

# 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



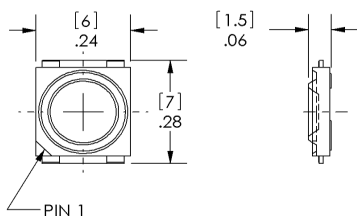
### Description:

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.

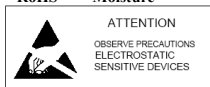
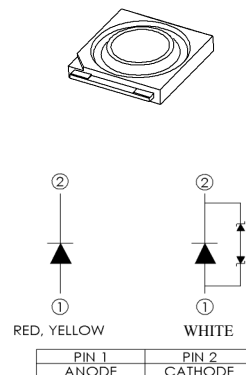
### Applications:

- 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 <sub>A</sub> = 25° C unless otherwise noted)		
	Red, Yellow	White
DC Forward Current	400mA	350mA
Peak Pulsed Forward Current <sup>1</sup>	500mA	1000mA
Reverse Voltage	12V	Not designed for reverse bias
Junction Temperature <sup>2</sup>	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<sub>F</sub> = 400 mA, T<sub>A</sub> = 25° C)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	
V <sub>F</sub>	Forward Voltage	2.2	2.5	2.8	V	
Φ	Luminous Flux	Red	33	42	54	lm
		Yellow	27	34	42	lm
λ <sub>D</sub>	Dominant Wavelength	Red	620	625	630	nm
		Yellow	585	591	597	nm
I <sub>R</sub>	Reverse Current	----	100	----	μA	
2 Θ½	50% Power Angle	----	120	----	deg	

#### Optical and Electrical Characteristics—White (I<sub>F</sub> = 350 mA, T<sub>A</sub> = 25° C)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS
V <sub>F</sub>	Forward Voltage	3.0	3.5	4.0	V
Φ	Luminous Flux	67	90	113	lm
2 Θ½	50% Power Angle	----	120	----	deg

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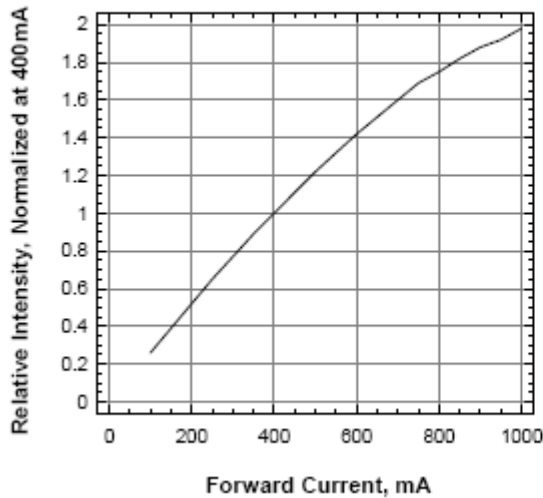
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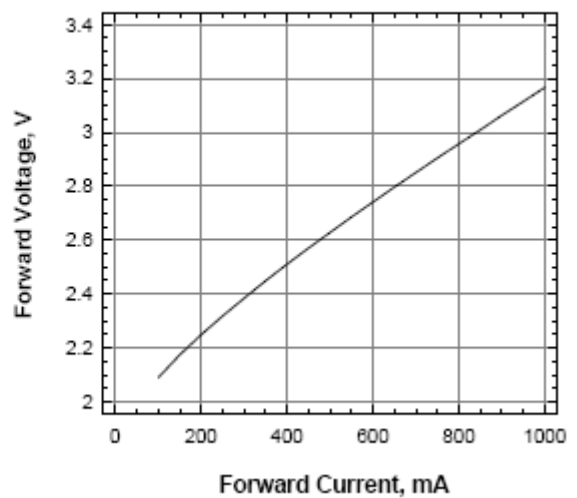
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### Typical Electro-Optical Characteristics Curves—Red, Yellow

