

### 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.
- > Compliance to AEC-Q101 Standard.



### 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 @ 2mA IV (mcd) <i>Appx. 1.1</i>		
			Min.	Typ.	Max.
DDS-CJS-J2L1-1-I2	Super-red, 632nm	120	5.60	9.00	14.00
DDR-CJS-LM2-1-I2	Red, 625nm	120	11.20	18.00	28.50
DDO-CJS-KL2-1-I2	Orange, 605nm	120	7.20	11.20	18.00
DDO-CJS-LM2-1-I2	Orange, 605nm	120	11.20	18.00	28.50
●DDY-CJS-KL2-1-I2	Yellow, 587nm	120	7.20	11.20	18.00
DDY-CJS-LM2-1-I2	Yellow, 587nm	120	11.20	18.00	28.50
DDG-CJS-HJ2-1-I2	Green, 572nm	120	2.80	4.50	7.20
DDP-SJS-FG1-1-I2	Pure Green, 560nm	120	1.10	1.40	2.24

● Not for new design

**Electrical Characteristics at Tj=25°C**

Part Number	Vf @ If = 2mA <i>Appx. 3.1</i>			Vr @ Ir = 10uA <i>Appx. 6.1</i>
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DDS, DDR, DDO, DDY, DDG, DDP	1.6	1.8	2.2	12

## Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current; (tp ≤ 10μs, Duty cycle = 0.1)	100	mA
Reverse voltage <i>Appx. 6.1</i>	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)	45	mW

## Wavelength Grouping at Tj=25°C

Color	Group	Wavelength distribution (nm) <i>Appx. 2.2</i>
DDS; Super-red	Full	625.0 - 640.0
	W	625.0 - 630.0
DDR; Red	Full	600.0 - 612.0
	W	600.0 - 603.0
	X	603.0 - 606.0
	Y	606.0 - 609.0
	Z	609.0 - 612.0
	Full	582.0 - 594.0
DDY; Yellow	Full	582.0 - 594.0
	W	582.0 - 585.0
	X	585.0 - 588.0
	Y	588.0 - 591.0
	Z	591.0 - 594.0
	Full	564.5 - 576.5
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
	Full	552.5 - 564.5
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
	Full	552.5 - 564.5

**Luminous Intensity Group at Tj=25°C**

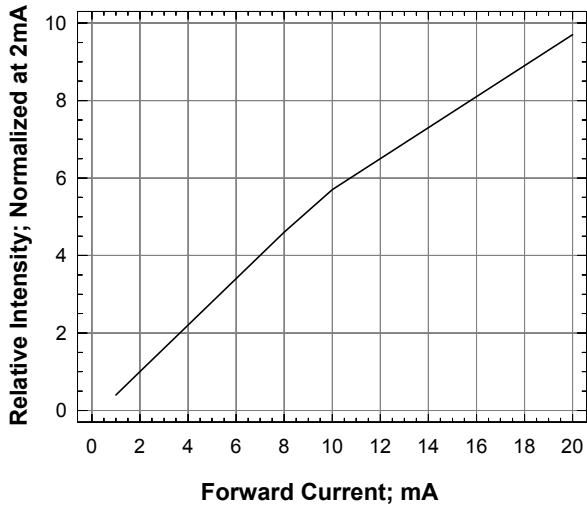
Brightness Group	Luminous Intensity IV (mcd) <small>Appx. 1.1</small>
F1	1.10...1.40
F2	1.40...1.80
G1	1.80...2.24
H1	2.80 ... 3.55
H2	3.55...4.50
J1	4.50...5.60
J2	5.60...7.20
K1	7.20...9.00
K2	9.00...11.20
L1	11.20...14.00
L2	14.00...18.00
M1	18.00...22.40
M2	22.40...28.50

**Vf Binning (Optional)**

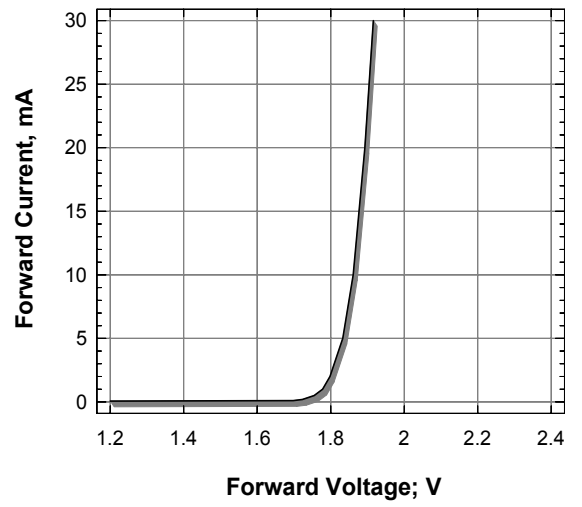
Vf Bin	Forward Voltage (V) <small>Appx. 3.1</small>
VA	1.60 ... 1.80
VB	1.80 ... 2.00
VC	2.00 ... 2.20

Please consult sales and marketing for special part number to incorporate Vf binning.

