

1-Watt SMD 6 mm (120° Viewing Angle)

OVSPxBCR4 Series



Features:

- Robust energy-efficient design with long operating life
- Low thermal resistance
- High luminous intensity
- Optional optics to suit application



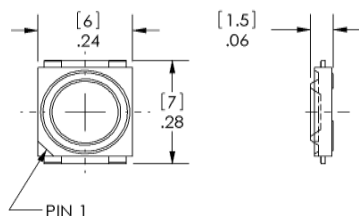
Description:

The OVSPxBCR4 Series is an energy-efficient packaged LED source that offers high luminance, and a long operating lifespan. These devices offer a 120° viewing angle and an ultra-low profile (1.5mm) making them highly suitable for conventional lighting and specialized applications. Optional optics are offered to suit application. Please contact OPTEK for more information.

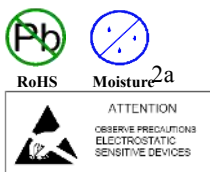
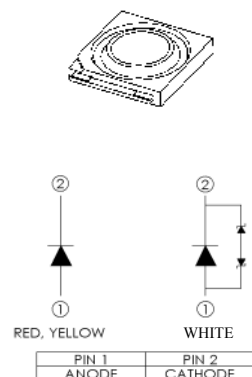
Applications:

- Automotive exterior and interior lighting
- Architectural indoor and outdoor lighting
- General lighting
- Electronic signs and signals

Part Number	Viewing Angle	Material	Emitted Color	Typical Luminous Flux (lm)	Lens Color
OVSPRBCR4	120°	AllnGaP	Red	42	Water Clear
OVSPYBCR4		AllnGaP	Yellow	34	Water Clear
OVSPW1BCR4		InGaN	White	90	Water Clear



DIMENSIONS ARE IN INCHES [MM]
GENERAL TOLERANCES ±.004 [0.10]



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

General Note

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Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)		
	Red, Yellow	White
DC Forward Current	400mA	350mA
Peak Pulsed Forward Current ¹	500mA	1000mA
Reverse Voltage	12V	Not designed for reverse bias
Junction Temperature ²	125°C	150°C
Power Dissipation	1200mW	1200mW
Storage and Operating Temperature	-40° ~ +100 ° C	-40° ~ +100 ° C
MSL Level (IPC/JEDEC J-STD-020C)	2a / 672 Hrs	2a / 672 Hrs
ESD Threshold (HBM)	Class 2	Class 2

Optical and Electrical Characteristics—Red, Yellow ($I_F = 400\text{ mA}$, $T_A = 25^\circ\text{C}$)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	
V_F	Forward Voltage	2.2	2.5	2.8	V	
Φ	Luminous Flux	Red	33	42	54	lm
		Yellow	27	34	42	lm
λ_D	Dominant Wavelength	Red	620	625	630	nm
		Yellow	585	591	597	nm
I_R	Reverse Current	----	100	----	μA	
$2\theta_{\frac{1}{2}}$	50% Power Angle	----	120	----	deg	

Optical and Electrical Characteristics—White ($I_F = 350\text{ mA}$, $T_A = 25^\circ\text{C}$)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS
V_F	Forward Voltage	3.0	3.5	4.0	V
Φ	Luminous Flux	67	90	113	lm
$2\theta_{\frac{1}{2}}$	50% Power Angle	----	120	----	deg

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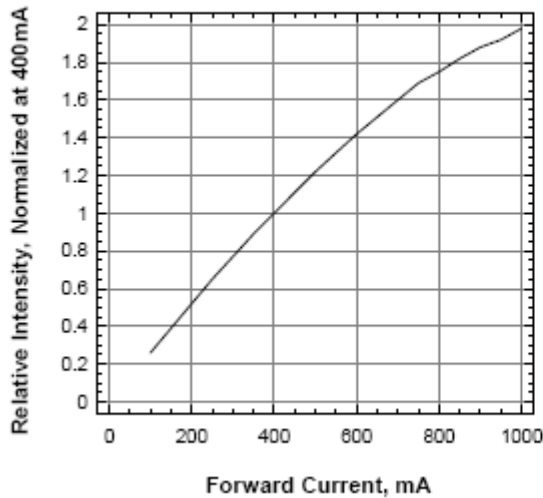
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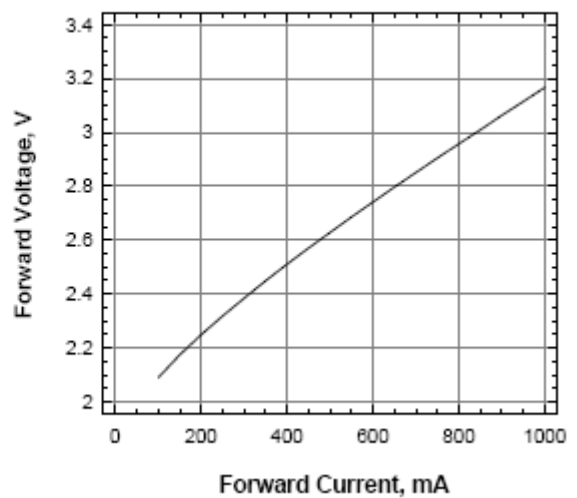
OVSPxBCR4 Series

