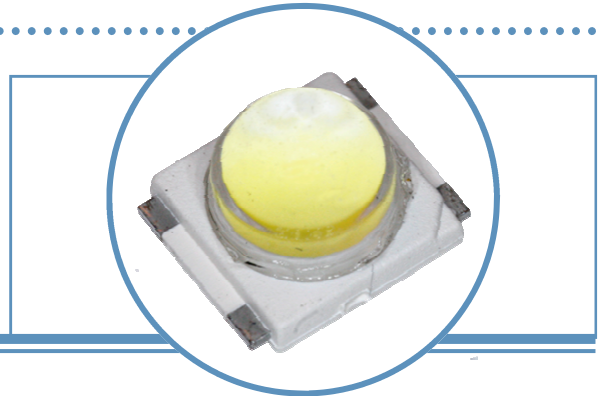


# 1-Watt SMD 6mm

## With Dome Lens

### OVSPxBCR44 Series

- Robust energy-efficient design with long operating life
- Low thermal resistance
- Exceptional spatial uniformity
- Optional optics to suit application
- Available in yellow, red and white

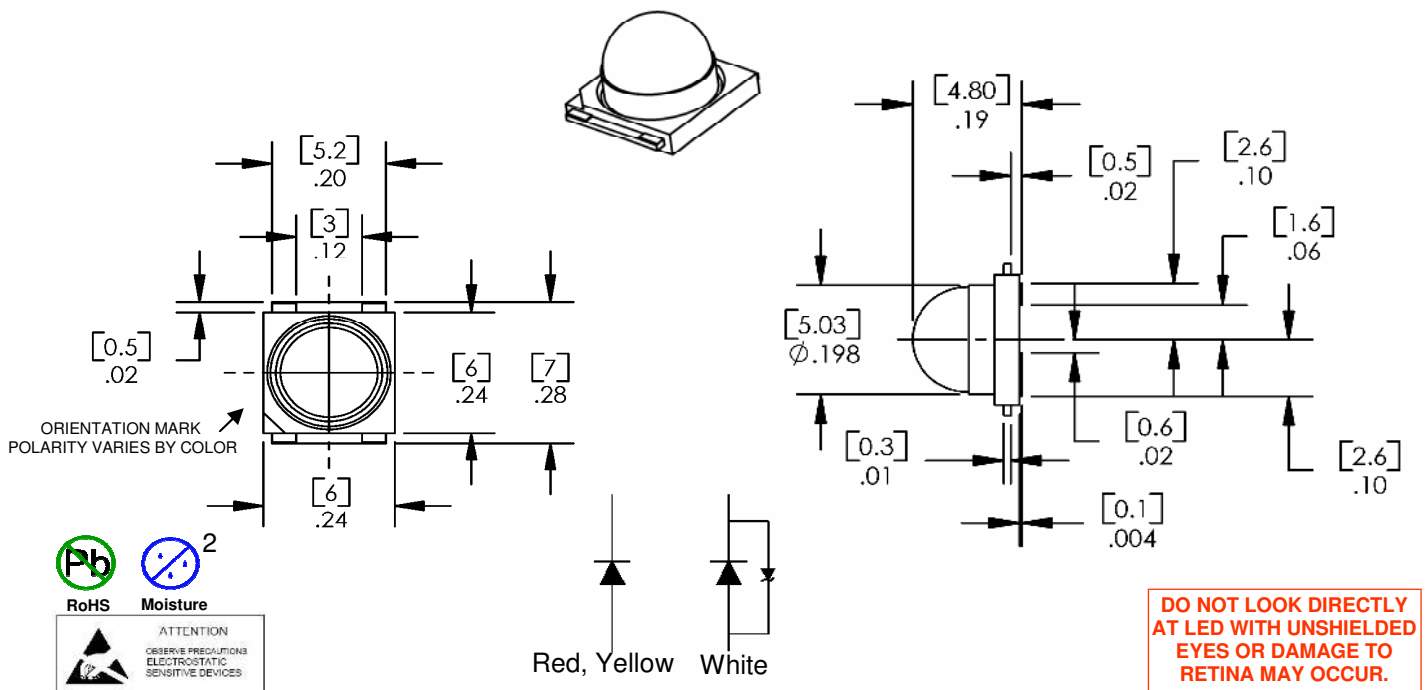


The **OVSPxBCR44 Series** is an energy-efficient packaged LED source that offers high luminance, and a long operating lifespan. These devices offer a focused viewing angle and a water-clear lens, making them highly suitable for conventional lighting and specialized applications. Optional optics are offered 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	Emitted Color	Typical Luminous Flux (lm)	Typical On-Axis Intensity (cd)	Lens Color
OVSPRBCR44	40°	Red	30	37	Water Clear
OVSPYBCR44	40°	Yellow	35	45	Water Clear
OVSPWBCR44	60°	White	52	42	Water Clear
OVSPWWBCR44	60°	Warm White	40	30	Water Clear



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# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series



### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

	Red, Yellow	White	Warm White
DC Forward Current	400mA	350mA	350mA
Peak Pulsed For-	500mA	1000mA	1000mA
Reverse Voltage	12V	Not designed for reverse bias	Not designed for reverse bias
Junction Tempera-	125°C		
Power Dissipation	1200mW		
Storage and Oper-	-40° ~ +100 °C		
ESD Threshold	2000V		