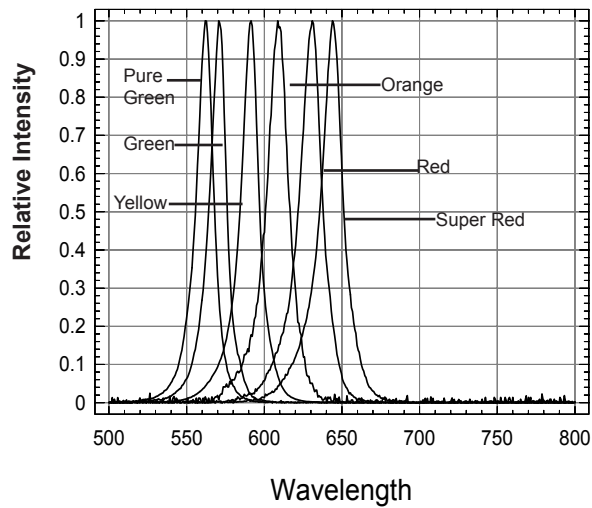
**Relative Intensity Vs Forward Current**



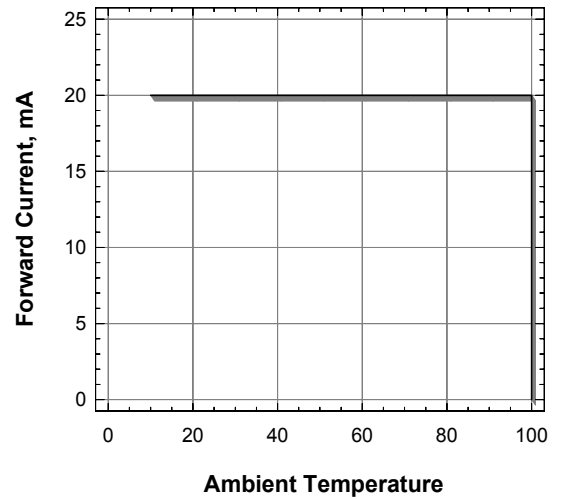
**Forward Current Vs Forward Voltage**



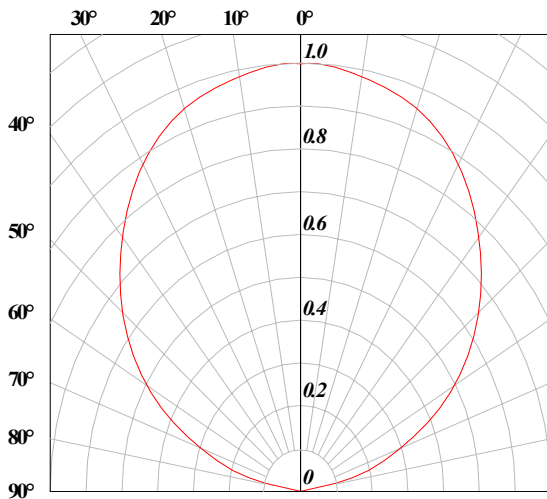