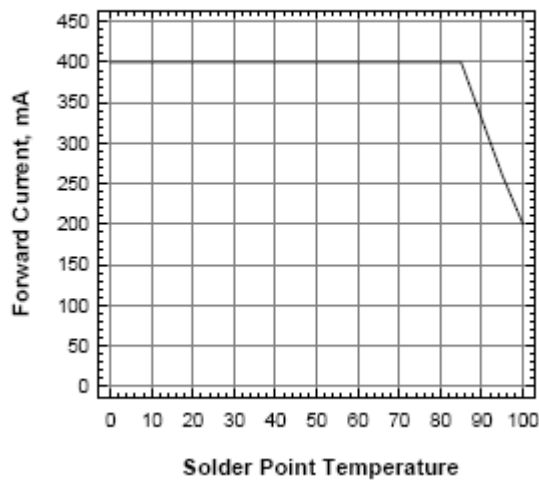
Relative Intensity Vs Forward Current



Forward Voltage Vs Forward Current



Maximum Current Vs Solder Point Temperature



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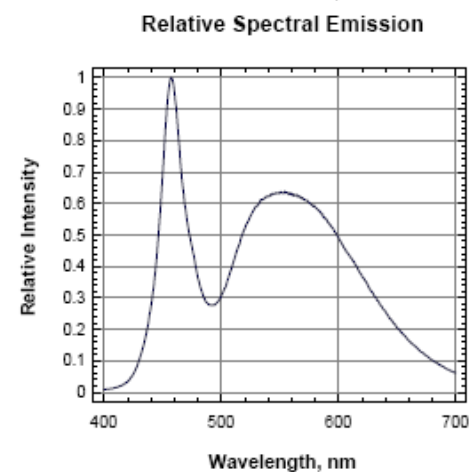
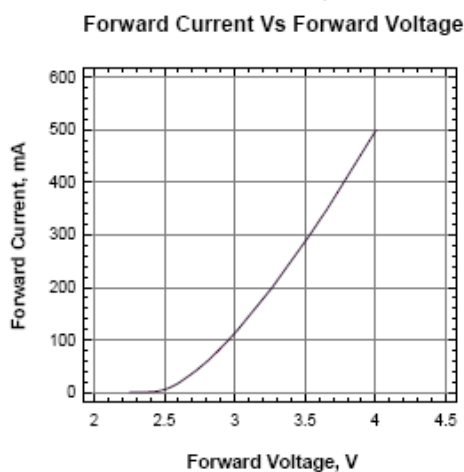
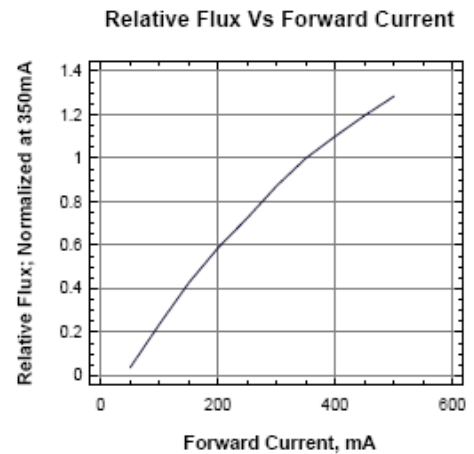
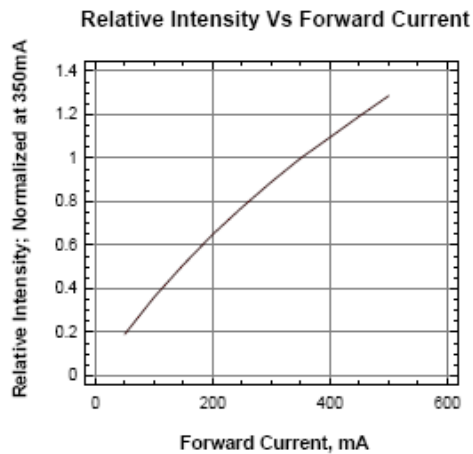
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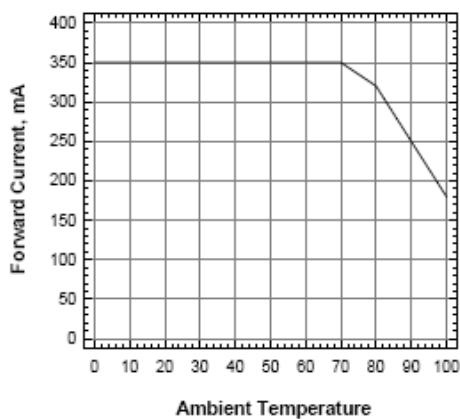
OVSPxBCR4 Series



