

**Carrier Tape Change for all Right Angle DomiLED DSx
Product Change Notice issued on 18 May 2015.**

DomiLEDTM

Synonymous with function and performance, the DomiLEDTM 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 sideways illumination.
- > 120° viewing angle.
- > Small package outline.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to IR reflow soldering.



Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).



Optical Characteristics at Tj=25°C

Part Ordering Number	Color	Viewing Angle°	Luminous Intensity @ IF = 20mA IV (mcd)		
			Min.	Typ.	Max.
● DSS-SSS-PQ2-1	Super red, 632nm	120	45.0	71.5	112.5
DSS-CSS-PQ2-1	Super red, 632nm	120	45.0	71.5	112.5
● DSR-CSS-PQ2-1	Red, 625nm	120	45.0	71.5	112.5
● DSR-CSS-QR2-1	Red, 625nm	120	71.5	112.5	180.0
DSR-CSS-RS2-1	Red, 625nm	120	112.5	180.0	285.0
DSR-CSS-ST2-1	Red, 625nm	120	180.0	285.0	450.0
● DSR-SSS-QR2-1	Red, 625nm	120	71.5	112.5	180.0
DSR-TSS-ST2-1	Red, 625nm	120	180.0	285.0	450.0
DSA-CSS-QR2-1	Amber, 615nm	120	71.5	112.5	180.0
● DSA-SSS-RS2-1	Amber, 615nm	120	112.5	180.0	285.0
DSA-CSS-RS2-1	Amber, 615nm	120	112.5	180.0	285.0
● DSO-CSS-QR2-1	Orange, 605nm	120	71.5	112.5	180.0
● DSO-SSS-RS2-1	Orange, 605nm	120	112.5	180.0	285.0
DSO-CSS-RS2-1	Orange, 605nm	120	112.5	180.0	285.0
● DSY-CSS-QR2-1	Yellow, 587nm	120	71.5	112.5	180.0
DSY-CSS-RS2-1	Yellow, 587nm	120	112.5	180.0	285.0
● DSY-SSS-RS2-1	Yellow, 587nm	120	112.5	180.0	285.0
● DSG-SSS-PQ2-1	Green, 570nm	120	45.0	71.5	112.5
DSG-CSS-PQ2-1	Green, 570nm	120	45.0	71.5	112.5
DSG-CSS-QR2-1	Green, 570nm	120	71.5	112.5	180.0
DSP-SSS-LM2-1	Pure Green, 560nm	120	11.2	18.0	28.5

● Not for new design

NOTE

1. All part number above comes in a quantity of 2500 units per reel.
2. Other luminous intensity groups are also available upon request.
3. Luminous intensity is measured with an accuracy of ± 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. Please contact marketing for special part number

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If = 20mA			Vr @ Ir = 10uA
	Min. (V)	Typ. (V)	Max. (V)	Min. (V)
DSR-CSS, DSA-CSS, DSS-CSS, DSG-CSS DSO-CSS, DSY-CSS	1.6	1.9	2.3	12
DSS-SSS, DSR-SSS, DSA-SSS, DSO-SSS, DSY-SSS, DSG-SSS, DSP-SSS	1.6	1.8	2.3	12
DSR-TSS	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	20	mA
Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.005)	200	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)	50	mW
Thermal resistance		
- Junction / ambient, R _{th JA}	630	K/W
- Junction / solder point, R _{th JS}	350	K/W
(Mounting on FR4 PCB, pad size ≥ 5 mm ² per pad)		

Characteristics

	Symbol	Part Number	Value	Unit
Temperature coefficient of λ_{dom} (typ) $I_F = 20\text{mA}; 0\text{ }^\circ\text{C} \leq T \leq 100\text{ }^\circ\text{C}$	$TC_{\lambda_{dom}}$ (typ)	DSS-CSS	0.01	nm / K
		DSR-CSS	0.03	
		DSA-CSS	0.05	
		DSO-CSS	0.04	
		DSY-CSS	0.09	
		DSG-CSS	0.10	
		DSR-TSS	0.02	
		DSP-SSS	0.10	
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	DSS-CSS	-2.3	mV / K
		DSR-CSS	-4.3	
		DSA-CSS	-3.2	
		DSO-CSS	-1.6	
		DSY-CSS	-3.3	
		DSG-CSS	-0.2	
		DSR-TSS	-2.0	
		DSP-SSS	-0.2	
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_{IV}	DSS-CSS	-0.52	% / K
		DSR-CSS	-0.59	
		DSA-CSS	-0.60	
		DSO-CSS	-0.62	
		DSY-CSS	-1.05	
		DSG-CSS	-1.20	
		DSR-TSS	-0.62	
		DSP-SSS	-1.17	