**Relative Intensity Vs Wavelength**



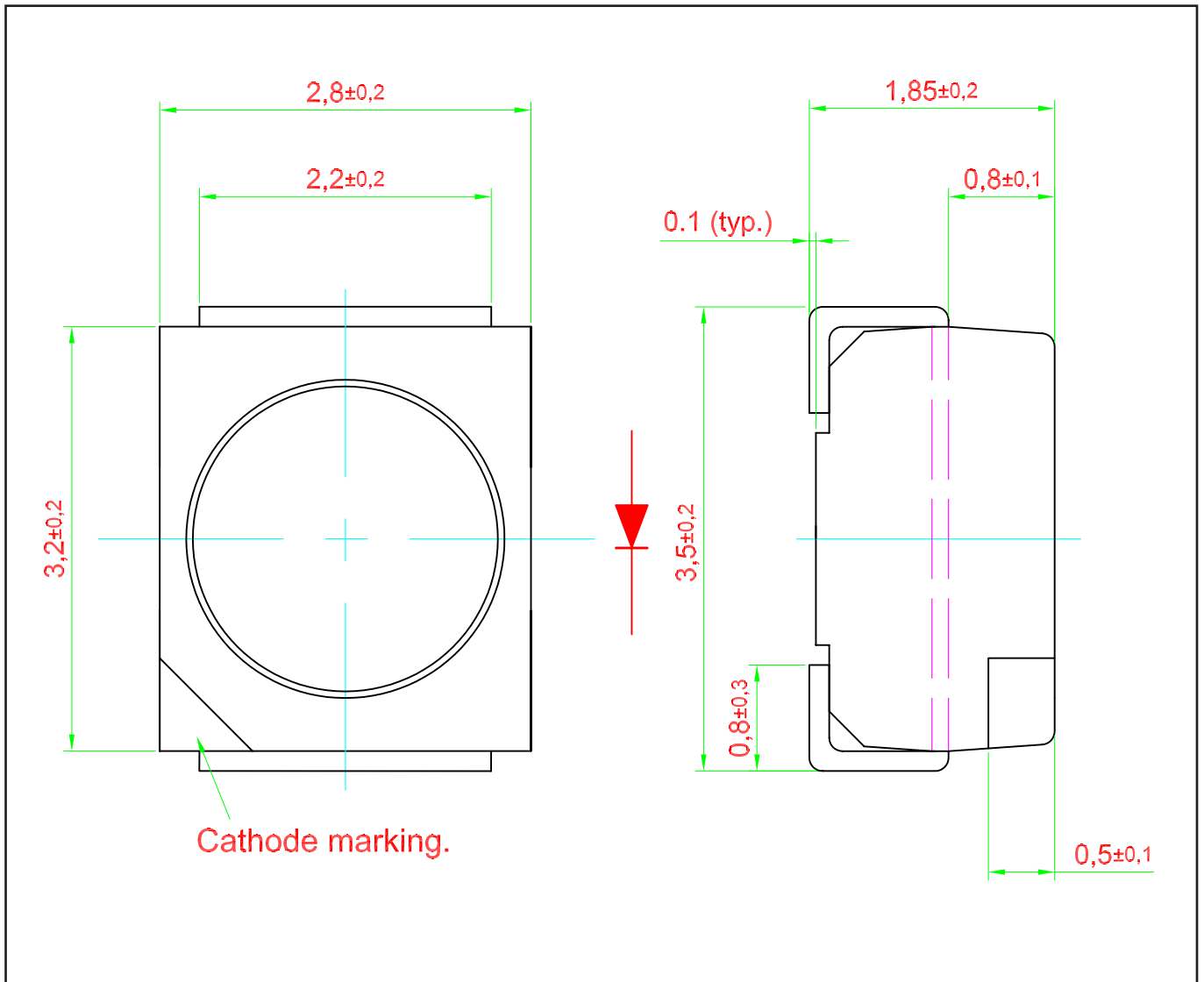
**Forward Current Vs Ambient Temperature**



**Radiation Pattern**



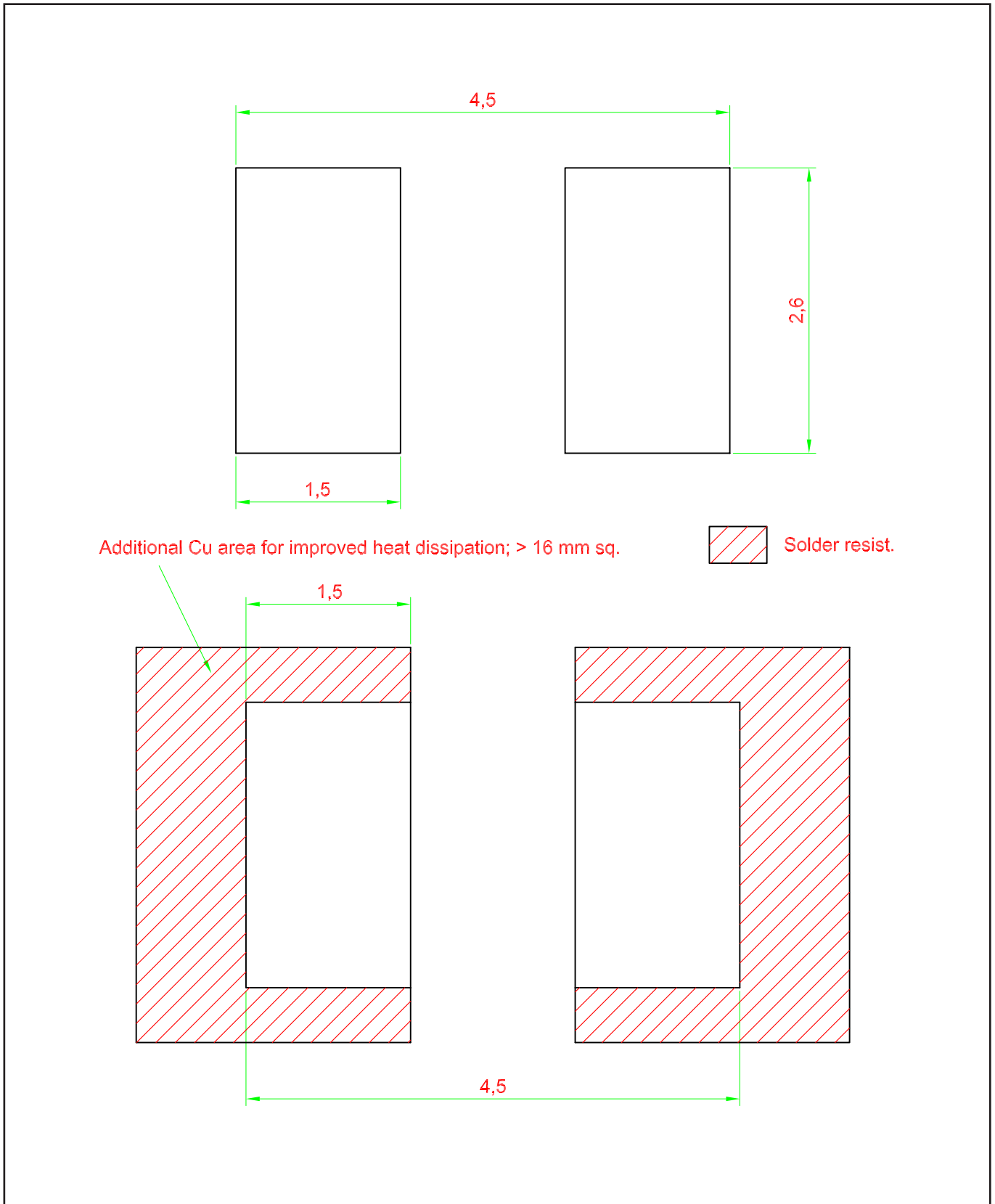
**DomiLED • AllnGaP : DDx-xJS-I2 Package Outlines**