Notes:

1. Pulse width  $t_p \leq 10\mu\text{s}$ , Duty cycle = 0.1
2. Thermal resistance = 20K/W for red and yellow; and 18K/W for white

### 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	
$\Phi$	Luminous Flux	Red	22	30	35	lm
		Yellow	25	35	49	lm
$I_V$	Luminous Intensity	Red	28.5	40	45	cd
		Yellow	28.5	45	56	cd
$\lambda_D$	Dominant Wavelength	Red	620	625	630	nm
		Yellow	585	589	597	nm
$I_R$	Reverse Current @ 12V	----	100	----	$\mu\text{A}$	
$2\Theta_{1/2}$	50% Power Angle	----	40	----	deg	

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	
$V_F$	Forward Voltage	----	3.6	4.0	V	
$\Phi$	Luminous Flux	White	39	52	61	lm
		Warm White	25	40	50	lm
$I_V$	Luminous Intensity	White	35.5	42	56	cd
		Warm White	9	13	18	cd
$I_R$	Reverse Current	----	10	----	$\mu\text{A}$	
$2\Theta_{1/2}$	50% Power Angle	----	60	----	deg	

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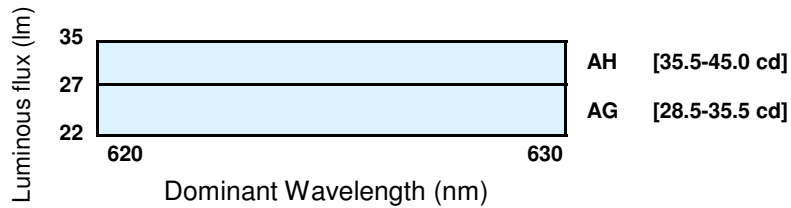
# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series

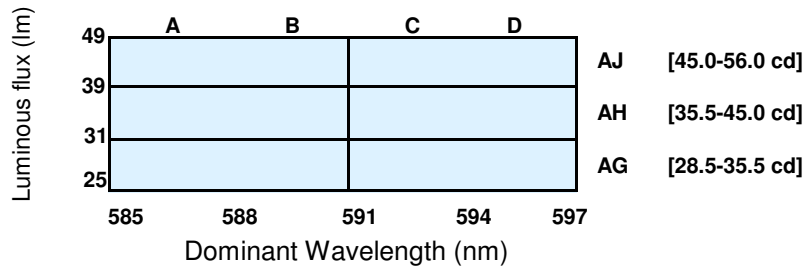
### Standard Bins

Lamps are sorted to luminous flux ( $\Phi$ ), luminous intensity ( $I_V$ ) and dominant wavelength ( $\lambda_D$ ) bins shown. Orders may be filled with any or all bins contained as below.

#### OVSPRBCR44 (RED) ( $I_F = 400$ mA)



#### OVSPYBCR44 (YELLOW) ( $I_F = 400$ mA)



#### Important Notes:

1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. To designate luminous flux ranks, please contact OPTEK.
3. Pb content <1000PPM.

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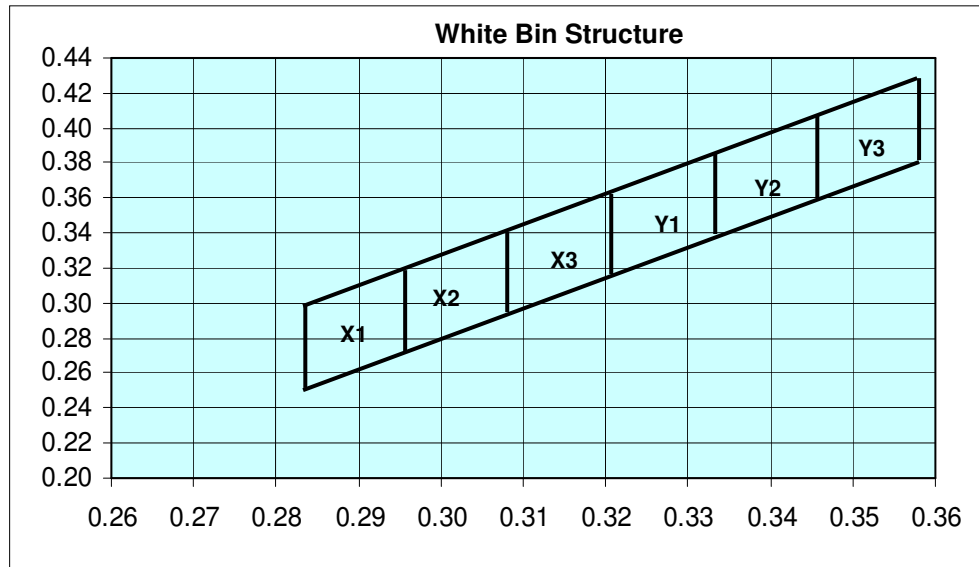
# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series



### Standard Bins ( $I_F = 350 \text{ mA}$ ) **OVSPWBCR44 (White)**

Lamps are sorted to luminous flux ( $\Phi$ ), luminous intensity ( $I_v$ ), chromaticity coordinates, and correlated color temperature (CCT) bins shown. Orders may be filled with any or all bins contained as below.



