DOMINANT™
Opto Technologies
Innovating Illumination

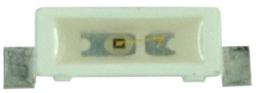
DATA SHEET:

Right Angle DomiLED

AlInGaP : DSx-ASS

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.
> Designed for sideway illumination.
> 120° viewing angle.
> Small package outline.
> Qualified according to JEDEC moisture sensitivity Level 2.
> Compatible to IR reflow soldering.
> Environmental friendly; RoHS compliance.
> Compliance to automotive standard; AEC-Q101.
> Superior corrosion resistant.

Applications:

> Automotive:
  Interior applications, eg: switches, telematics, climate control system, dash board, etc.
> Consumer Appliances: Backlighting illumination as in PDAs.

Optical Characteristics at Tj=25˚C

Part Number	Color	Viewing Angle˚	Luminous Intensity @ IF = 2mA IV (mcd) *Appx. 1.1*		
			Min.	Typ.	Max.
● DSS-ASS-J2L1-1	Super red, 632nm	120	5.60	9.00	14.00
● DSA-ASS-LM2-1	Amber, 615nm	120	11.20	18.00	28.50
● DSY-ASS-LM2-1	Yellow, 587nm	120	11.20	18.00	28.50
● DSG-ASS-H2K1-1	Green, 570nm	120	3.55	4.50	9.00

● Not for new design

Electrical Characteristics at Tj=25˚C

Part Number	Vf @ If = 2mA *Appx. 3.1*			Vr @ Ir = 10uA *Appx. 6.1*
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DSx-ASS	1.7	2.0	2.3	12

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current	20	mA
Peak pulse current	100	mA
Reverse voltage *Appx. 6.1*	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)	50	mW

Wavelength Grouping at Tj=25˚C

Color	Group	Wavelength distribution (nm) *Appx. 2.2*
DSS; Super red	Full	625 - 640
DSA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
DSY; Yellow	Full	582 - 594
	W	582 - 585
	X	585 - 588
	Y	588 - 591
	Z	591 - 594
DSG; 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

Luminous Intensity Group at Tj=25˚C

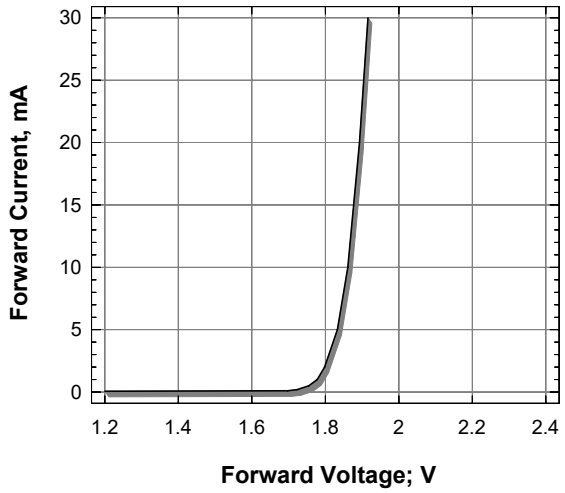
Brightness Group	Luminous Intensity *Appx. 1.1* IV (mcd)
H2	3.55...4.50
J1	4.50...5.60
J2	5.60...7.20
K1	7.20...9.00
K2	9.00...11.20
L1	11.20...14.00
L2	14.00...18.00
M1	18.00...22.40
M2	22.40...28.50

Vf Binning (Optional)

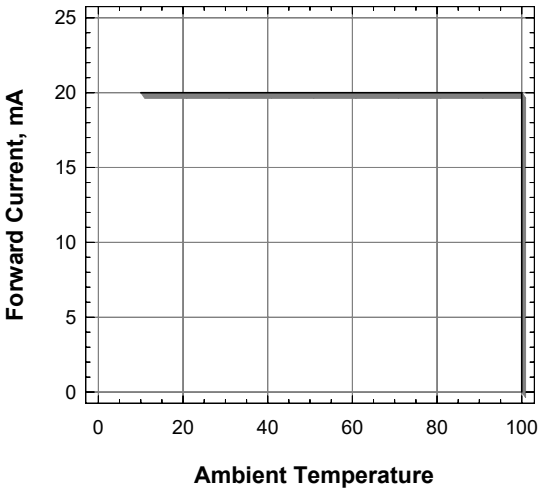
Vf Bin	Forward Voltage (V) *Appx. 3.1*
VA	1.60 ... 1.80
VB	1.80 ... 2.00
VC	2.00 ... 2.20