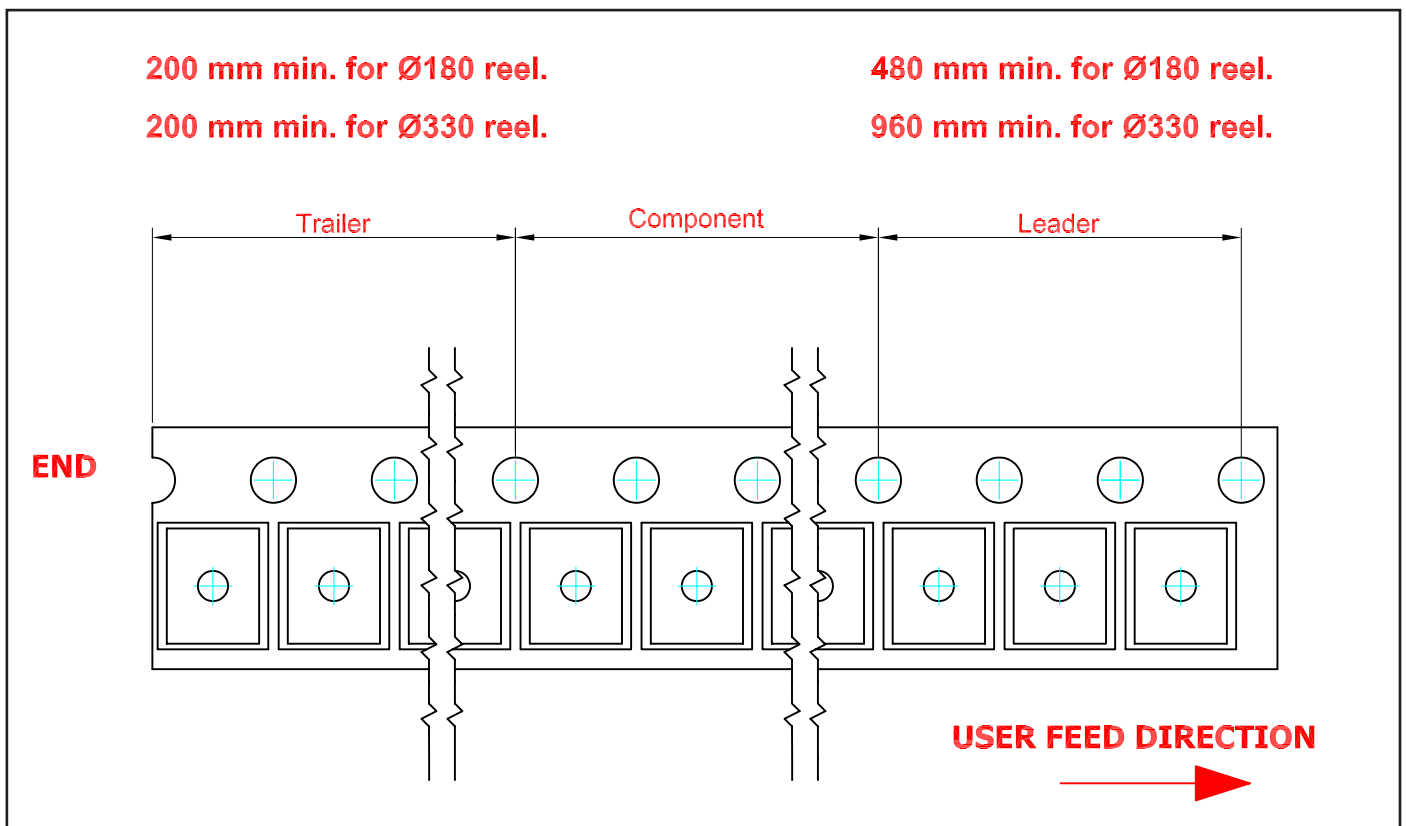