Wavelength Grouping at Tj=25°C

Color	Group	Wavelength distribution (nm)
DSS; Super red	Full	625 - 640
DSR-CS, -SS; Red (AS) DSR-TS; Red (TS)	Full	620 - 630
	Full	620 - 635
DSA; Amber	Full	610 - 621
	W	610 - 615
	X	615 - 621
DSO; Orange	Full	600 - 612
	W	600 - 603
	X	603 - 606
	Y	606 - 609
	Z	609 - 612
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
DSP; 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
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

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

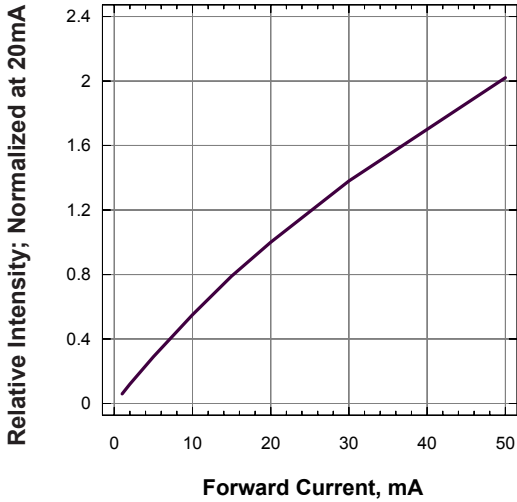
Vf Binning (Optional) at Tj=25°C

Vf Bin @ 20mA	Forward Voltage (V)
V01	1.55 ... 1.85
V02	1.85 ... 2.15
V03	2.15 ... 2.45
V04	2.45 ... 2.75

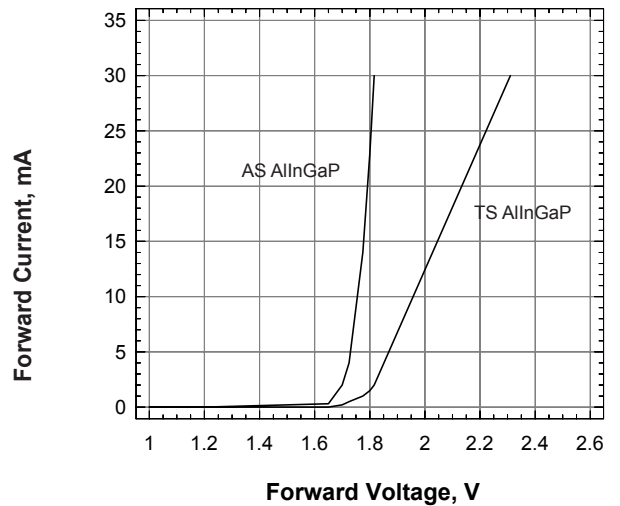
Forward voltage, Vf is measured with an accuracy of ± 0.1 V.

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

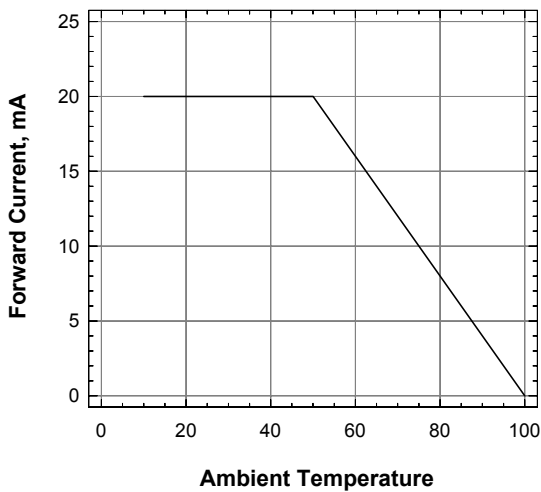
Relative Luminous Intensity Vs Forward Current