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

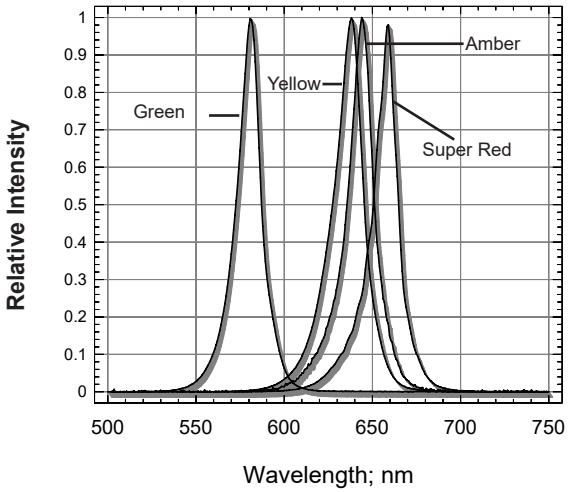
Forward Current Vs Forward Voltage



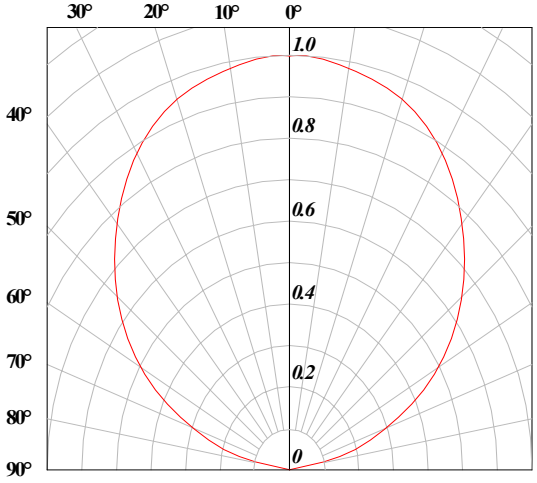
Forward Current Vs Ambient Temperature



