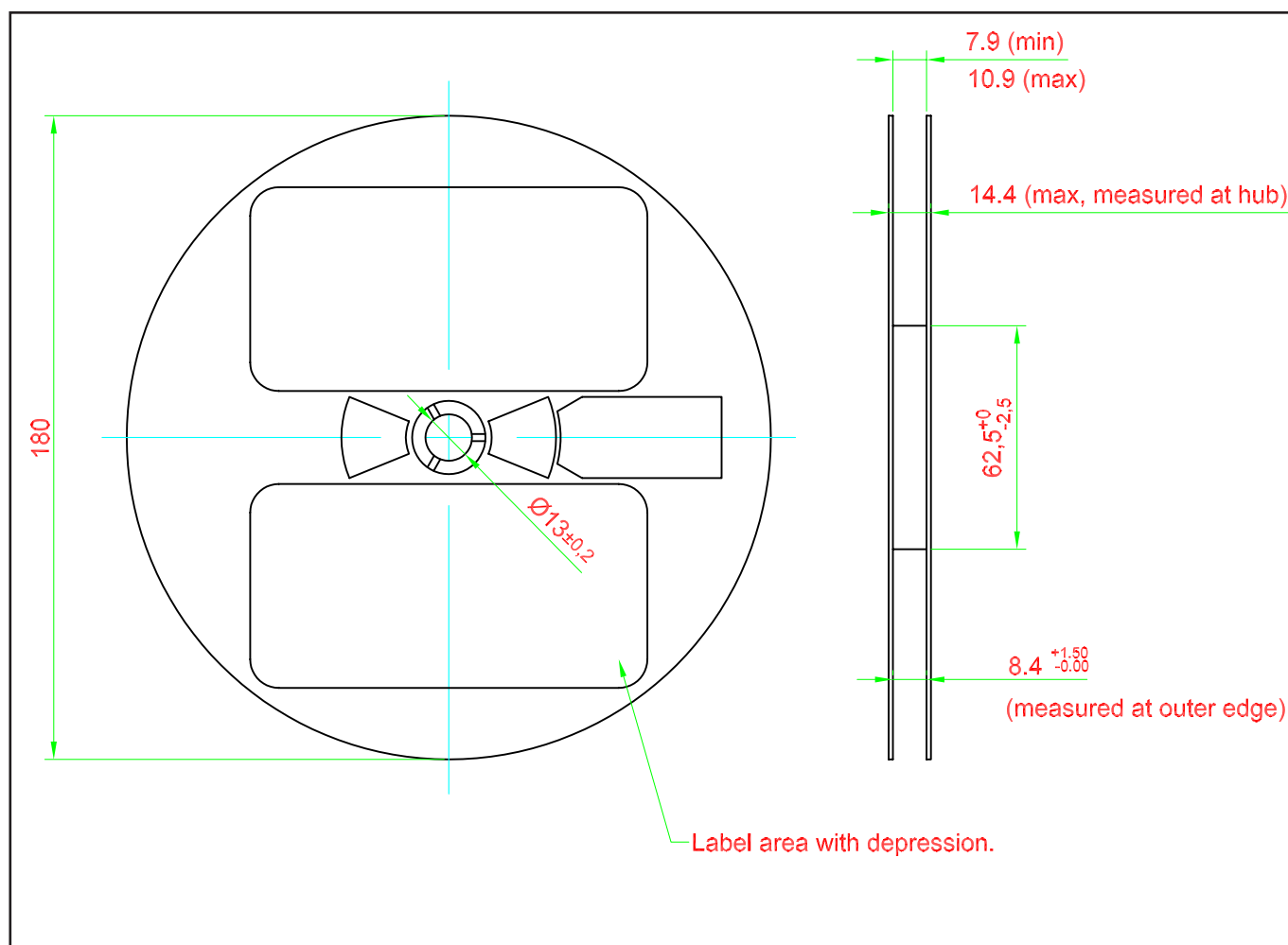
480 mm min. for $\varnothing 180$ reel.

