PLCC4 Surface Mount LED

OVSA1xBC2R8 Series



Features:

- High intensity with low power consumption
- PLCC4 packaged in 8 mm tape on 7” diameter reel
- Compatible with automatic placement equipment
- Dimensions: 3.2 x 2.7 x 1.95 mm
- 120° viewing angle

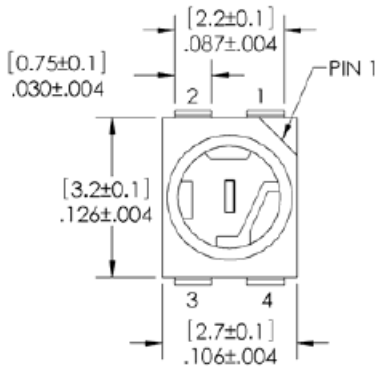
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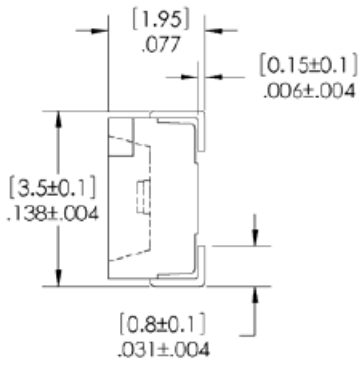
The OVSA1xBC2R8 series is designed for wide angle, uniform light output. Its internal reflector and colorless clear lens optimize luminous intensity and make it ideal for backlighting applications and for coupling with light guides.

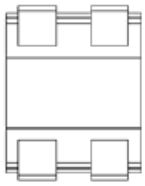
Applications:

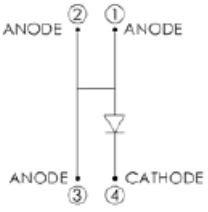
- Traffic lights
- Signal and symbol luminaire
- Mono-color indicators
- Backlighting (LCD, switches, displays, illuminated advertising)
- Interior automotive lighting (instrumentation clusters)
- Safety marker lights (steps, exit ways)

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVSA1ABC2R8	AlInGaP	Amber	1500	Water Clear
OVSA1BBC2R8	LnGaN	Blue	650	Water Clear
OVSA1GBC2R8	LnGaN	Green	3200	Water Clear
OVSA1SBC2R8	AlInGaP	Red	1600	Water Clear









RoHS

5a

Moisture

ATTENTION
OBSERVE PRECAUTIONS
ELECTROSTATIC
SENSITIVE DEVICES

DIMENSIONS ARE IN INCHES AND [MM]

DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage Temperature Range		-40 ~ +100° C
Operating Temperature Range		-40 ~ +100° C
Reverse Voltage		5 V
Continuous Forward Current	Blue, Green	30 mA
	Red, Amber	70 mA
Peak Forward Current (Pulse width ≤ 10 msec, duty cycle ≤ 10%)	Blue, Green	100 mA
	Red, Amber	200 mA
Power Dissipation	Blue, Green	130 mW
	Red, Amber	210 mW
Thermal Resistance Junction to Solder [1]	Blue, Green	200° C/W
	Red, Amber	150° C/W
Electrostatic Discharge Classification (MIL-STD-883E)	Blue, Green	Class 2
	Red, Amber	
Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)		5a / 24 hrs
LED Junction Temperature		110° C
Lead Soldering Temperature		250° C / 10 seconds

Note:

1. Rth test condition: Mounted on printed circuit board FR 4 (pad size ≥ 16 mm^2)

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Electrical Specifications

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	COLOR	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I_V	Luminous Intensity	Blue	450	650	——	mcd	I_F = 30 mA
		Green	2240	3200	——		
		Red	1120	1600	——		I_F = 50 mA
		Amber	1120	1500	——		
V_F	Forward Voltage	Blue	——	3.6	4.2	V	I_F = 30 mA
		Green	——	3.6	4.2		
		Red	——	2.4	3.0		I_F = 50 mA
		Amber	——	2.4	3.0		
I_R	Reverse Current	Blue	——	——	10	µA	V_R = 5 V
		Green	——	——	10		
		Red	——	——	10		
		Amber	——	——	10		
λ_D	Dominant Wavelength	Blue	460	470	475	nm	I_F = 30 mA
		Green	520	527	535		
		Red	618	624	630		I_F = 50 mA
		Amber	584	591	599		
2 Θ½ H-H	50% Power Angle	Blue & Green		120		deg	I_F = 30 mA
		Red & Amber					I_F = 50 mA

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Luminous Intensity (I_V) @ 30 mA