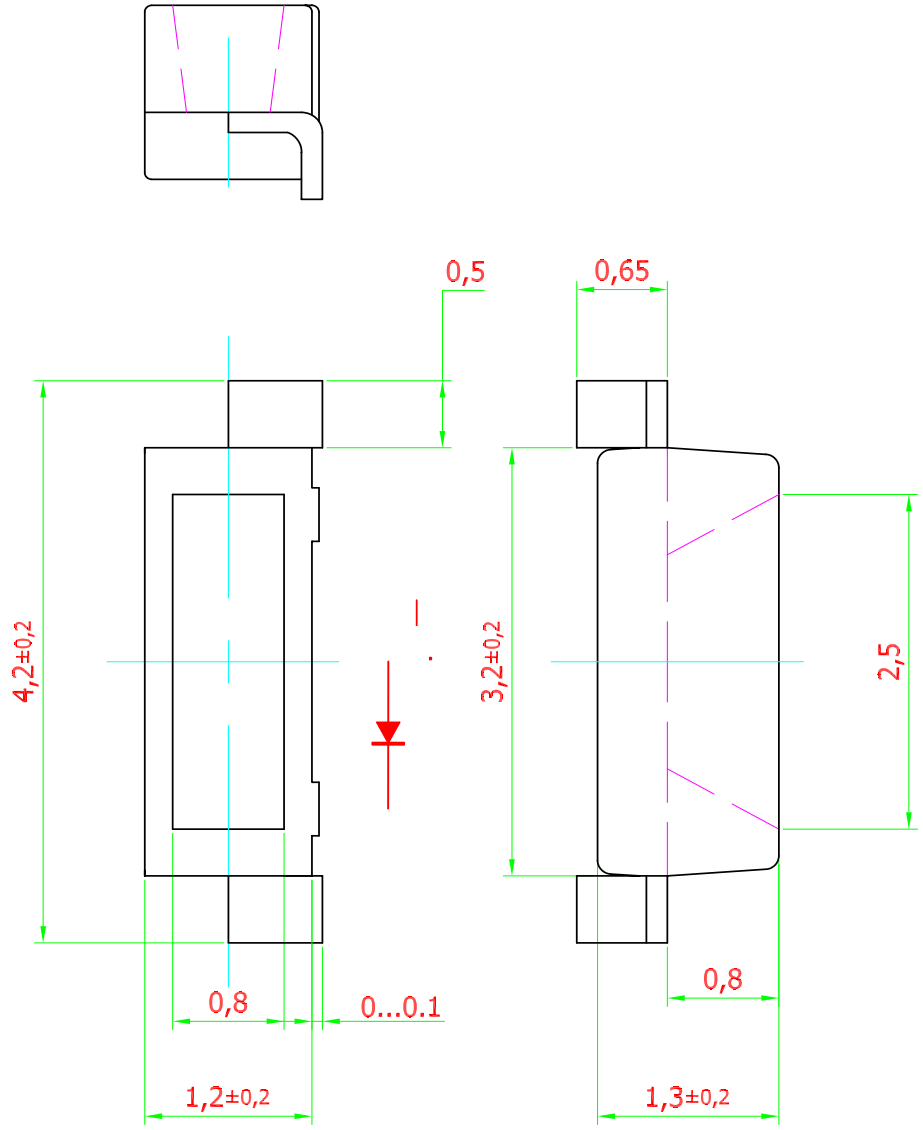
Relative Intensity Vs Wavelength



Radiation Pattern



Right Angle DomiLED • AlInGaP : DSx-ASS Package Outlines

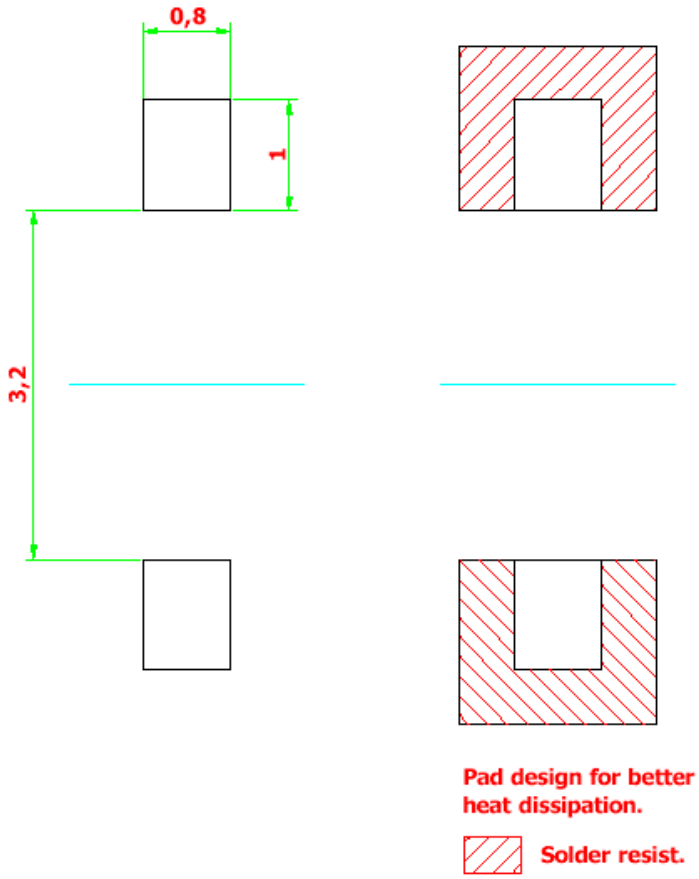


