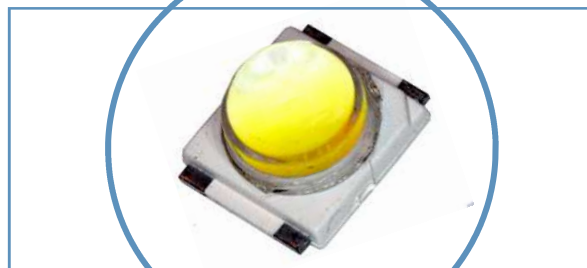


1-Watt SMD 6x6mm

With Dome Lens

OVSPxBCR44 Series

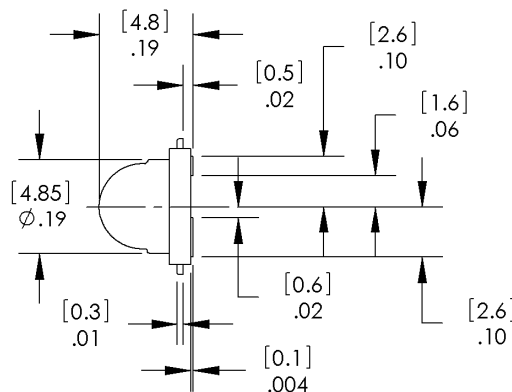
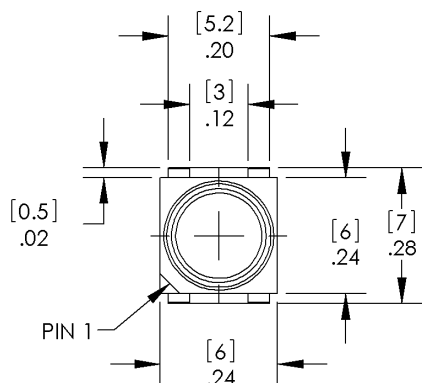
- Robust energy-efficient design with long operating life
- Low thermal resistance
- Medium beam angle
- High luminous intensity



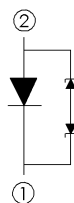
Applications

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

| Part Number | Beam Angle | Emitted Color | Typ. Dominant Wavelength (nm) | Typ. Luminous Intensity (mcd) | Lens Color |
|-------------|------------|---------------|-------------------------------|-------------------------------|------------|
| OVSPBBCR44 | 45° | Blue | 460 | 18,000 | Clear |
| OVSPGBCR44 | 40° | Green | 528 | 67,500 | |
| OVSPRBCR44 | 40° | Red | 625 | 56,000 | |
| OVSPW1BCR44 | 70° | White | N/A | 54,000 | |
| OVSPYBCR44 | 40° | Yellow | 591 | 45,000 | |



DIMENSIONS ARE IN INCHES [MM]
GENERAL TOLERANCES ±.008 [0.20]



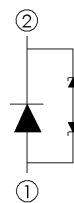
Blue

| | |
|---------|-------|
| Pin 1 | Pin 2 |
| Cathode | Anode |

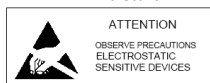
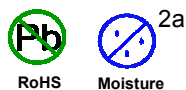


Green, Red, Yellow

| | |
|-------|---------|
| Pin 1 | Pin 2 |
| Anode | Cathode |



White



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

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 6x6mm Dome Lens

OVSPxBCR44 Series



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| | | |
|---|--------------------|-------------------------------|
| Storage Temperature Range | | -40 ~ +100 °C |
| Operating Temperature Range | | -40 ~ +100 °C |
| Reverse Voltage | Blue, White | Not designed for reverse bias |
| | Green | 5 V |
| | Red, Yellow | 12V |
| Continuous Forward Current | Blue, Green, White | 350 mA |
| | Red, Yellow | 400 mA |
| Peak Forward Current (10% Duty Cycle, 1 kHz) | Blue, Green | 1000 mA |
| | Red, Yellow, White | 500 mA |
| Power Dissipation | | 1200 mW |
| LED Junction Temperature | Blue, Green | 120°C |
| | Red, Yellow, White | 125°C |
| Electrostatic Discharge Classification (JEDEC-JESD22-A114F) | | Class 2 |
| Moisture Sensitivity Level (IPC/JEDEC J-STD-020C) | | 2a / 672 Hrs |
| Lead Soldering Temperature (3 mm from the base of the epoxy bulb) | | 260° C / 5 seconds |