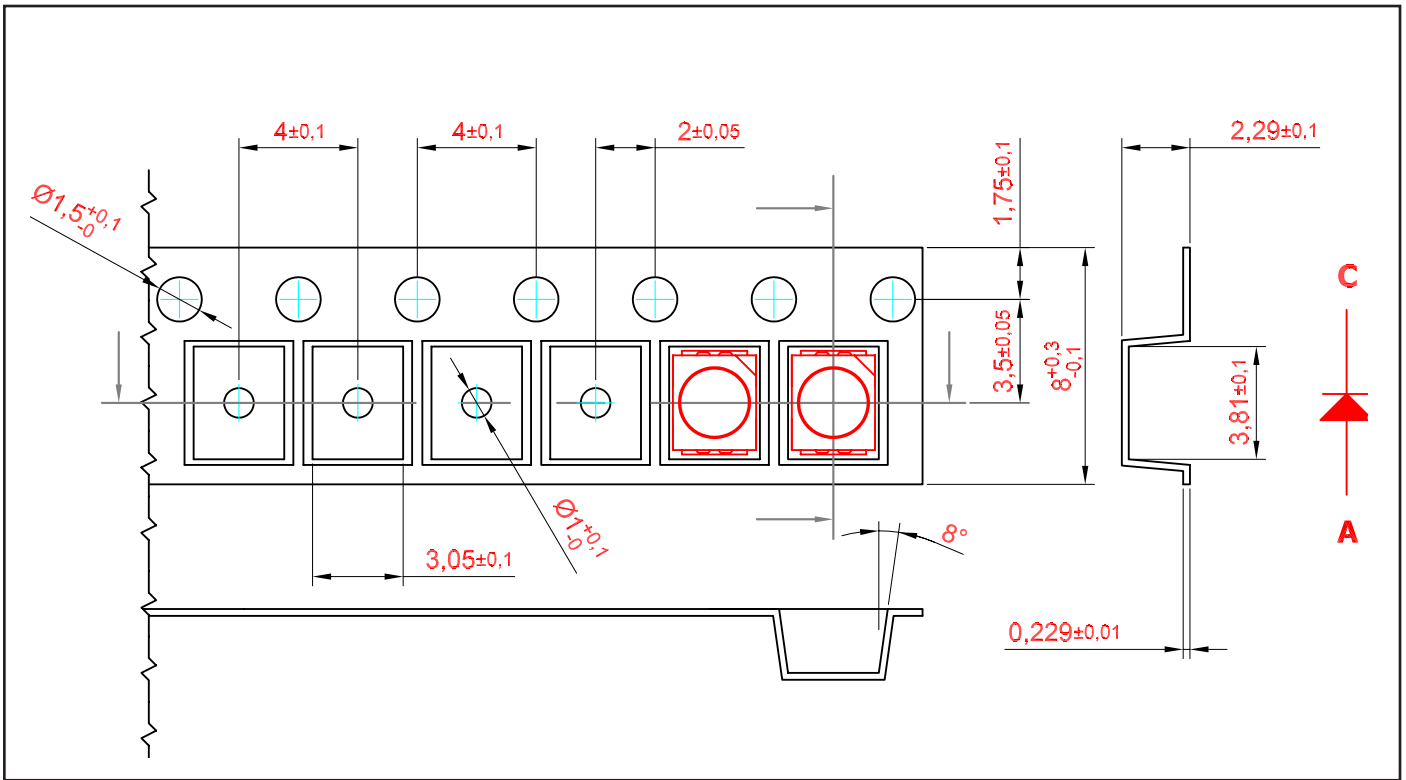
**Material**