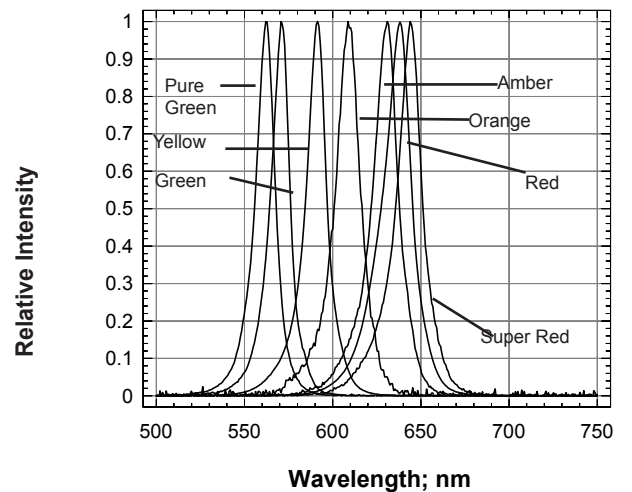
Forward Current Vs Forward Voltage



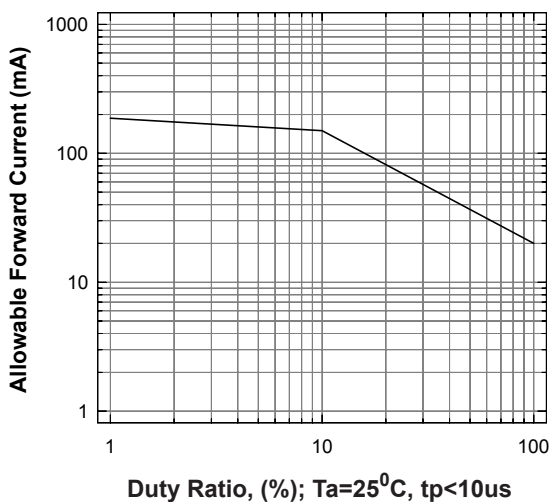
Maximum Current Vs Temperature



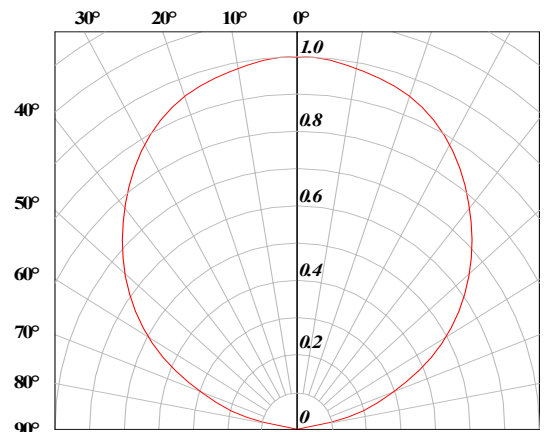