Notes: Primary thermal path is through Cathode lead of LED package

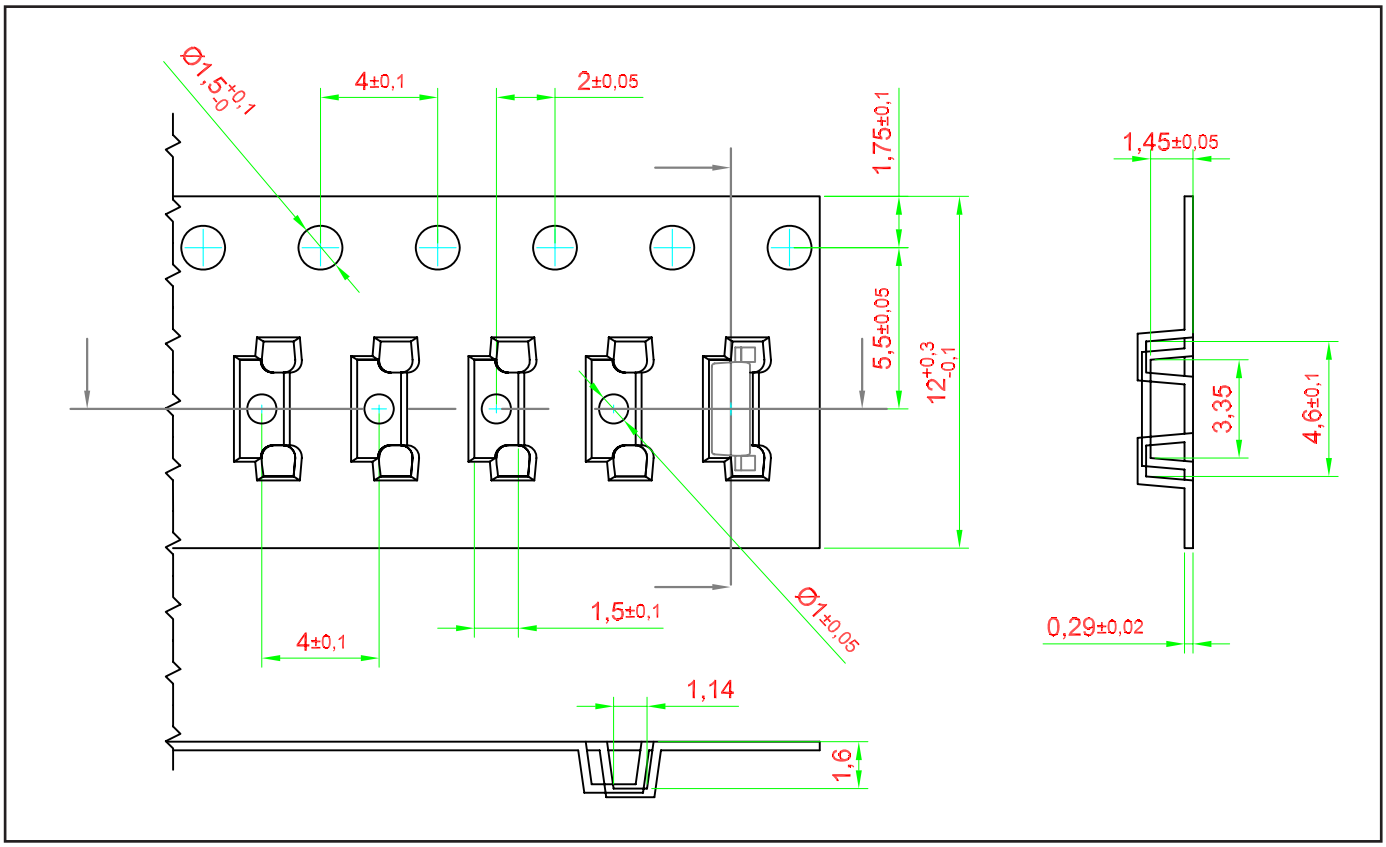
Material

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

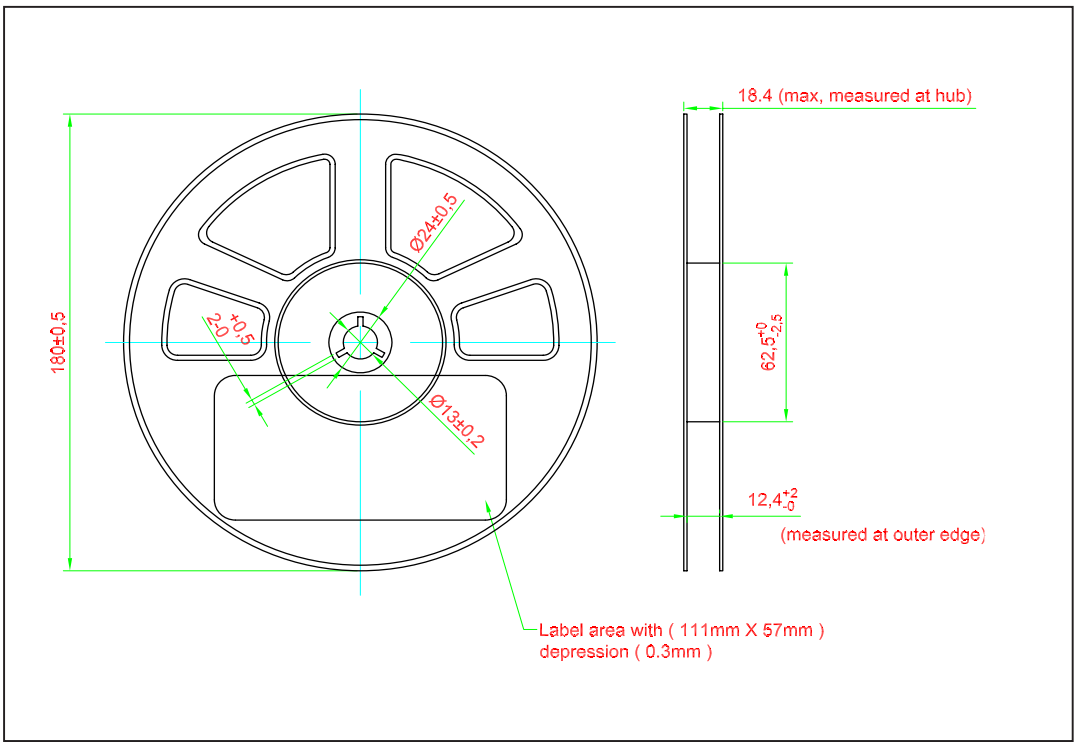