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

### Recommended Solder Pad

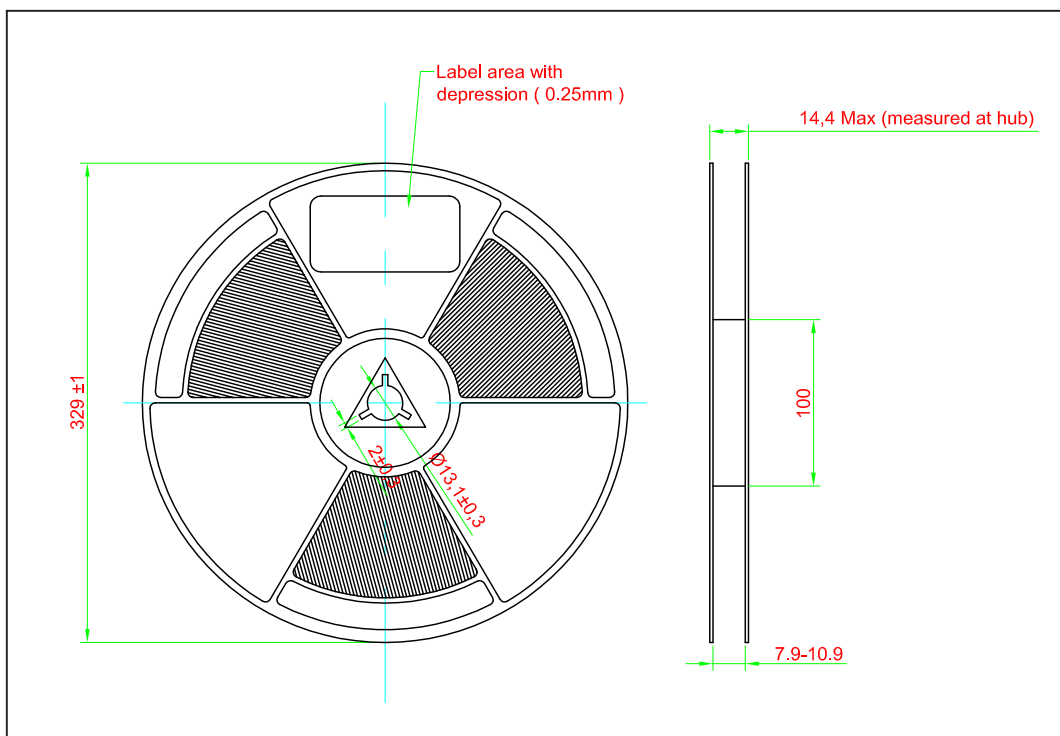
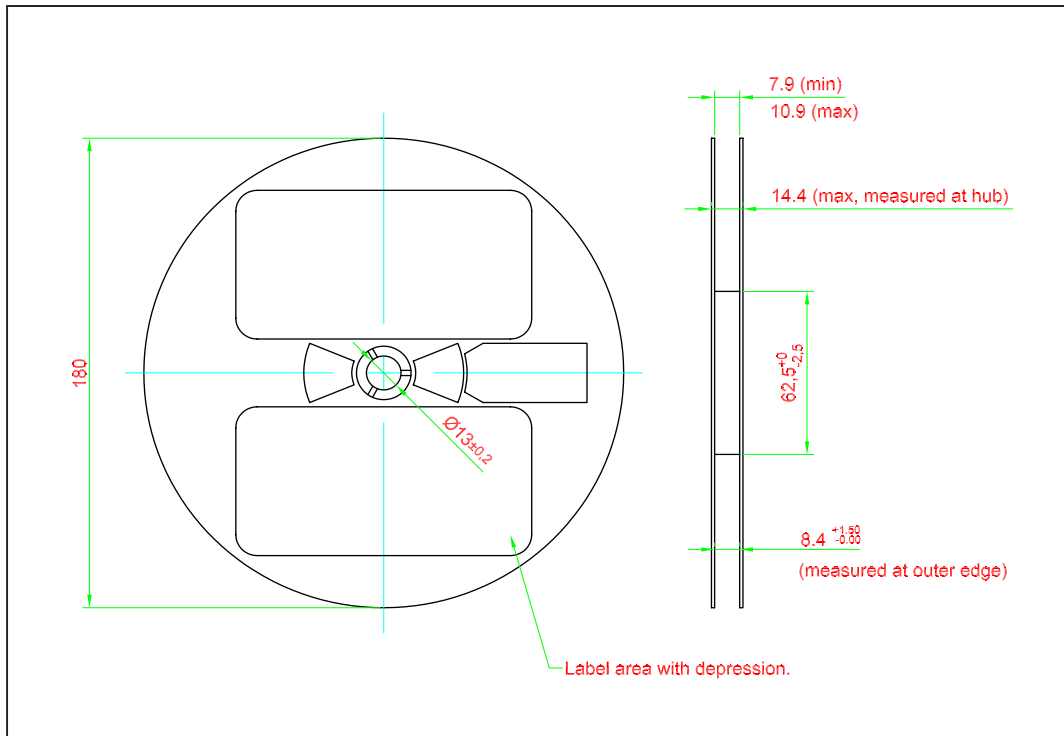