Typical Electro-Optical Characteristics Curves—Red, Yellow

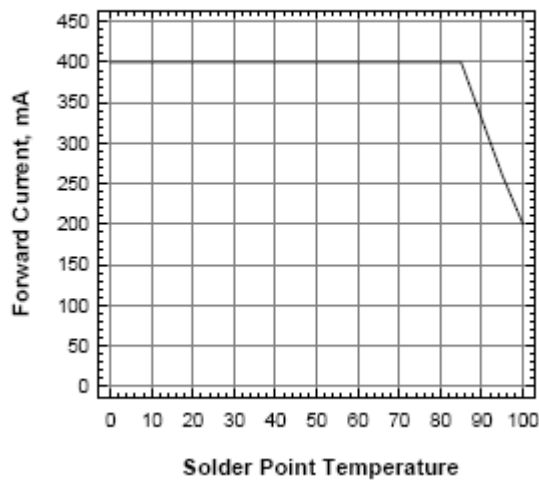
Relative Intensity Vs Forward Current



Forward Voltage Vs Forward Current



Maximum Current Vs Solder Point Temperature



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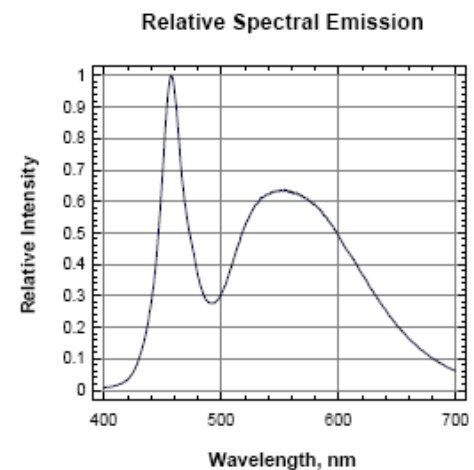
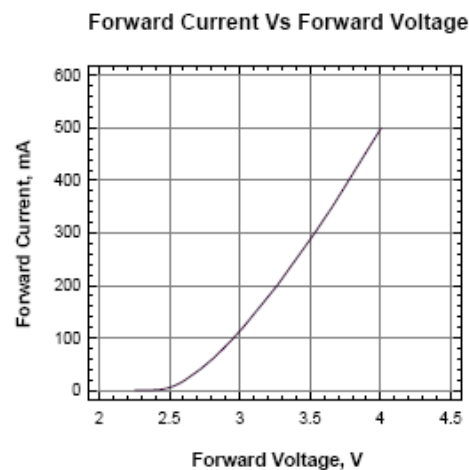
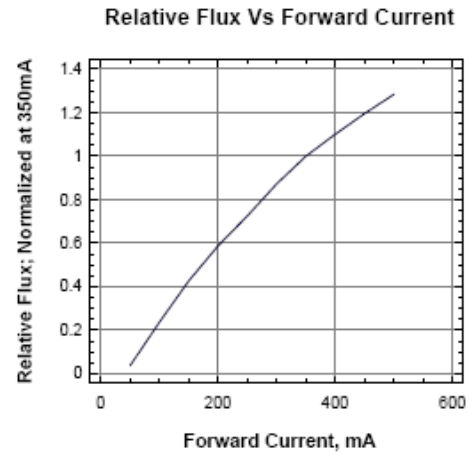
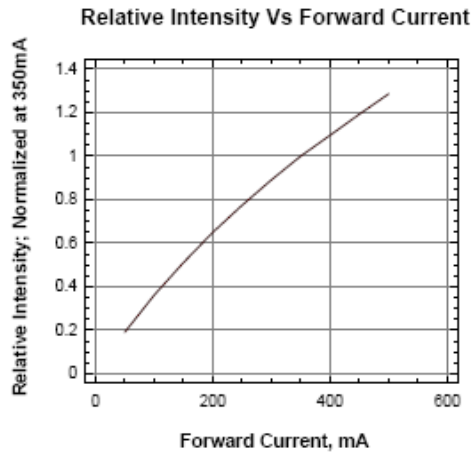
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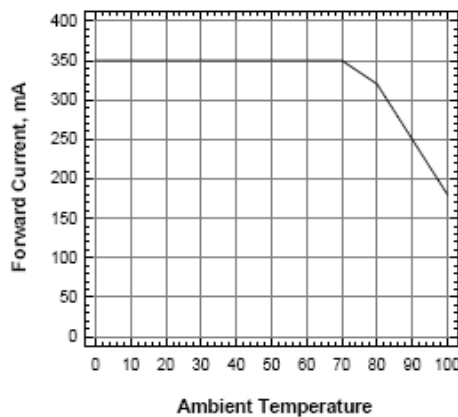
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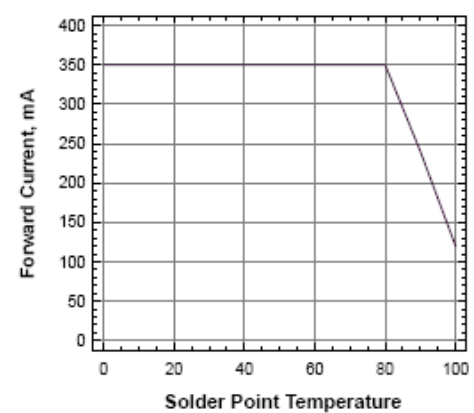
Typical Electro-Optical Characteristics Curves—White