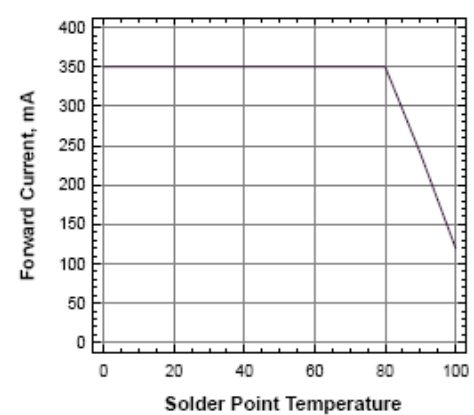
## Typical Electro-Optical Characteristics Curves—White



**Forward Current Vs Ambient Temperature (R<sub>ja</sub>=40K/W)**



**Forward Current Vs Solder Point Temperature**



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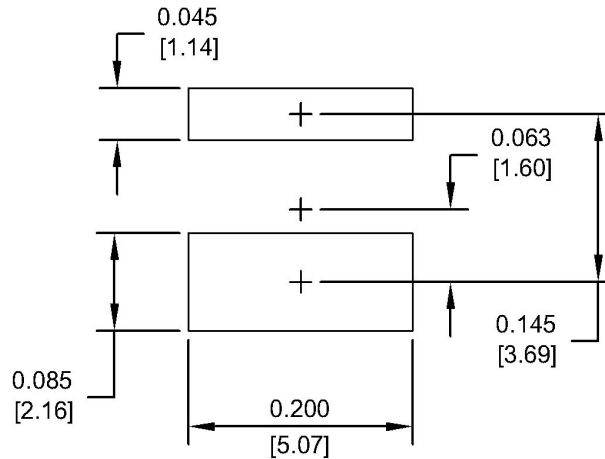
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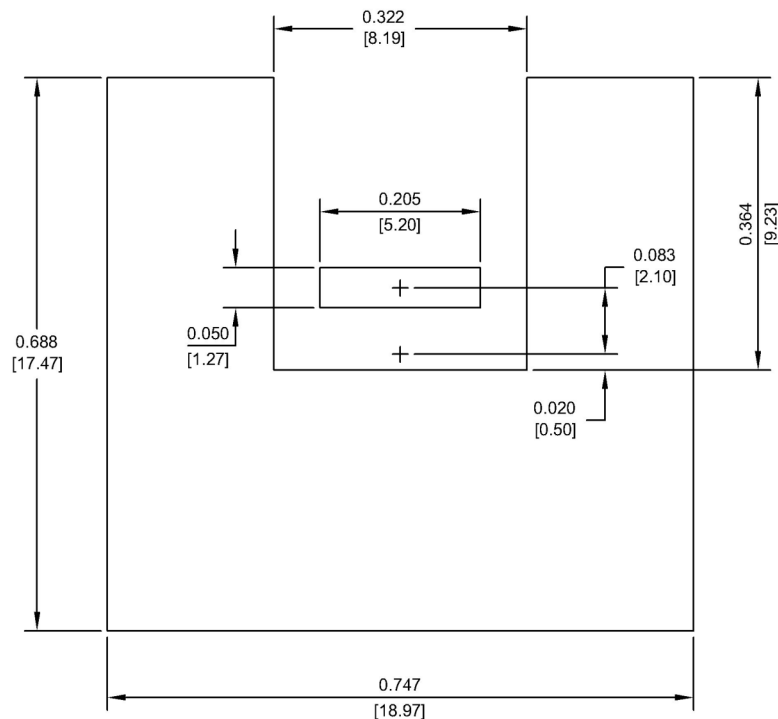
## OVSPxBCR4 Series