Relative Intensity Vs Wavelength



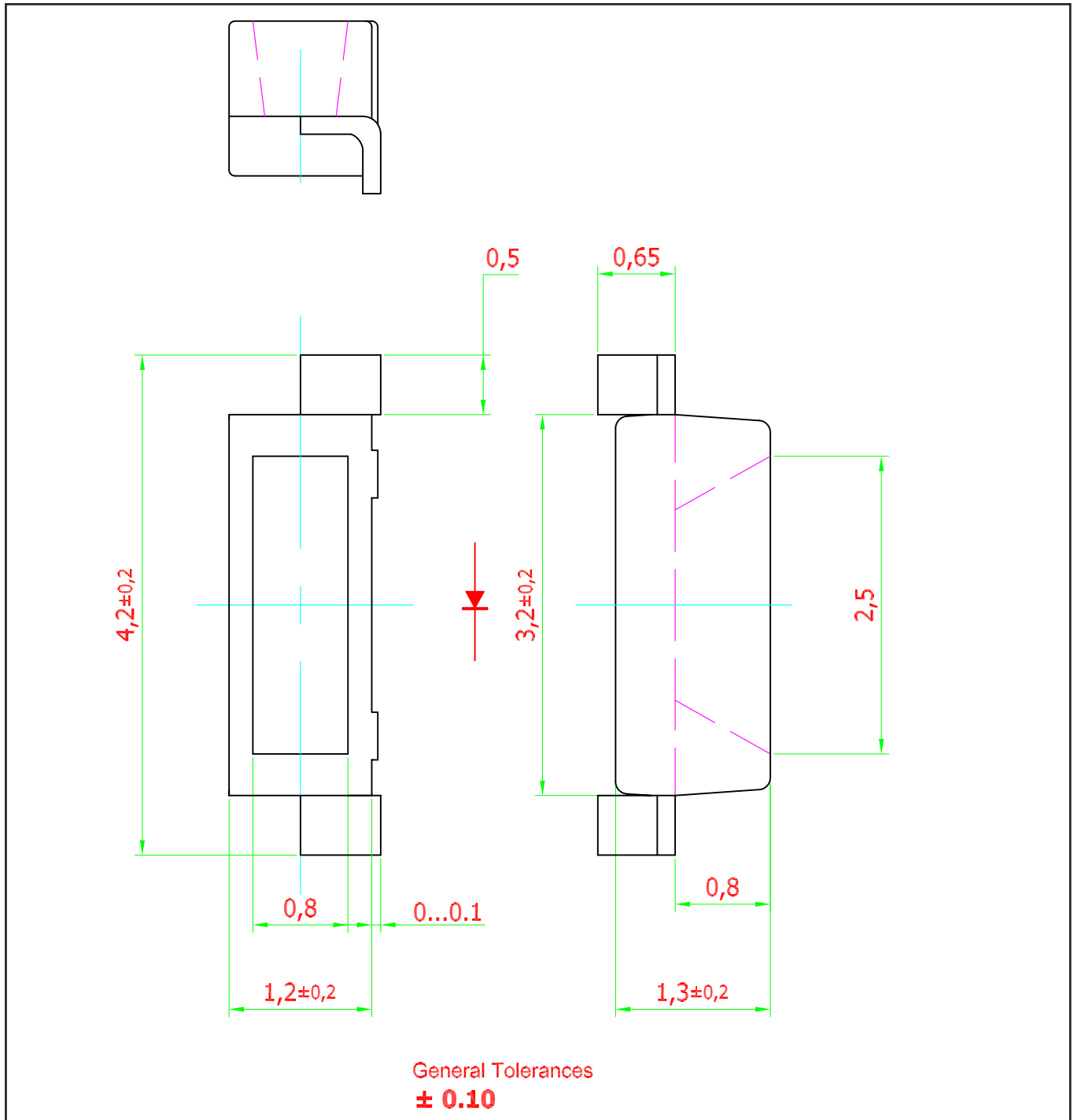
Allowable Forward Current Vs Duty Ratio



Radiation Pattern



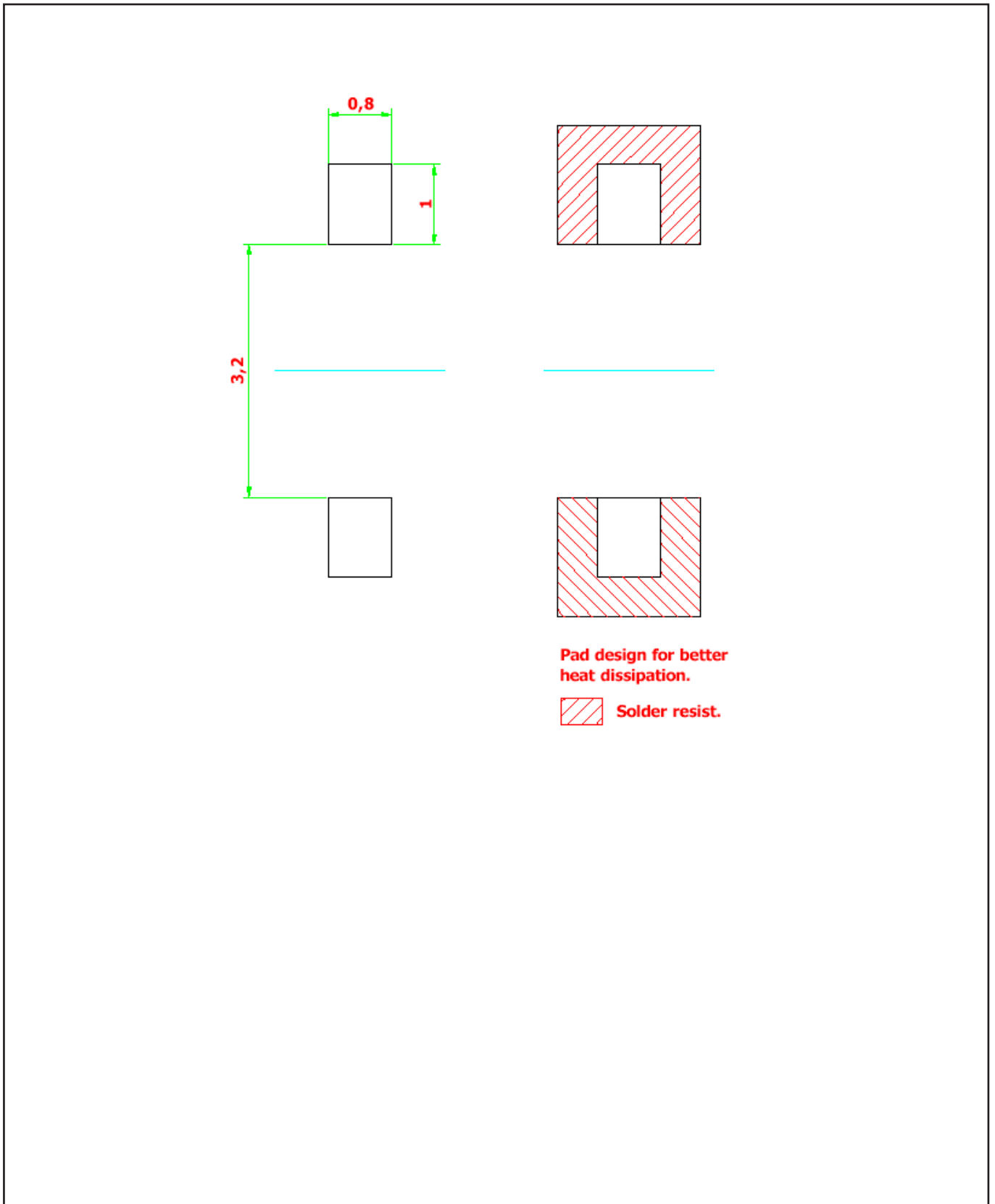
DomiLED™ • AllnGaP : DSx-xSS Package Outlines