Forward Current Vs Ambient Temperature (R_{ja}=40K/W)



Forward Current Vs Solder Point Temperature



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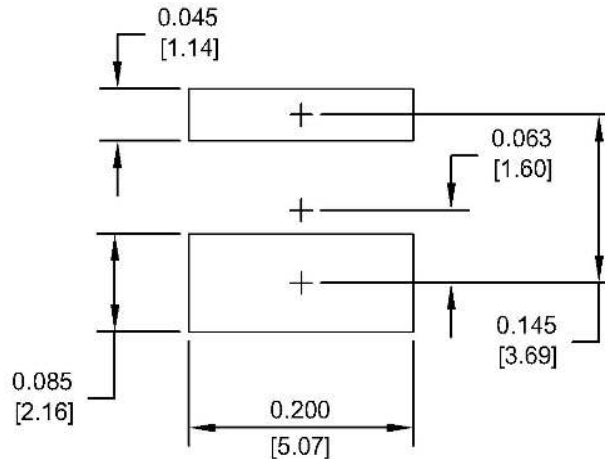
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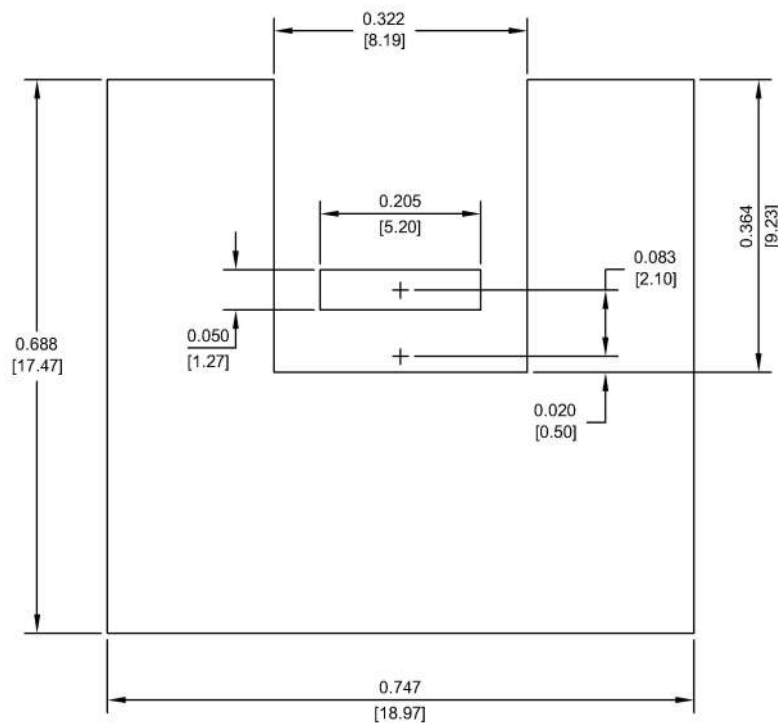
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Solder Pad Design

Metal core circuit board (MCPCB) is highly recommended for high density applications.