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

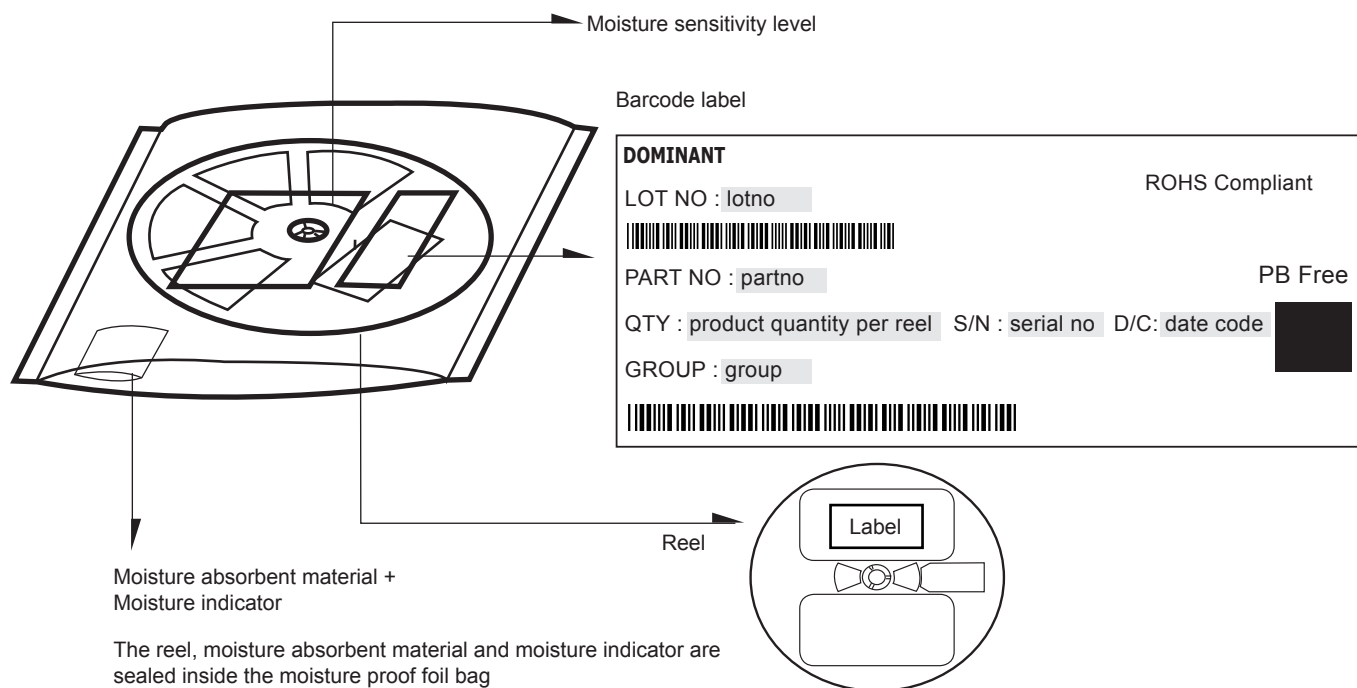
960 mm min. for $\varnothing 330$ reel.