Bin		1	2	3	4
X <sub>1</sub>	C <sub>x</sub>	0.2775	0.29	0.29	0.2775
	C <sub>y</sub>	0.243	0.265	0.31	0.288
X <sub>2</sub>	C <sub>x</sub>	0.29	0.3025	0.3025	0.29
	C <sub>y</sub>	0.265	0.286	0.331	0.31
X <sub>3</sub>	C <sub>x</sub>	0.3025	0.315	0.315	0.3025
	C <sub>y</sub>	0.286	0.308	0.353	0.331
Y <sub>1</sub>	C <sub>x</sub>	0.315	0.3275	0.3275	0.315
	C <sub>y</sub>	0.308	0.33	0.375	0.353
Y <sub>2</sub>	C <sub>x</sub>	0.3275	0.34	0.34	0.3275
	C <sub>y</sub>	0.33	0.351	0.396	0.375
Y <sub>3</sub>	C <sub>x</sub>	0.34	0.3525	0.3525	0.34
	C <sub>y</sub>	0.351	0.373	0.418	0.396

Color Bin	Minimum CCT (K)	Maximum CCT (K)
Y3	4500	5000
Y2	5000	5500
Y1	5500	6000
X3	6000	7000
X2	7000	8000
X1	8000	10000

	Luminous Flux (lm)		Luminous Intensity (cd)	
Bin	Min	Max	Min	Max
AH	39	50	35	45
AJ	50	63	45	56

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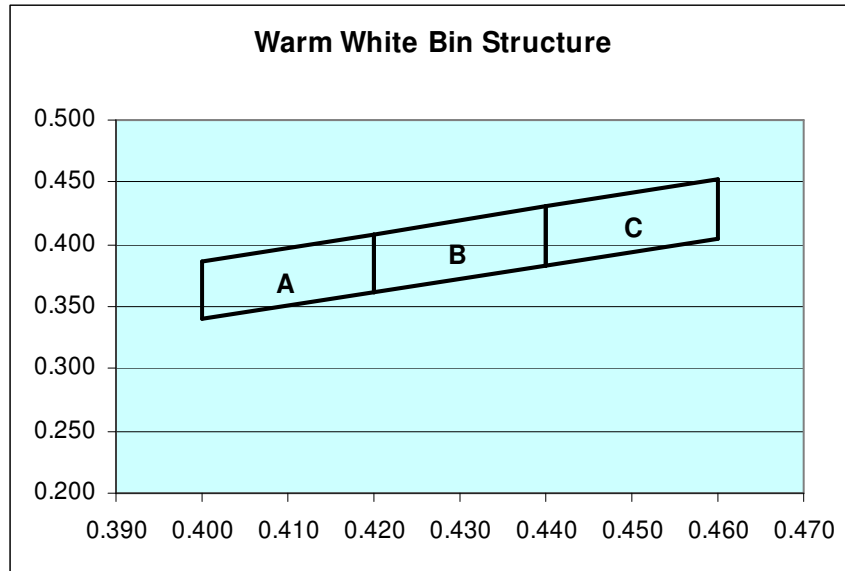
# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series



### Standard Bins ( $I_F = 350 \text{ mA}$ ) **OVSPW~~W~~BCR44 (Warm White)**

Lamps are sorted to luminous flux ( $\Phi$ ), luminous intensity ( $I_v$ ), chromaticity coordinates, and correlated color temperature (CCT) bins shown. Orders may be filled with any or all bins contained as below.



Bin		1	2	3	4
A	$C_x$	0.400	0.420	0.420	0.400
	$C_y$	0.340	0.362	0.408	0.387
B	$C_x$	0.420	0.440	0.440	0.420
	$C_y$	0.362	0.383	0.430	0.408
C	$C_x$	0.440	0.460	0.460	0.440
	$C_y$	0.383	0.405	0.452	0.430

Color Bin	Minimum CCT (K)	Maximum CCT (K)
A	3300	3600
B	3000	3300
C	2800	3000

Bin	Luminous Flux (lm)		Luminous Intensity (cd)	
	Min	Max	Min	Max
AB	25.0	32.0	9	11.25
AC	32.0	39.0	11.25	14
AD	39.0	50.0	14	18

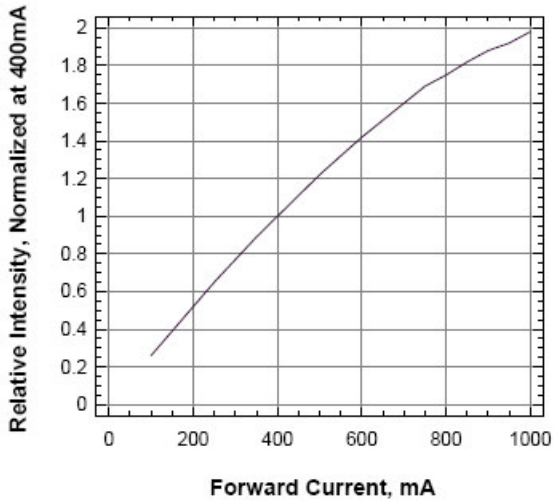
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# 1-Watt SMD 6mm Dome Lens