Material

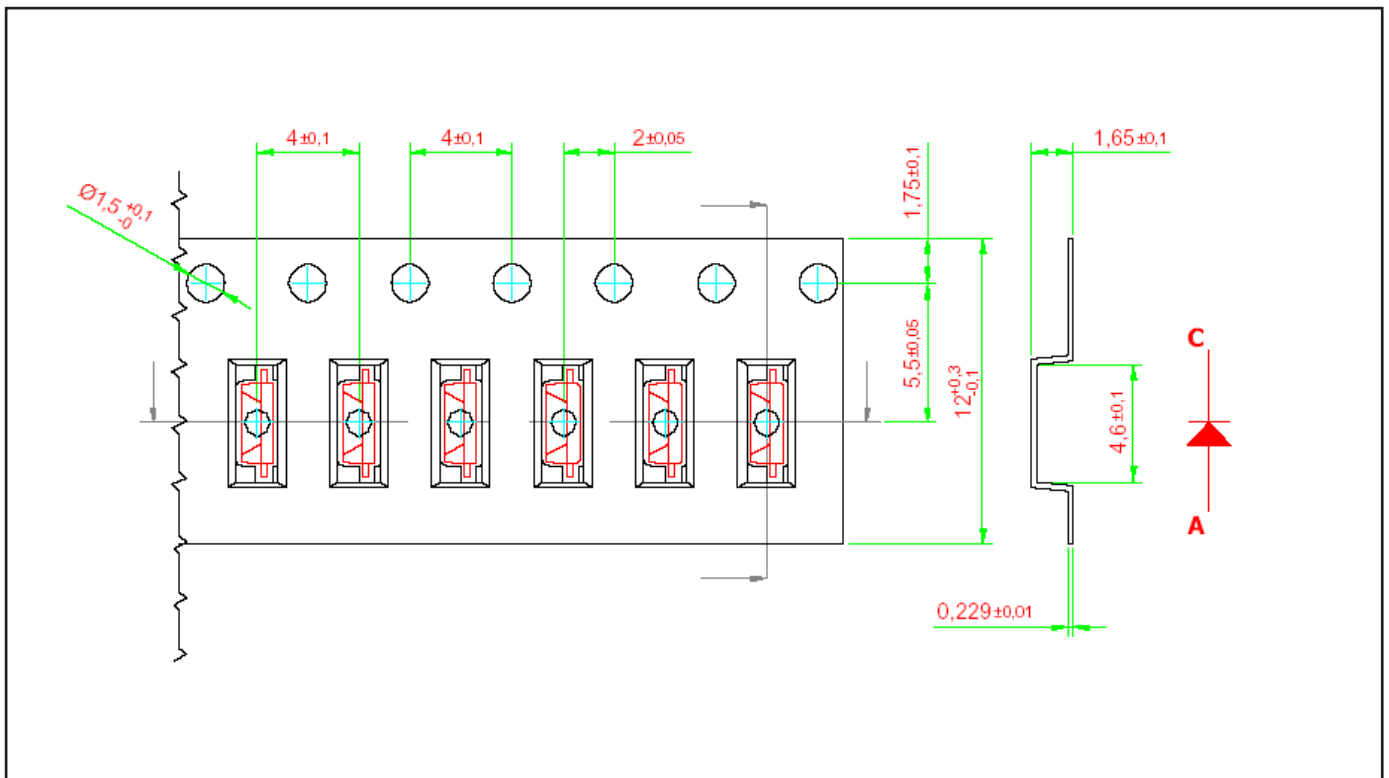
Material	
Lead-frame	Cu Alloy With Ag Plating
Package	High Temperature Resistant Plastic, PPA
Encapsulant	Epoxy
Soldering Leads	Sn-Sn Plating