Recommended Solder Pad

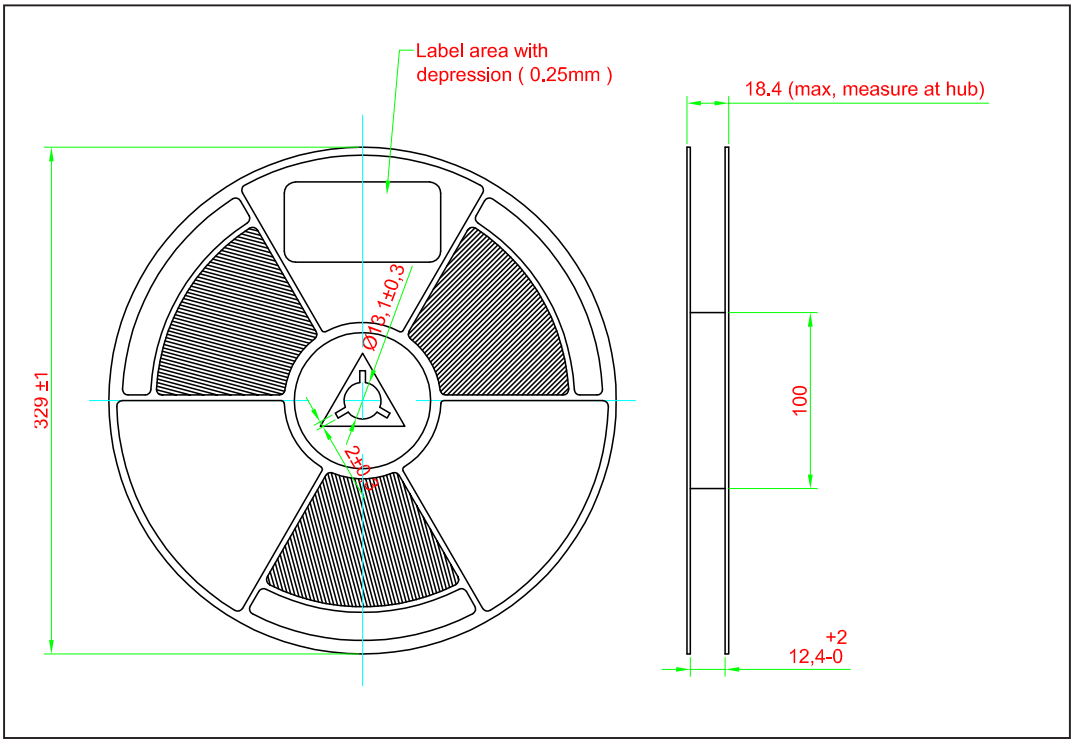


Taping and orientation



Packaging Specification



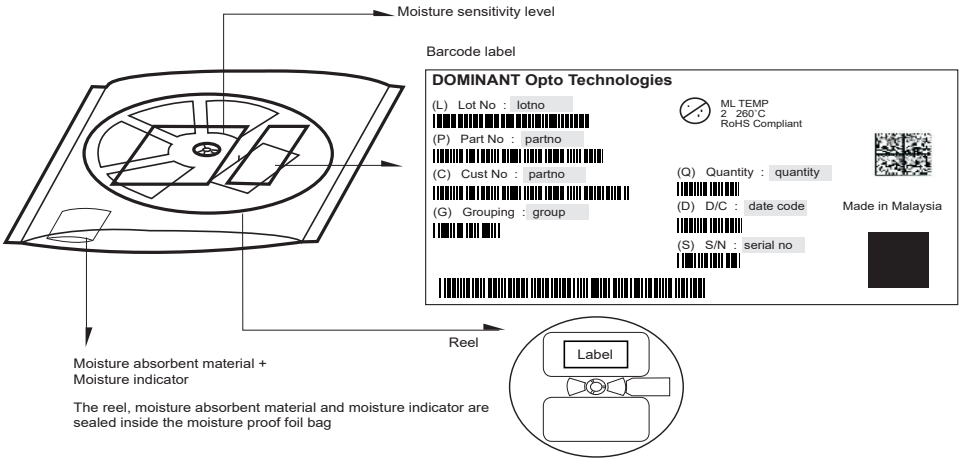


	Reel Diameter (mm)	Quantity (pcs)	*Ordering Number