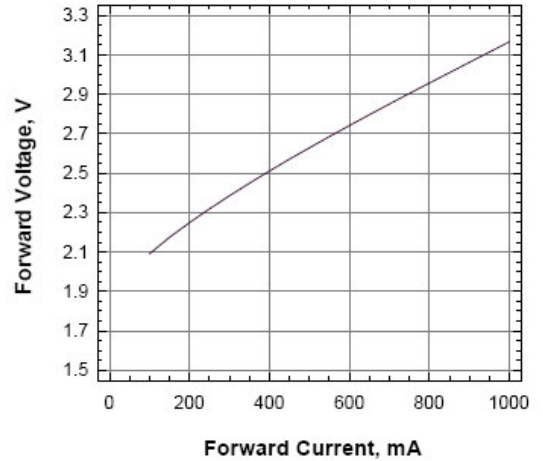
## OVSPxBCR44 Series

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

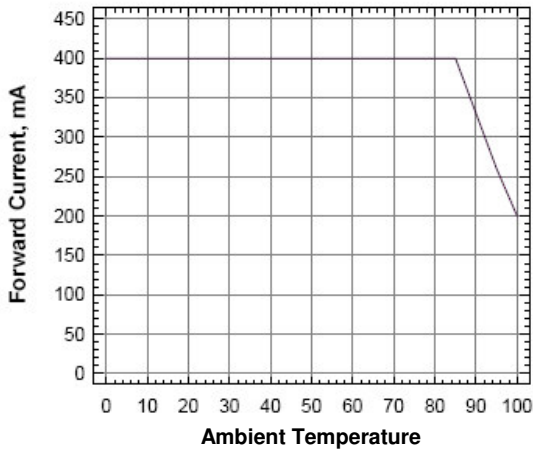
Relative Intensity Vs Forward Current



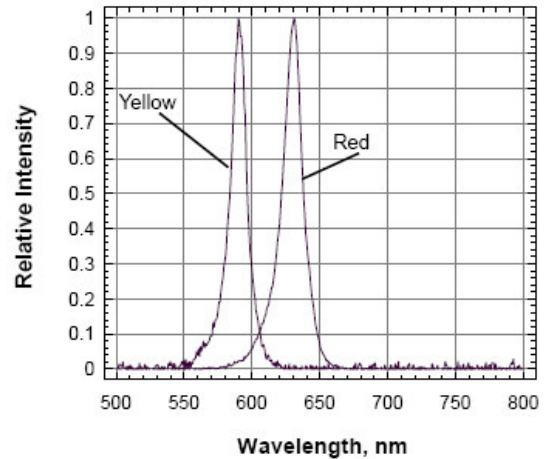
Forward Voltage Vs Forward Current



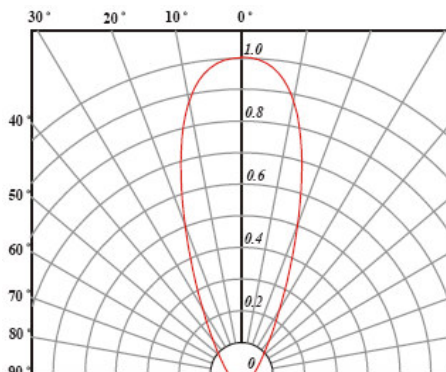
Forward Current Vs Ambient Temperature



Relative Intensity Vs Wavelength



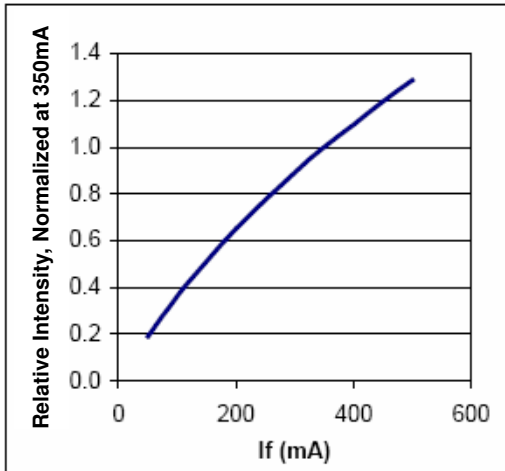
Radiation Pattern



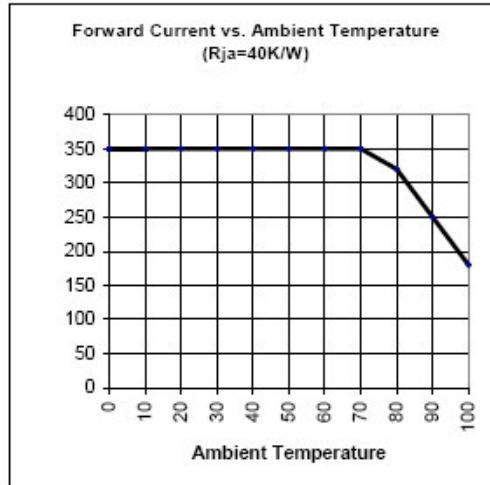
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Typical Electro-Optical Characteristics Curves—White

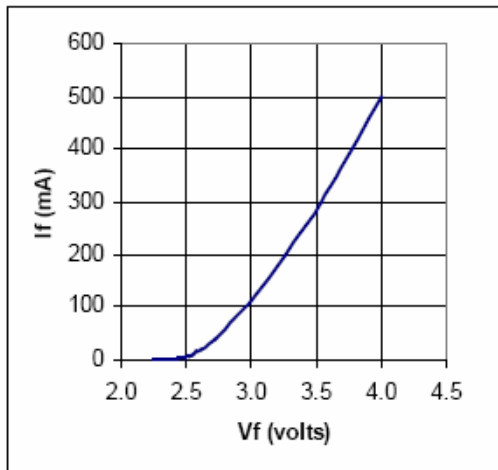
Relative luminous intensity vs. forward current.