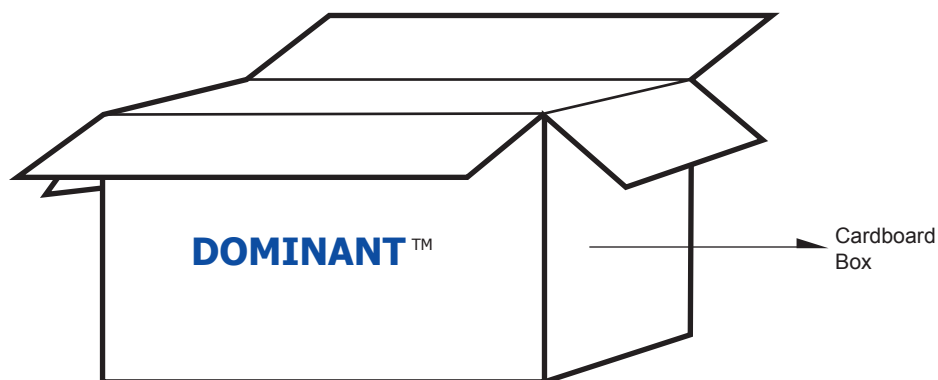
Packaging Specification



Packaging Specification



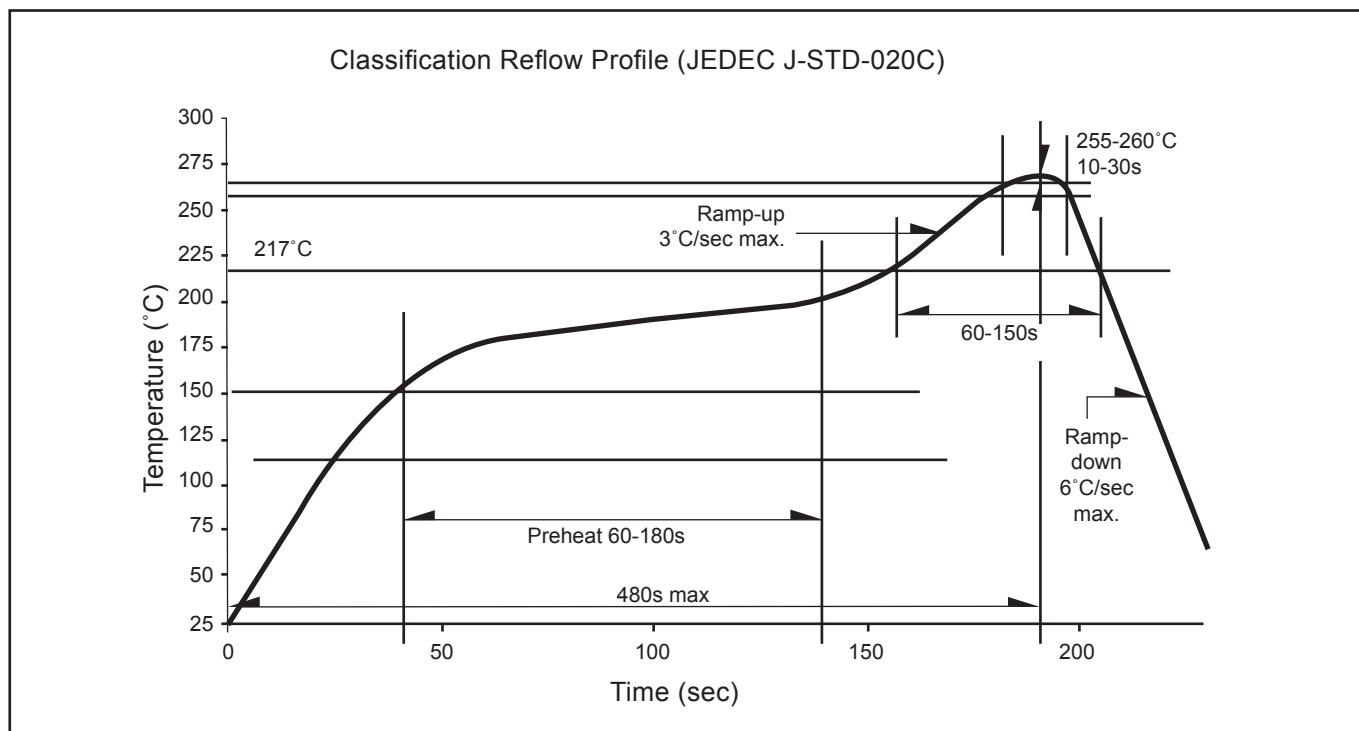
	Average 1pc DomiLED/Multi DomiLED	1 completed bag (2000pcs)
Weight (gram)	0.034	190 ± 10



For 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
2	Add new partno: DDR-CJS-ST1-1	13 Jun 2008
2	Add new partno: DDG-CJS-QR2-1 Not for new design : DDS-SJS-QR2-1; DDR-SJS-RS2-1; DDA-SJS-ST2-1; DDO-SJS-ST2-1; DDY-SJS-ST2-1; DDG-SJS-QR2-1	07 Apr 2009
-	Update company name	31 May 2010
-	Add Vf min value	06 Aug 2010
2	Add new partno: DDP-CJS-LM2-1	30 Sep 2010
7	Update Relative Luminous Intensity Vs Forward Current	25 Nov 2011
4	Update Characteristics	18 Jun 2012
2	Add new partno: DDY-CJS-QR2-1 Not for new design: DDR-TJS-TU2-1, and DDY-TJS-TU2-1	10 Dec 2012
2	Add new partno: DDS-CJS-PQ2-1	03 Jan 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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