Standard Packing	180	2500	DSx-ASS-xxx-x
Optional Packing	329	9000	DSx-ASS-xxx-x-9

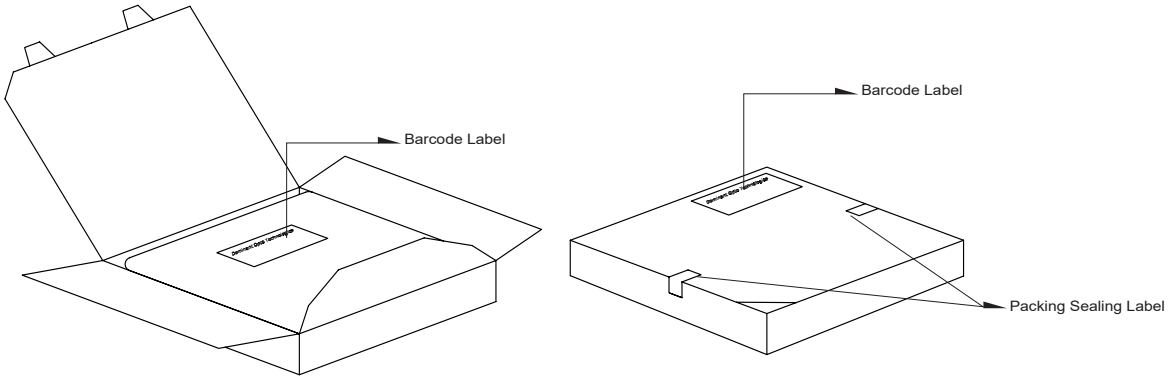
Notes:

* For ordering purpose only. Please consult sales and marketing for details.