Solder Paste Pattern



Copper Pattern

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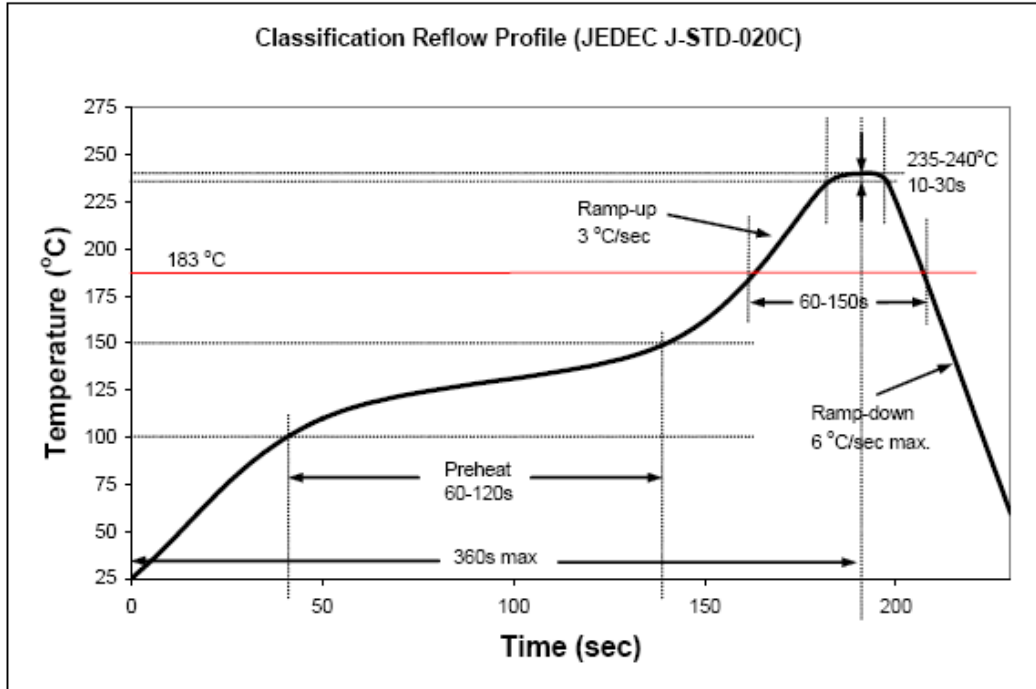
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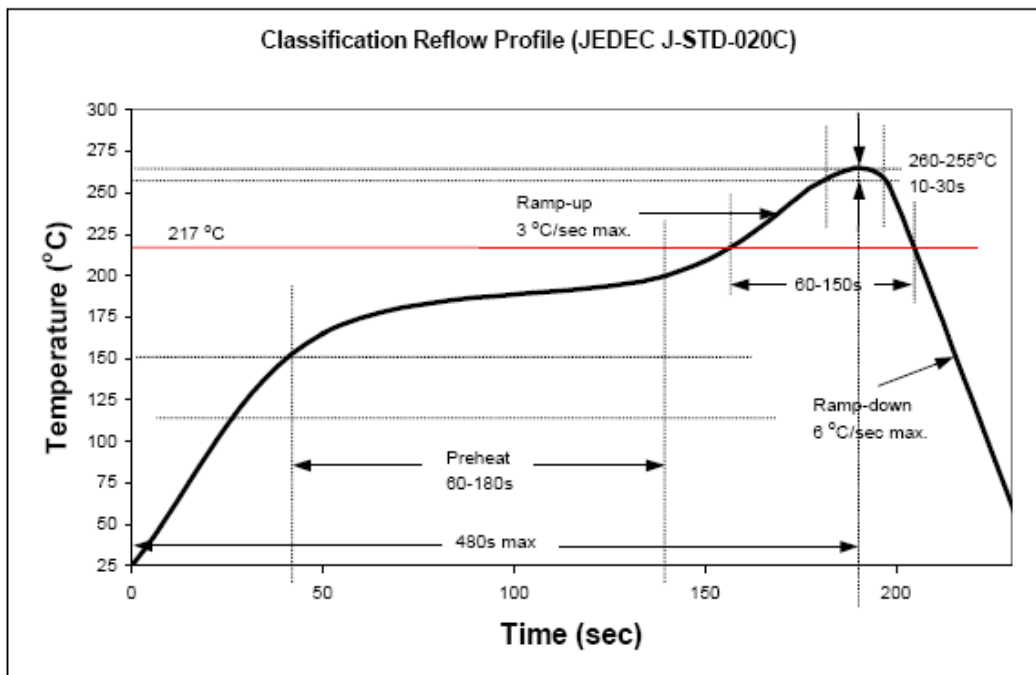