### Solder Pad Design

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



### Solder Paste Pattern



### Copper Pattern

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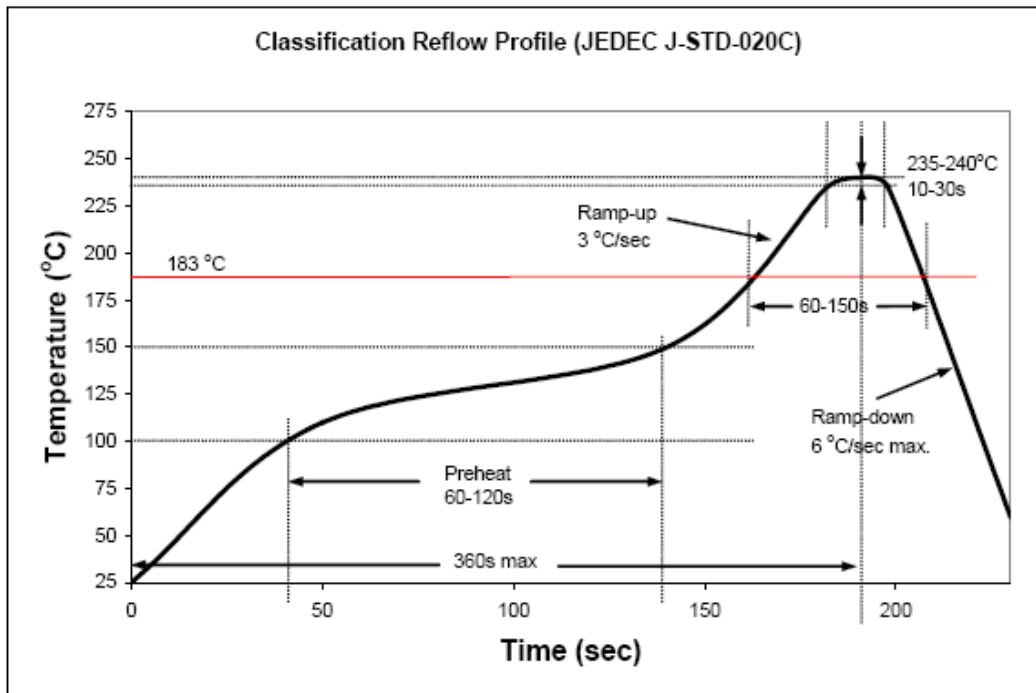
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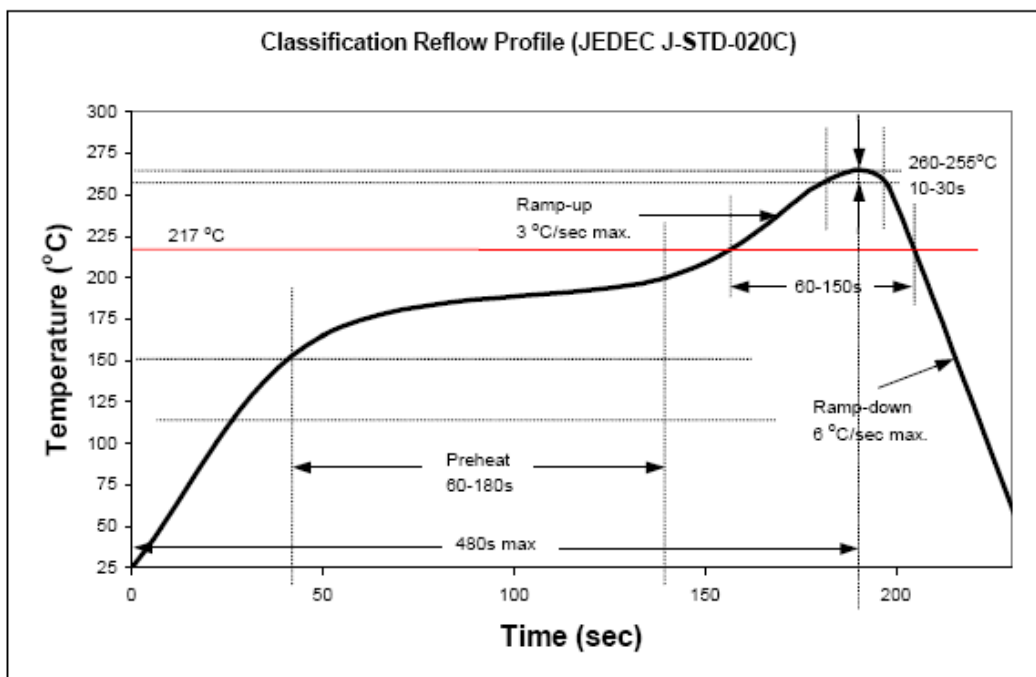