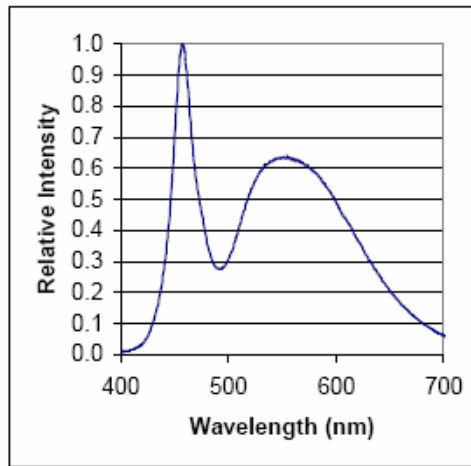
Maximum Permissible Current



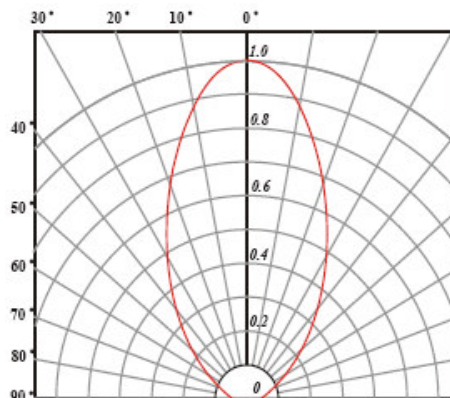
Forward current vs. forward voltage.



Relative Spectra Emission



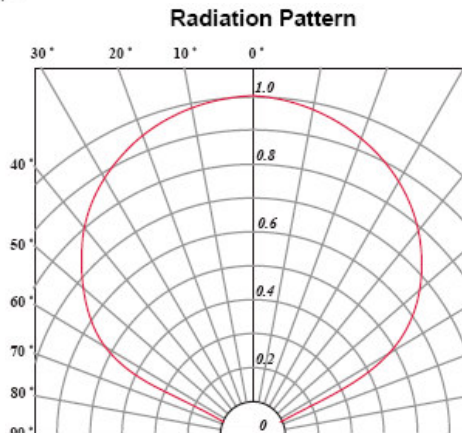
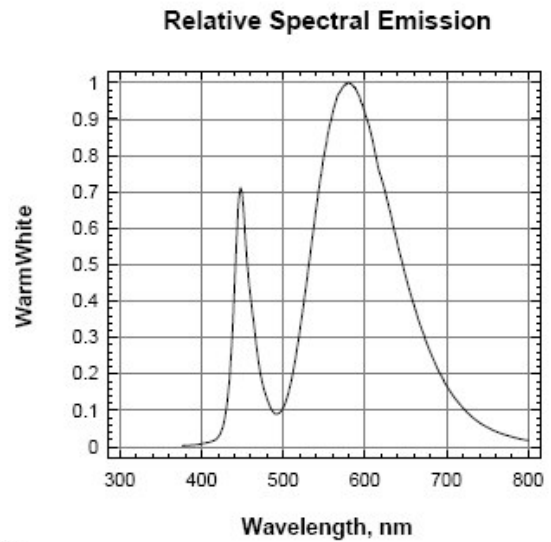
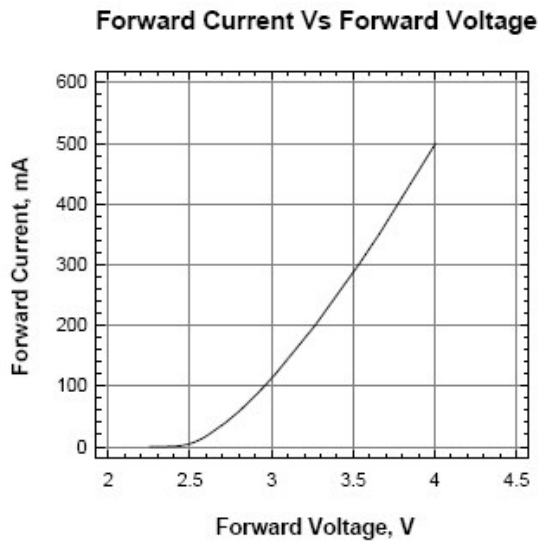
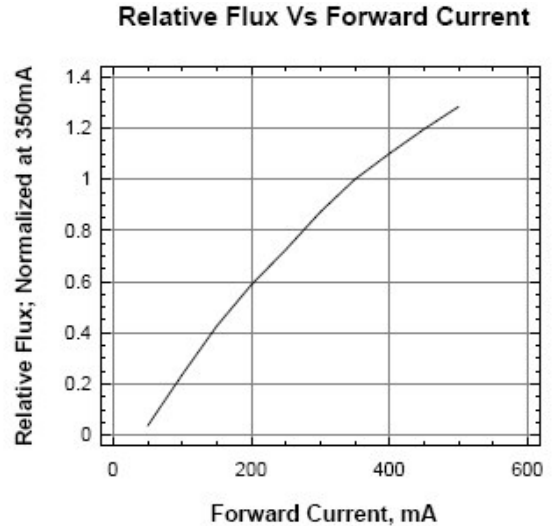
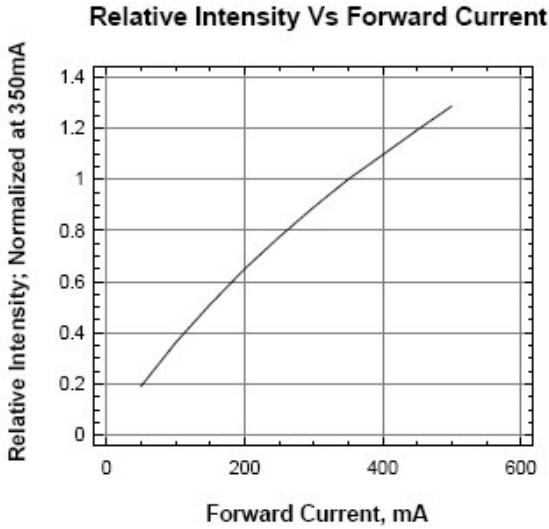
Radiation pattern.