BLUE: OVSA1BBC2R8		
IV Code	Min (mcd)	Max (mcd)
Ua	450	560
Ub	560	710
Va	710	900

GREEN: OVSA1GBC2R8		
IV Code	Min (mcd)	Max (mcd)
Xb	2240	2800
Ya	2800	3550
Yb	3550	4500

Dominant Wavelength (nm)

BLUE: OVSA1BBC2R8		
nm Code	Min	Max
B3	460	465
B4	465	470
B5	470	475

GREEN: OVSA1GBC2R8		
nm Code	Min	Max
G7	520	525
G8	525	530
G9	530	535

Luminous Intensity (I_V) @ 50 mA

RED: OVSA1SBC2R8		
IV Code	Min (mcd)	Max (mcd)
Wa	1120	1400
Wb	1400	1800
Xa	1800	2240
Xb	2240	2800

AMBER: OVSA1ABC2R8		
IV Code	Min (mcd)	Max (mcd)
Wa	1120	1400
Wb	1400	1800
Xa	1800	2240
Xb	2240	2800

Dominant Wavelength (nm)

RED: OVSA1SBC2R8		
nm Code	Min	Max
RA	618	630

AMBER: OVSA1ABC2R8		
nm Code	Min	Max
A2	584	587
A3	587	590
A4	590	593
A5	593	596
A6	596	599

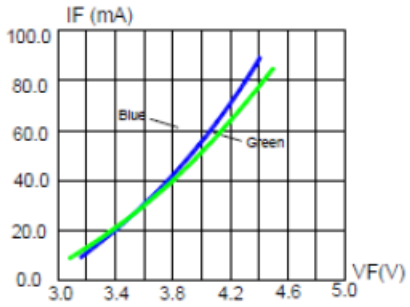
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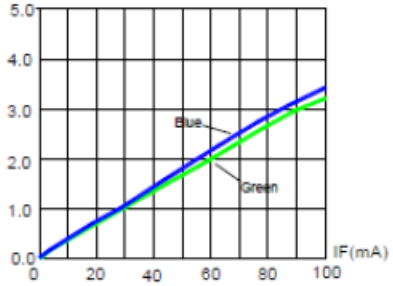
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Performance

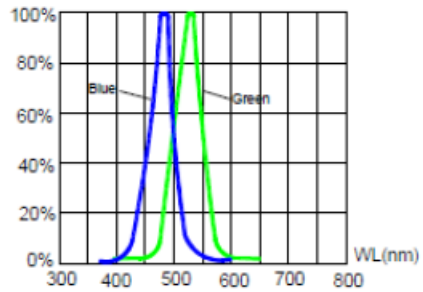
Typical Electro-Optical Characteristics Curves OVSA1BBC2R8 (Blue) & OVSA1GBC2R8 (Green)



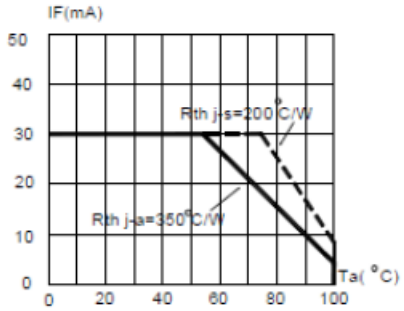
Forward Current vs. Forward Voltage



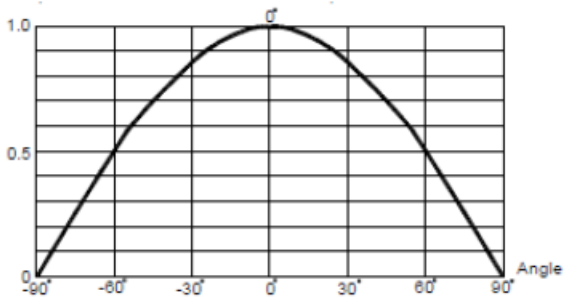
Relative Luminous Intensity vs. Forward Current



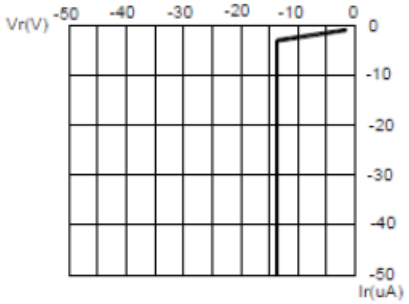
Relative Luminous Intensity vs. Wavelength