## OVSPxBCR4 Series

### Recommended Sn-Pb IR-Reflow Soldering Profile.



### Recommended Pb Free IR-Reflow Soldering Profile.



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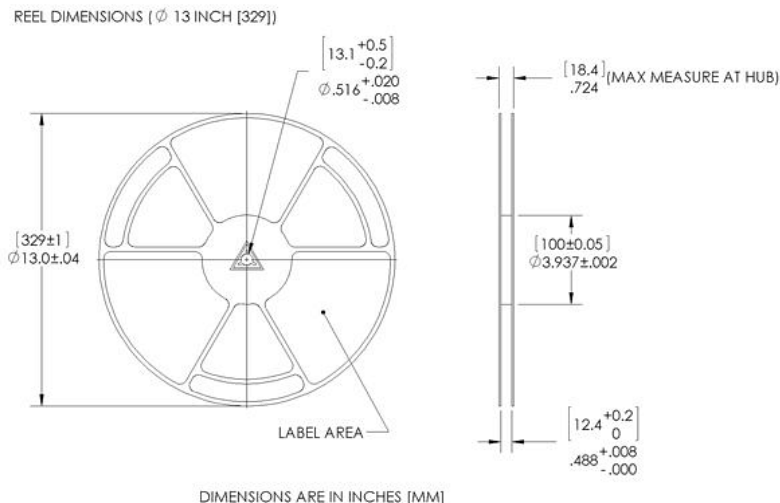
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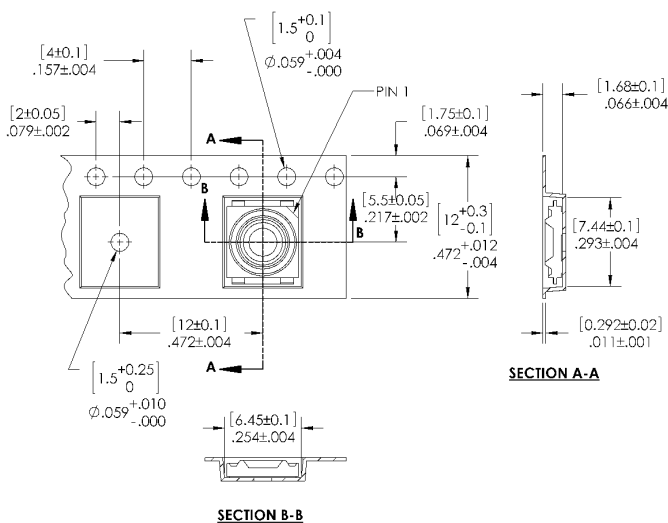


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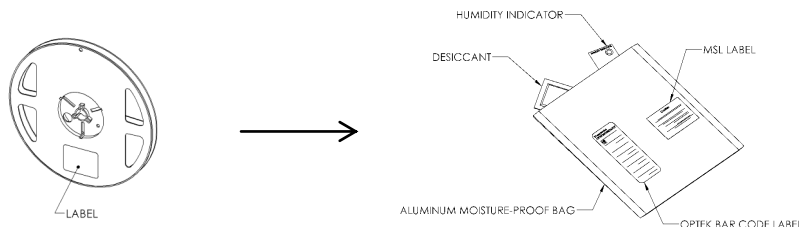
### Reel Dimensions: 13 - inch reel



### Carrier Tape Dimensions: Loaded quantity 2000 pieces per reel



### Moisture Resistant Packaging



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