Recommended Solder Pad

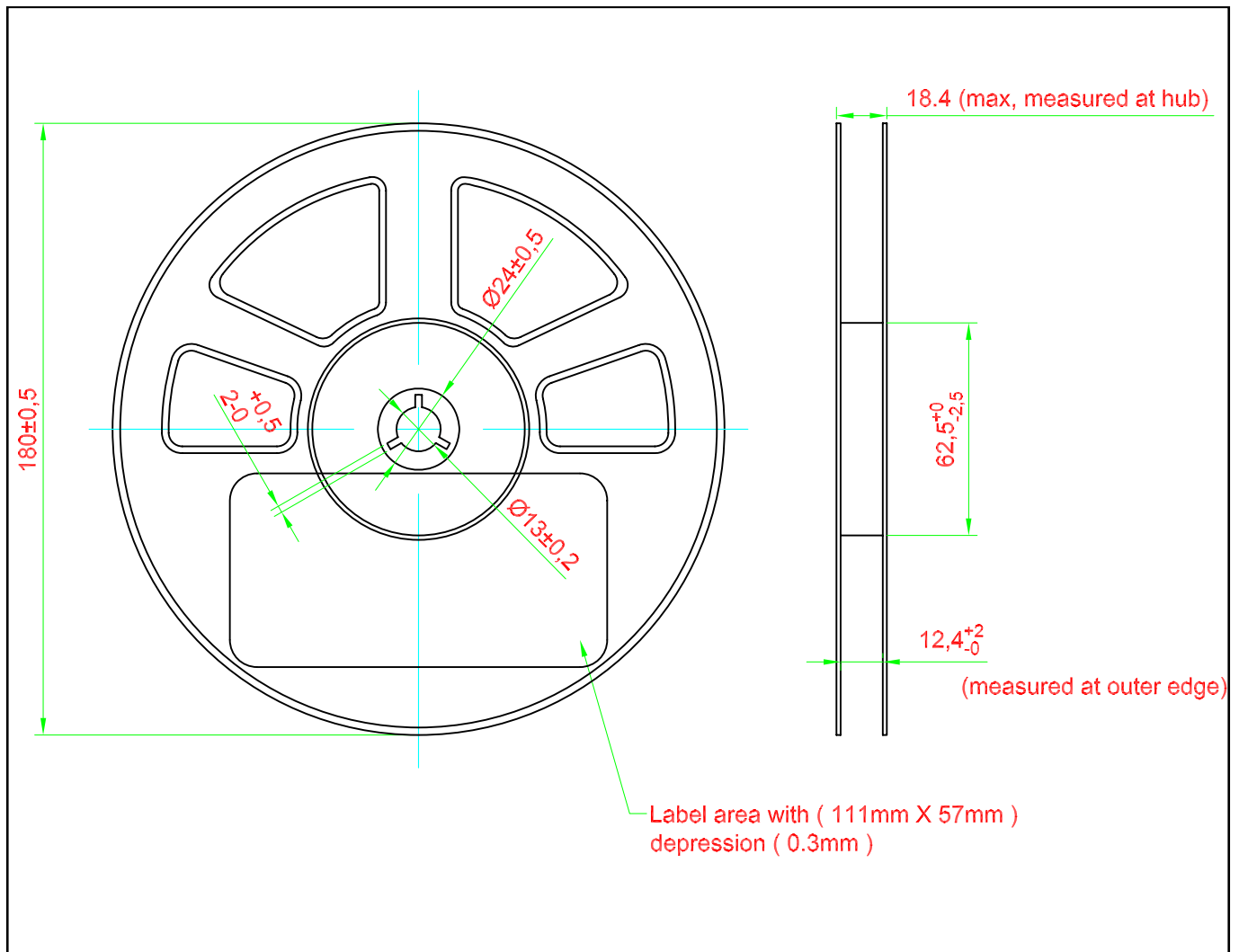


Taping and orientation