Blue & Green Maximum Forward DC Current vs. Ambient Temperature



Angular Distribution



Blue & Green Reverse Current vs. Reverse Voltage

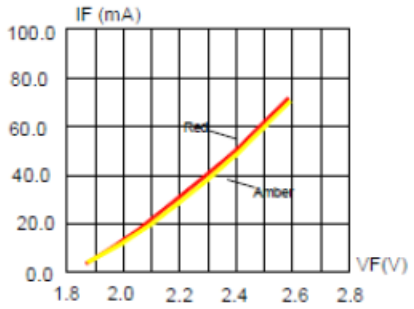
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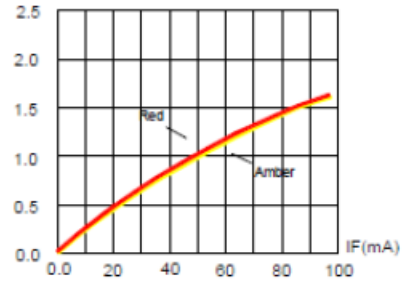
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Performance

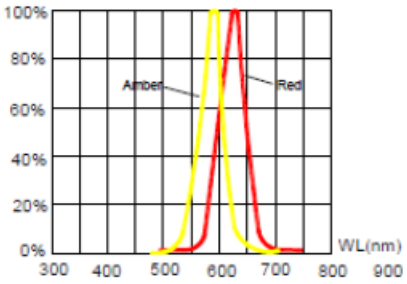
Typical Electro-Optical Characteristics Curves for OVSA1SBC2R8 (Red) & OVSA1ABC2R8 (Amber)



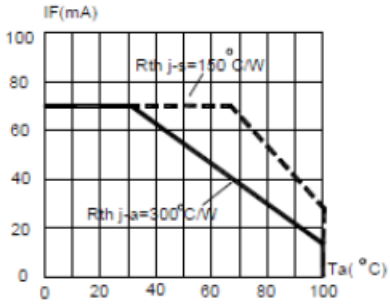
Forward Current vs. Forward Voltage



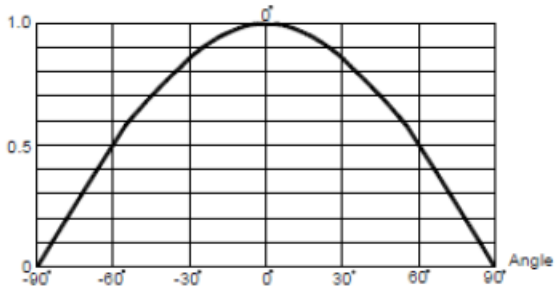
Relative Luminous Intensity vs. Forward Current



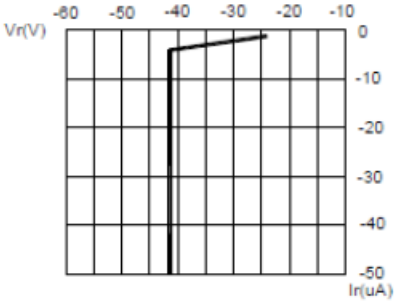
Relative Luminous Intensity vs. Wavelength



Red & Amber Maximum Forward DC Current vs. Ambient Temperature



Angular Distribution

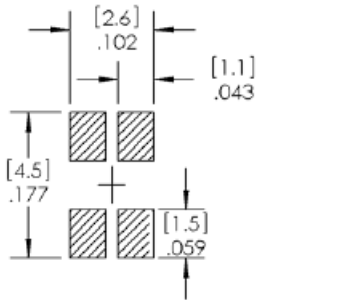


Red & Amber Reverse Current vs. Reverse Voltage

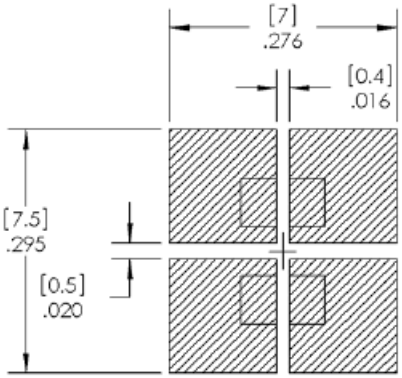
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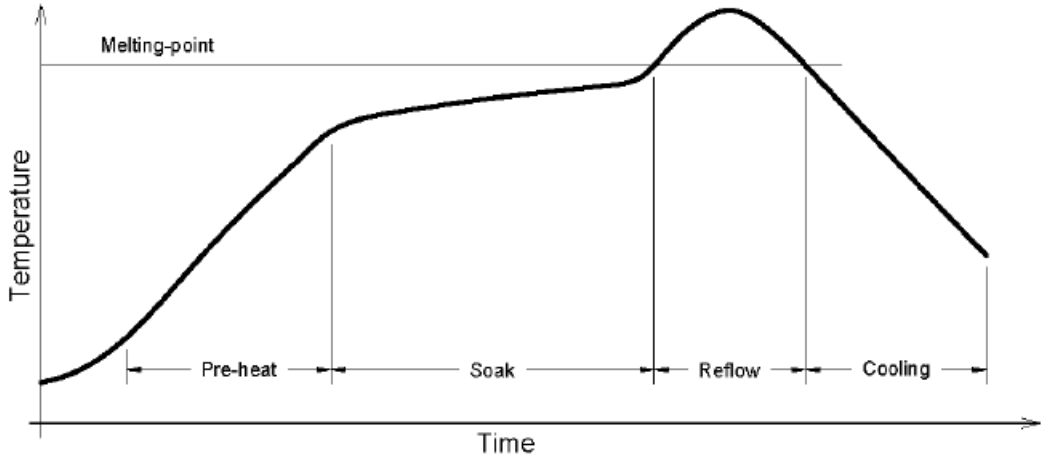