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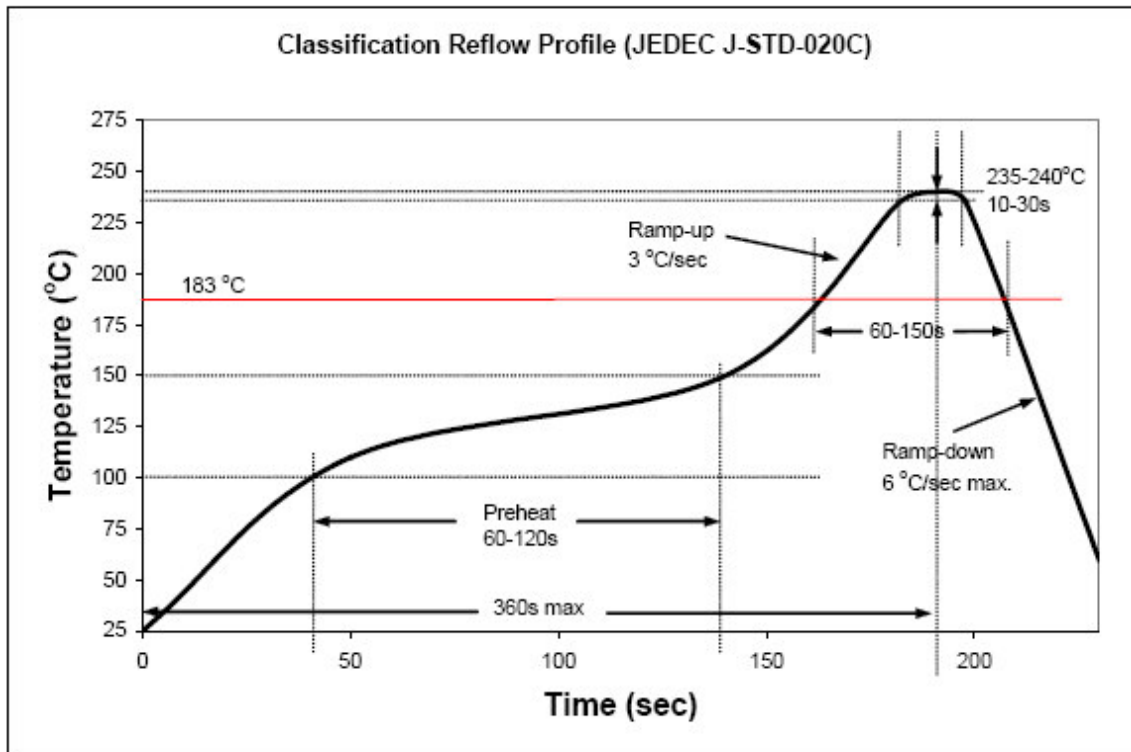
Typical Electro-Optical Characteristics Curves—Warm White