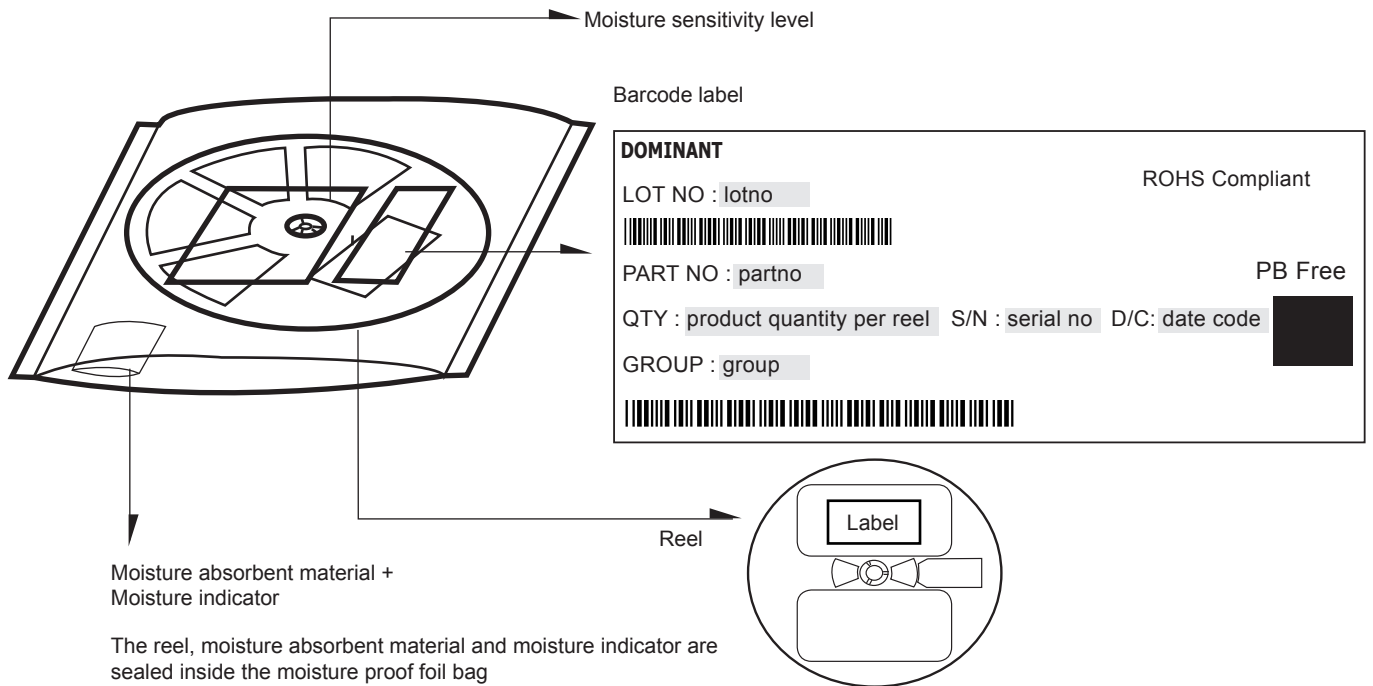
- Reels come in quantity of 2500 units.
- Reel diameter is 180 mm.