**Taping and orientation**



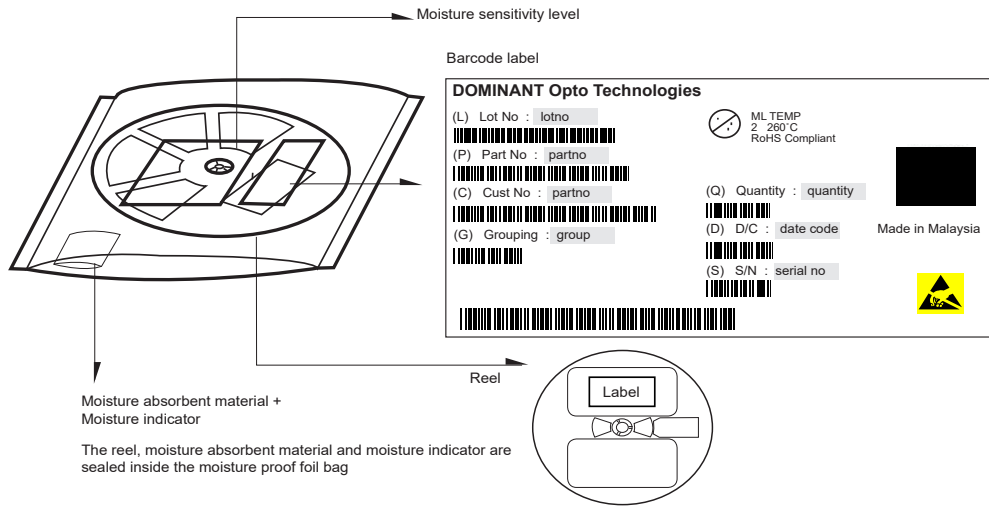


**Packaging Specification**

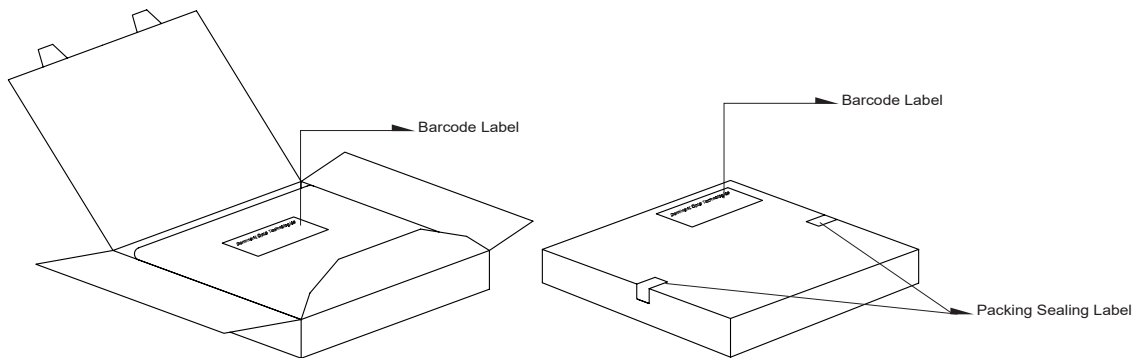


	Reel Diameter (mm)	Quantity (pcs)	Partno
Standard Packing	180	2000	DDx-xJS-xxx-x-x
Optional Packing	329	8000	DDx-xJS-xxx-x-x-8

**Packaging Specification**



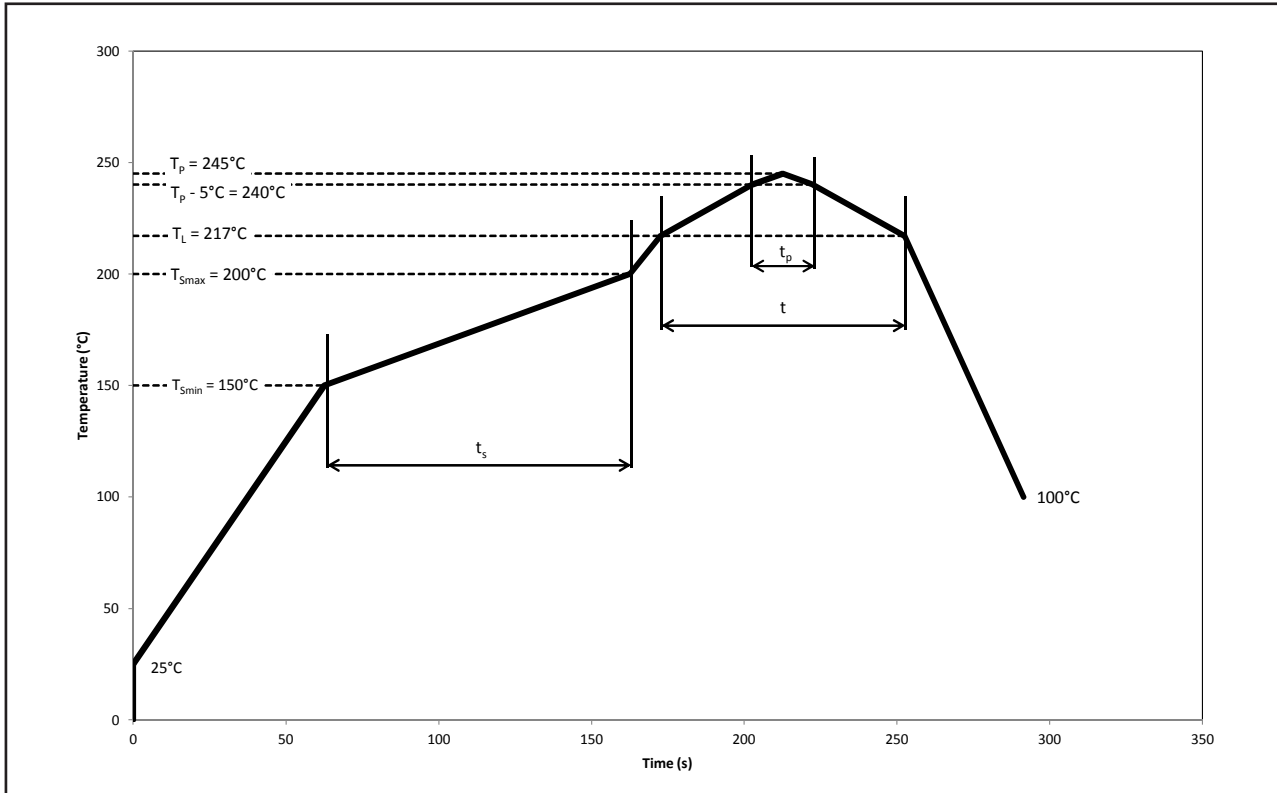
Quantity per bag (pcs)	Average 1pc DomiLED (gram)	1 completed bag (gram)
2000	0.034	240 ± 10
8000	0.034	750 ± 10