OVSPxBCR4 Series

Recommended Sn-Pb IR-Reflow Soldering Profile.



Recommended Pb Free IR-Reflow Soldering Profile.



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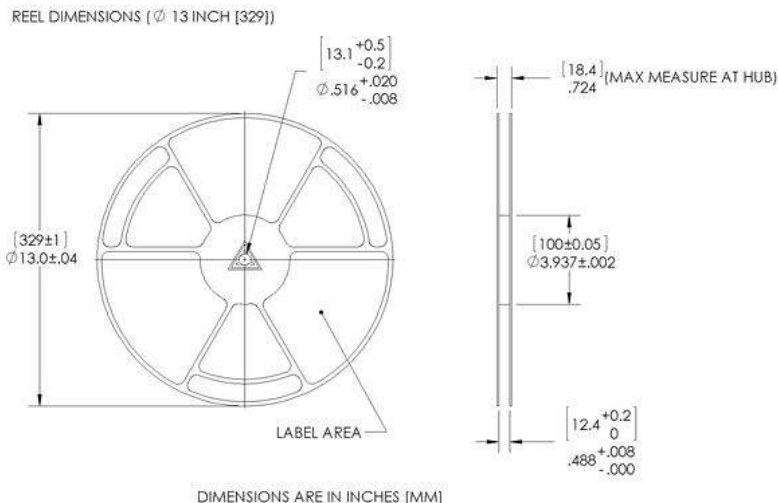
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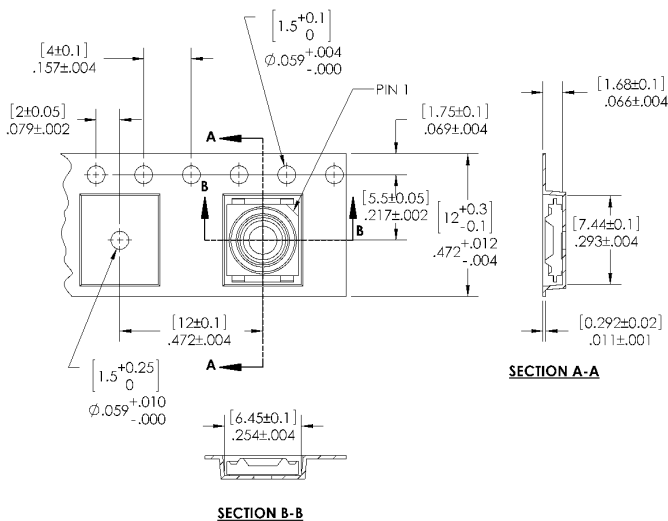


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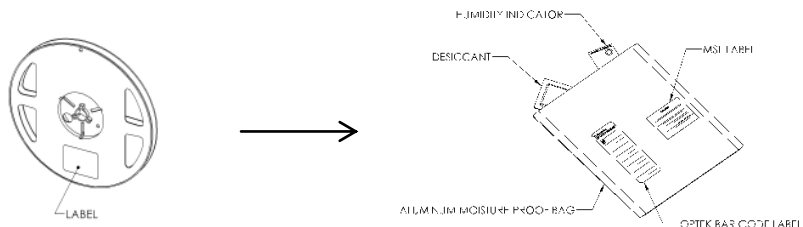
Reel Dimensions: 13 - inch reel



Carrier Tape Dimensions: Loaded quantity 2000 pieces per reel



Moisture Resistant Packaging



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