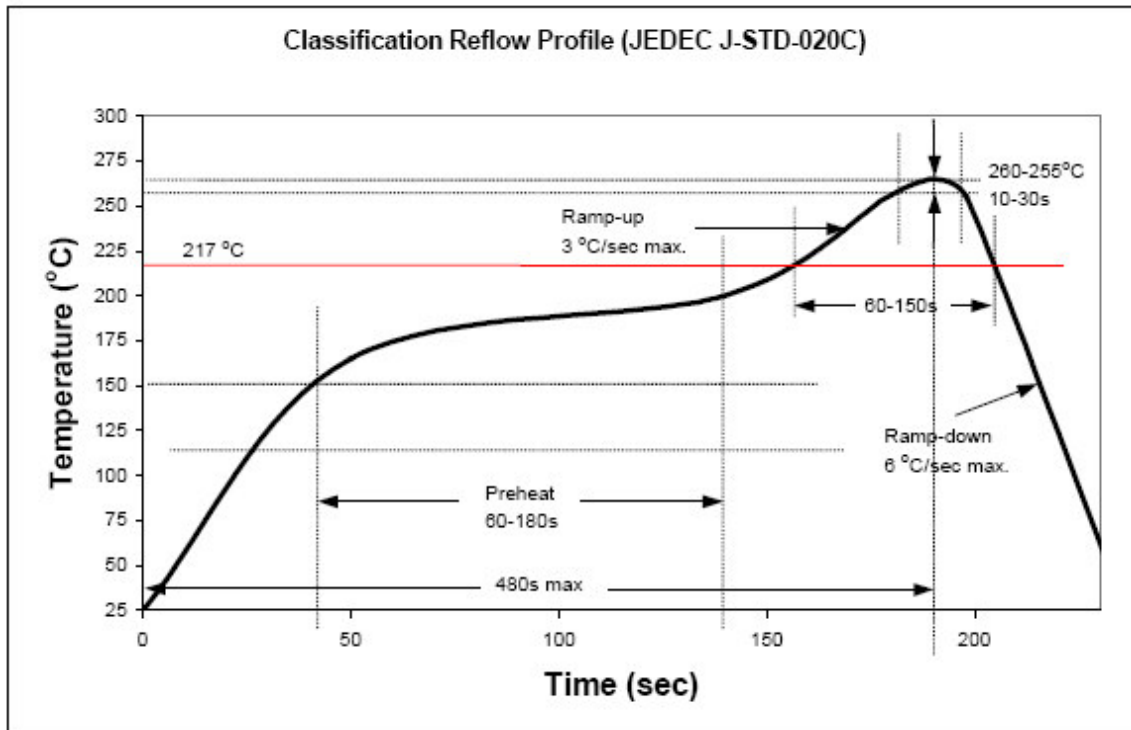
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**Recommended Sn-Pb IR-Reflow Soldering Profile.**



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



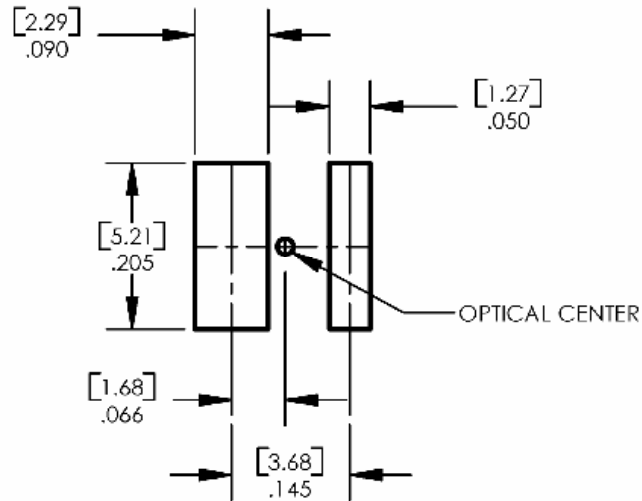
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# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series

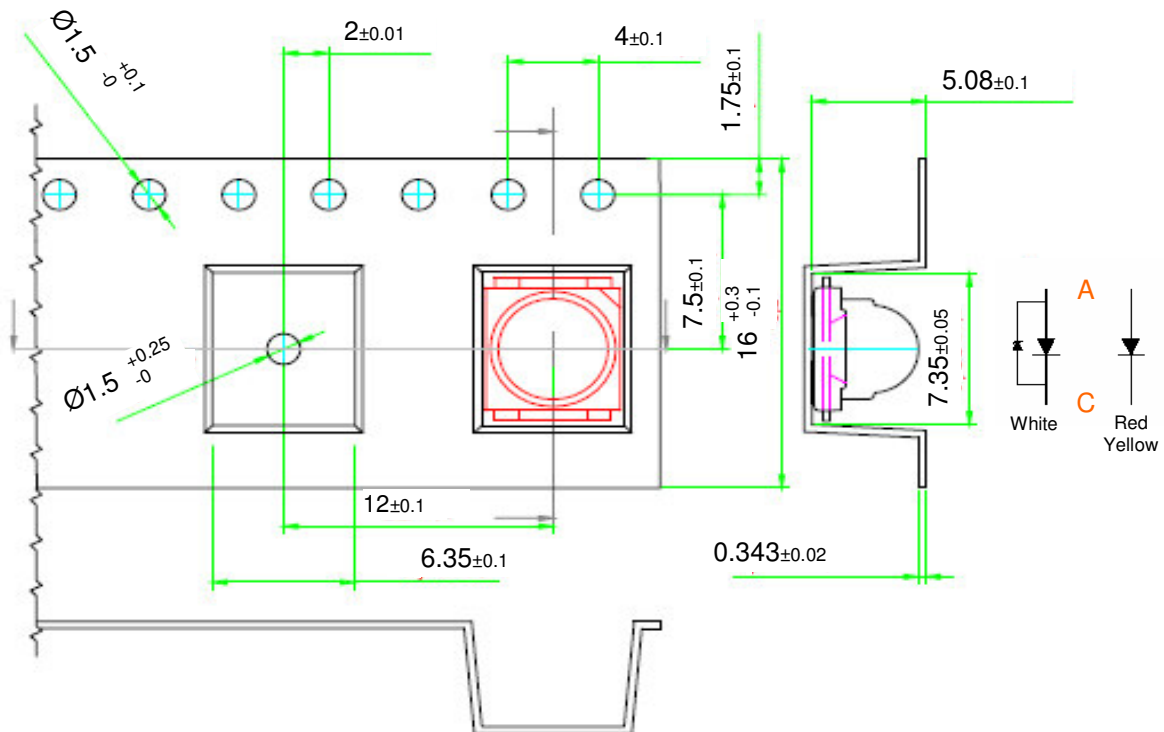
### Solder Pad Design

Note: Metal core circuit board (MCPCB) is highly recommended for high density applications. Please consult sales and marketing for additional information.