Reel Diameter (mm)	Packing Box Dimensions (mm)
180	210 x 210 x 16
329	345 x 345 x 16

## Recommended Pb-free Soldering Profile

Product complies to MSL Level 2 acc. to JEDEC J-STD-020E



Profile Feature	Symbol	Pb-Free Assembly			Unit
		Min.	Recommended	Max.	
Ramp-up rate to preheat 25°C to $T_{Smin}$	-	-	2	3	°C/s
Time $t_s$ $T_{Smin}$ to $T_{Smax}$	$t_s$	60	100	120	s
Ramp-up rate to peak $T_L$ to $T_p$	-	-	2	3	°C/s
Liquidous temperature	$T_L$	-	217	-	°C
Time above liquidous temperature	$t$	60	80	150	s
Peak temperature	$T_p$	-	245	260	°C
Time within 5°C of the specified peak temperature $T_p - 5^\circ\text{C}$	$T_p$	10	20	30	s
Ramp-down rate $T_p$ to 100°C	-	-	3	6	°C/s
Time 25°C to $T_p$	-	-	-	480	s

## Appendix

### 1) **Brightness:**

- 1.1 Luminous intensity is measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 8\%$  and an expanded uncertainty of  $\pm 11\%$  (according to GUM with a coverage factor of  $k=3$ ).
- 1.2 Luminous flux is measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 8\%$  and an expanded uncertainty of  $\pm 11\%$  (according to GUM with a coverage factor of  $k=3$ ).
- 1.3 Radiant intensity is measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 8\%$  and an expanded uncertainty of  $\pm 11\%$  (according to GUM with a coverage factor of  $k=3$ ).
- 1.4 Radiant flux is measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 8\%$  and an expanded uncertainty of  $\pm 11\%$  (according to GUM with a coverage factor of  $k=3$ ).

### 2) **Color:**

- 2.1 Chromaticity coordinate groups are measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 0.005$  and an expanded uncertainty of  $\pm 0.01$  (accordingly to GUM with a coverage factor of  $k=3$ ).
- 2.2 Dominant wavelength is measured at current pulse 25 ms(typ) with an internal reproducibility of  $\pm 0.5\text{nm}$  and an expanded uncertainty of  $\pm 1\text{nm}$  (accordingly to GUM with a coverage factor of  $k=3$ ).

### 3) **Voltage:**

- 3.1 Forward Voltage,  $V_f$  is measured when a current pulse of 8 ms(typ) with an internal reproducibility of  $\pm 0.05\text{V}$  and an expanded uncertainty of  $\pm 0.1\text{V}$  (accordingly to GUM with a coverage factor of  $k=3$ ).

### 4) **Typical Values:**

- 4.1 At special conditions of LED manufacturing processes, typical data or calculated correlations of technical parameters only reflect the statistical figures. But not necessarily correspond to the actual parameters of each single product, which could differ from the typical data or calculated correlations or the typical characteristic line. These typical data may change whenever technical improvements happen.

### 5) **Tolerance of Measure**

- 5.1 Unless otherwise noted in drawing, tolerances are specified with  $\pm 0.1$  and dimension are specific in mm.

### 6) **Reverse Voltage:**

- 6.1 Not designed for reverse operation. Continuous reverse voltage can cause migration and LED damage.

**Revision History**

<b>Page</b>	<b>Subjects</b>	<b>Date of Modification</b>
-	New Format	06 Sep 2006
2	Add new partno: DDP-SJS-FG1-1-I2	26 Oct 2007
2	Add new partno: DDO-CJS-LM2-1-I2	28 Nov 2007
2	Add new partno: DDR-CJS-LM2-1-I2	23 Apr 2009
2	Add new partno: DDY-CJS-LM2-1-I2 Not for new design: DDY-CJS-KL2-1-I2	27 Jul 2009
-	Update company name	31 May 2010
3	Add Vf binning option	03 Aug 2010
4	Add: “ Relative Luminous Intensity VS Forward Current “ graph	13 Apr 2011
2	Add new partno: DDG-CJS-HJ2-1-I2	30 Jun 2011
1, 5	Update Features Update Graph: Relative Intensity Vs Forward Current	14 Apr 2015
10	Update Package Specification	16 Oct 2015
9, 10, 11, 12	Update Packaging Specification Update Recommended Pb-free Soldering Profile Add Appendix	15 Sep 2021

**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 company that is amongst the world's leading automotive LED manufacturers. With an extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing and development capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Opto Technologies, an IATF 16949 and ISO 14001 certified company, can be found under <http://www.dominant-semi.com>.

### **Please contact us for more information:**

DOMINANT Opto Technologies 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)