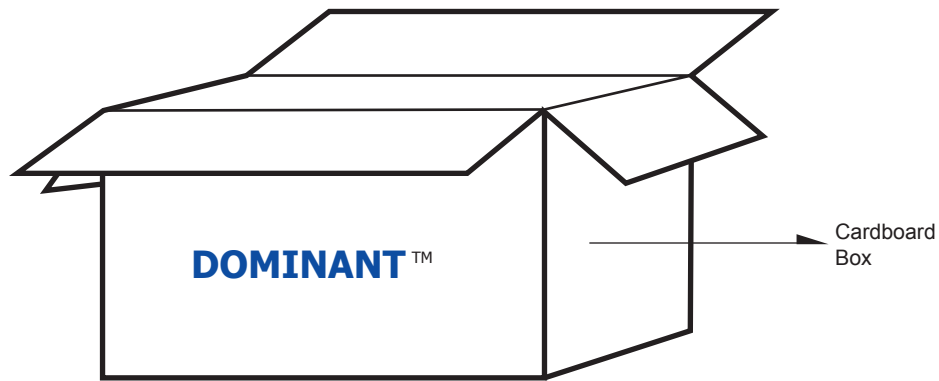
Packaging Specification



Packaging Specification



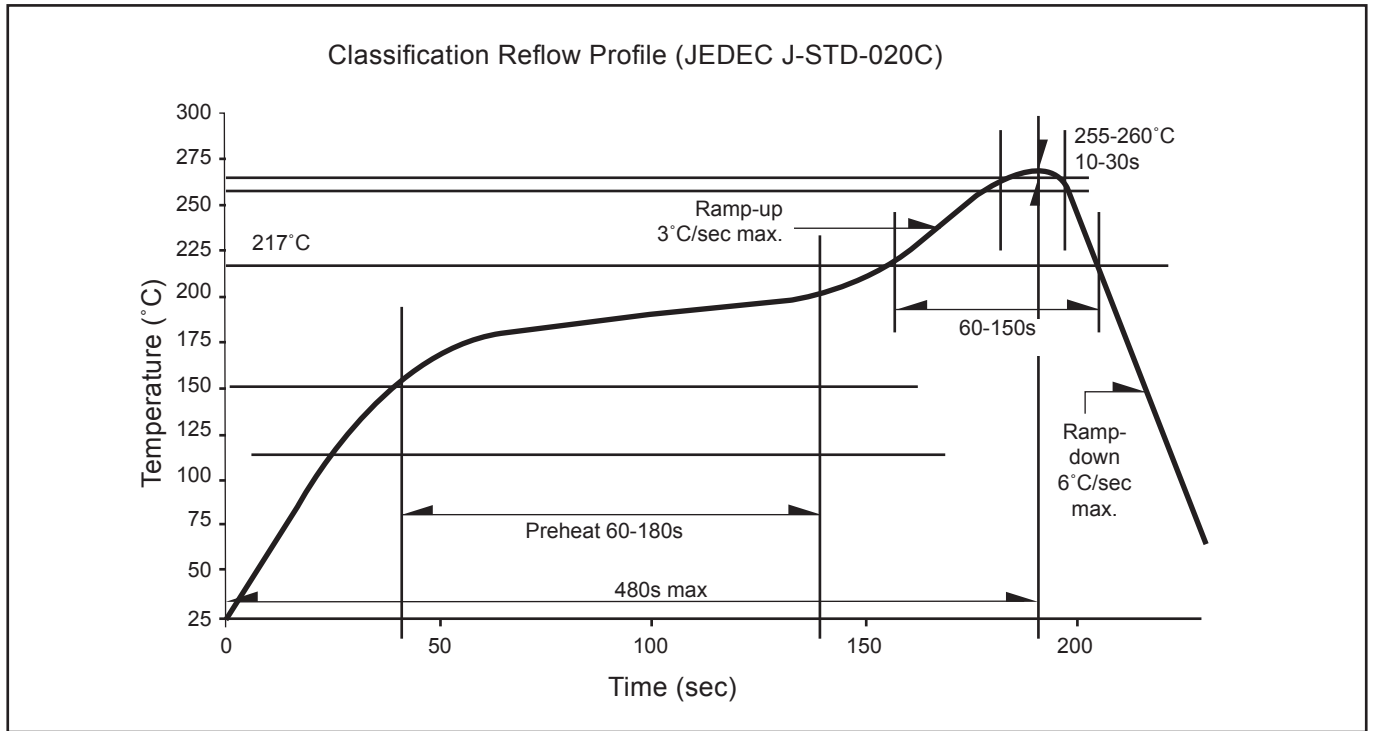
	Average 1pc Right Angle DomiLED	1 completed bag (2500pcs)
Weight (gram)	0.034	190 ± 10



For Right Angle 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	37,500 MAX
Large	416 x 516 x 476	1.74	96 reels MAX	240,000 MAX

Recommended Pb-free Soldering Profile



Revision History

Page	Subjects	Date of Modification
7	Add Allowable Forward Current Vs Duty Ratio Graph	17 Apr 2009
3	Add minimum value for electrical characteristics	12 May 2009
2	Not for new design: DSR-CSS-QR2-1	29 Jan 2010
-	Update company name	08 Mar 2010
2	Not for new design: DSY-CSS-QR2-1	29 Sep 2010
7	Update Graph: Relative Luminous Intensity Vs Forward Current	29 Dec 2011
11	Error in carrier tape Not for new design: DSO-CSS-QR2-1	25 Jun 2012
2	Typo error in Luminous Intensity	13 Mar 2013
4	Add Characteristics Add Thermal Resistance	07 May 2013
2	Add new partno: DSG-CSS-QR2-1	12 Nov 2013
2, 6	Add new partno: DSR-CSS-ST2-1 Update Vf bin naming	16 Dec 2014

NOTE

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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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