### Taping and Orientation

Loaded quantity 1000 pieces per reel

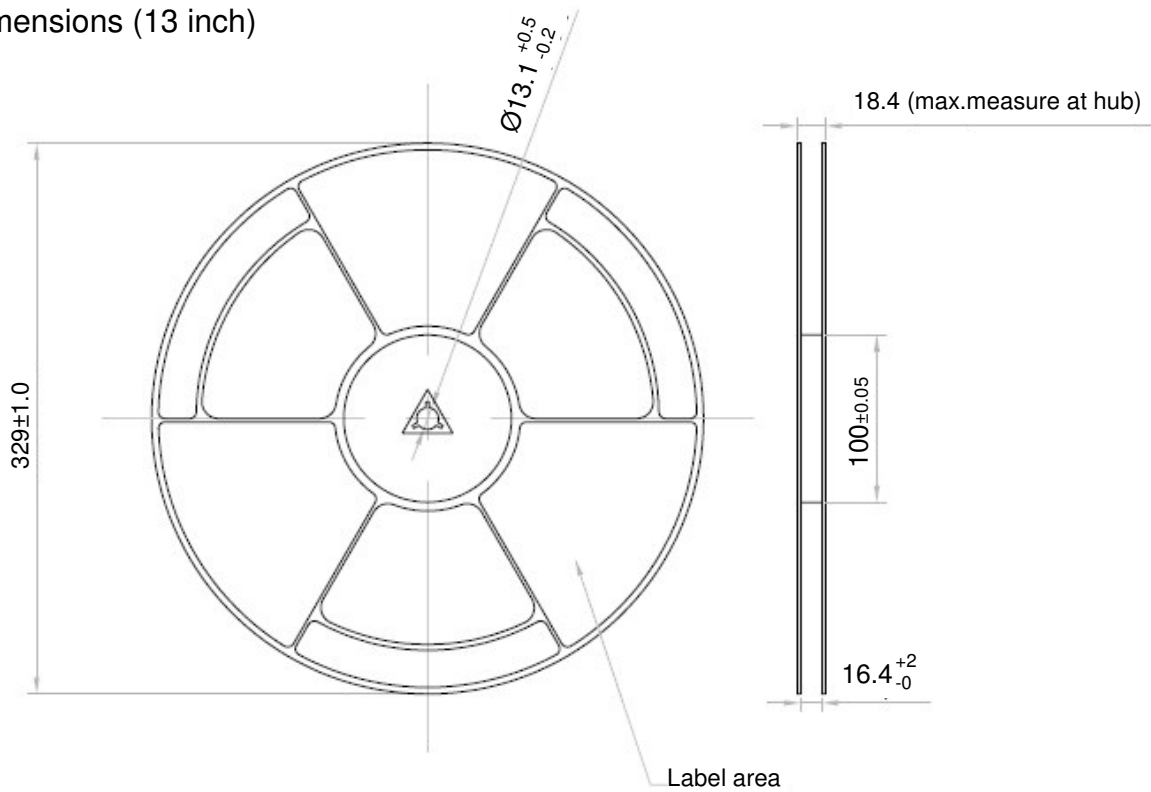


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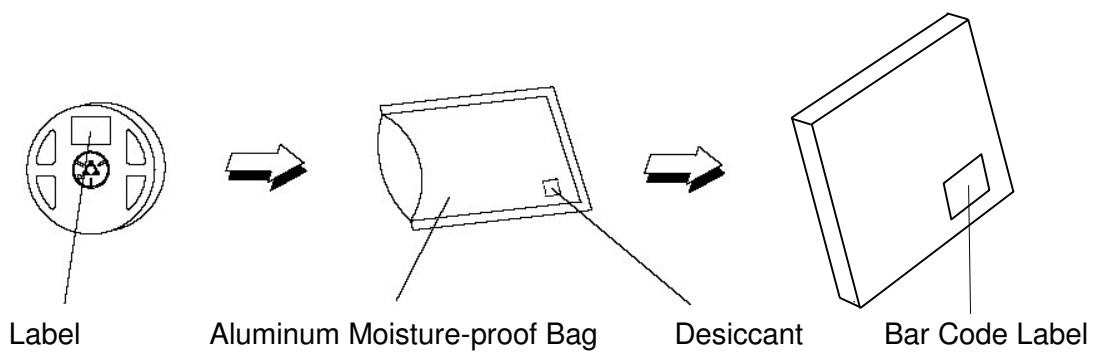
# 1-Watt SMD 6mm Dome Lens

## OVSPxBCR44 Series

### Reel Dimensions (13 inch)



### Moisture Resistant Packaging



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