Packaging Specification



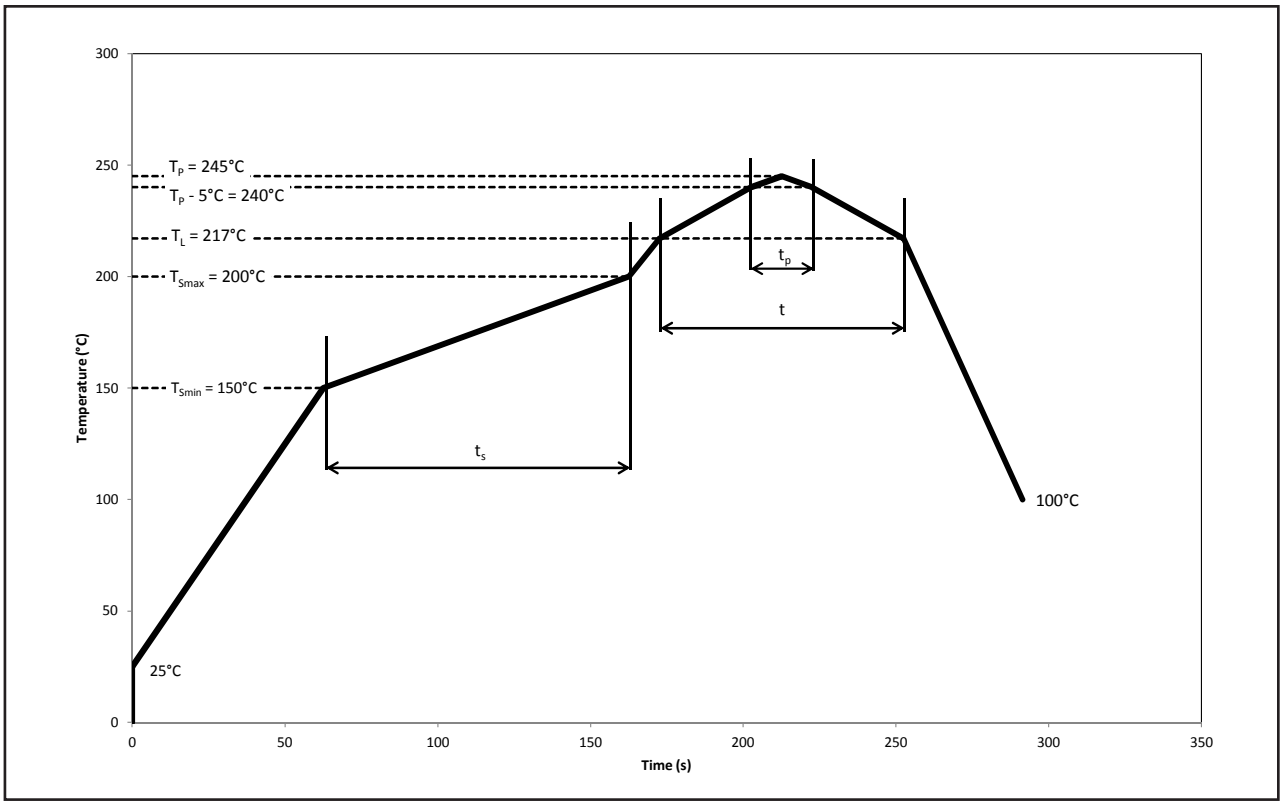
Quantity per bag (pcs)	Average 1pc Right Angle DomiLED (gram)	1 completed bag (gram)
2500	0.010	240 ± 10
9000	0.010	520 ± 10



Reel Diameter (mm)	Packing Box Dimensions (mm)
180	210 x 210 x 20
329	345 x 345 x 20

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°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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 8 % and an expanded uncertainty of ± 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 ± 0.005 and an expanded uncertainty of ± 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 ± 0.5nm and an expanded uncertainty of ± 1nm (accordingly to GUM with a coverage factor of k=3).

3) Voltage:

3.1 Forward Voltage, Vf is measured when a current pulse of 8 ms(typ) with an internal reproducibility of ± 0.05V and an expanded uncertainty of ± 0.1V (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 ± 0.1 and dimension are specifiec in mm.

6) Reverse Voltage:

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

Revision History

Page	Subjects	Date of Modification
-	Initial release	15 Jun 2010
1, 9	- Update product photo - Error in carrier tape	21 Jun 2012
6	Typo error on package outline	16 Oct 2013
1, 4, 6	Update Features Add Vf Binning Add Notes in Package Outline	05 Oct 2015
1, 8, 10	Add Features Update Carrier Tape Update Packaging Specification	10 Mar 2016
2, 9, 10, 11, 12	Not for New Design: DSS-ASS-J2L1-1, DSA-ASS-LM2-1, DSY-ASS-LM2-1, DSG-ASS-H2K1-1 Update Packaging Specification Update Recommended Pb-free Soldering Profile Add Appendix	18 May 2022

NOTE

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Dispose of product is in accordance with local, regional, national and international regulations.

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, a ISO/TS 16949 and ISO 14001 certified company, can be found under http://www.dominant-semi.com.

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