RECOMMENDED SOLDER PASTE PATTERN



RECOMMENDED COPPER PATTERN

Reflow Solder Profile



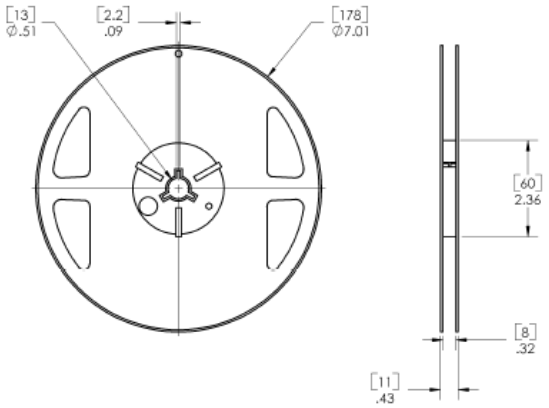
Solder = Lead-Free	
Average ramp-up rate = 4°C / sec. max	Peak temperature = 250°C max.
Preheat temperature: 150 - 220°C	Time within 5°C of actual peak temperature = 10 sec. max
Preheat time: 120 sec. max.	
Ramp-down rate = 6°C / sec. max.	Duration above 217°C is 60 sec. max

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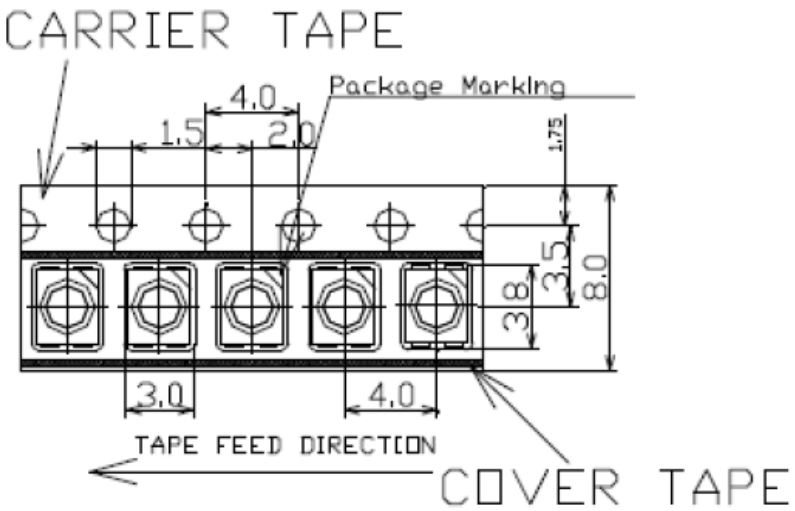
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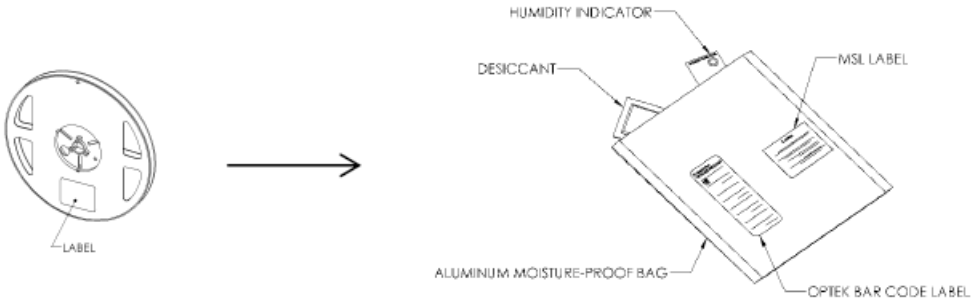
Reel Dimensions: 7-inch reel



Carrier Tape Dimensions: Loaded Quantity 2000 pieces per reel



Moisture Resistant Packaging:



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