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | PARAMETER | COLOR | MIN | TYP | MAX | UNITS | CONDITIONS |
|-----------------|---------------------|-------------|--------|--------|--------|-------|-----------------------|
| I_V | Luminous Intensity | Blue | 11,250 | 18,000 | 22,400 | mcd | $I_F = 350\text{ mA}$ |
| | | Green | 45,000 | 67,500 | 90,000 | | |
| | | Red | 35,500 | 56,000 | 71,500 | | $I_F = 400\text{ mA}$ |
| | | Yellow | 35,500 | 45,000 | 56,000 | | |
| V_F | Forward Voltage | Blue, Green | 3.0 | 3.6 | 4.0 | V | $I_F = 350\text{ mA}$ |
| | | Red, Yellow | 2.2 | 2.5 | 2.8 | | $I_F = 400\text{ mA}$ |
| λ_D | Dominant Wavelength | Blue | 455 | 460 | 465 | nm | $I_F = 350\text{ mA}$ |
| | | Green | 520 | 528 | 535 | | |
| | | Red | 620 | 625 | 630 | | $I_F = 400\text{ mA}$ |
| | | Yellow | 585 | 591 | 597 | | |
| $2\Theta_{1/2}$ | 50% Power Angle | Blue | ---- | 45 | ---- | deg | |
| | | Green | | 40 | | | |
| | | Red | | 40 | | | |
| | | Yellow | | 40 | | | |

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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS |
|-----------------|--------------------|--------|--------|--------|-------|
| V_F | Forward Voltage | 3.0 | 3.5 | 4.0 | V |
| Φ | Luminous Flux | ---- | 62 | ---- | lm |
| I_V | Luminous Intensity | 45,000 | 56,000 | 71,500 | mcd |
| $2\Theta_{1/2}$ | 50% Power Angle | ---- | 70 | ---- | deg |

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 6x6mm Dome Lens

OVSPxBCR44 Series



Standard Bins

LEDs are sorted to the luminous intensity (I_v) and dominant wavelength (nm) codes listed below. Each reel consists of a single intensity code and a single color code. Orders are filled utilizing all of the intensity codes and color codes listed in the following tables. Optek will not accept orders for single intensity codes or single color codes.

Luminous Intensity (I_v) @ 400mA

| Red: OVSPRBCR44 | | |
|--------------------|-----------|-----------|
| Code | Min (mcd) | Max (mcd) |
| AH | 35,500 | 45,000 |
| AJ | 45,000 | 56,000 |
| AK | 56,000 | 71,500 |
| | | |
| Yellow: OVSPYBCR44 | | |
| Code | Min (mcd) | Max (mcd) |
| AH | 35,500 | 45,000 |
| AJ | 45,000 | 56,000 |
| AK | 56,000 | 71,500 |

Luminous Intensity (I_v) @ 350mA

| Blue: OVSPBBCR44 | | |
|-------------------|-----------|-----------|
| Code | Min (mcd) | Max (mcd) |
| AC | 11,250 | 14,000 |
| AD | 14,000 | 18,000 |
| AE | 18,000 | 22,400 |
| | | |
| Green: OVSPGBCR44 | | |
| Code | Min (mcd) | Max (mcd) |
| AJ | 45,000 | 56,000 |
| AK | 56,000 | 71,500 |
| AL | 71,500 | 90,000 |

Dominant Wavelength (nm)

| Red: OVSPRBCR44 | |
|--------------------|--------------|
| Full | 620 - 630 nm |
| | |
| Yellow: OVSPYBCR44 | |
| A | 585 - 588 nm |
| B | 588 - 591 nm |
| C | 591 - 594 nm |
| D | 594 - 597 nm |

| Blue: OVSPBBCR44 | |
|-------------------|--------------|
| A | 455 - 460 nm |
| B | 460 - 465 nm |
| | |
| Green: OVSPGBCR44 | |
| AO | 520 - 525 nm |
| A | 525 - 530 nm |
| B | 530 - 535 nm |

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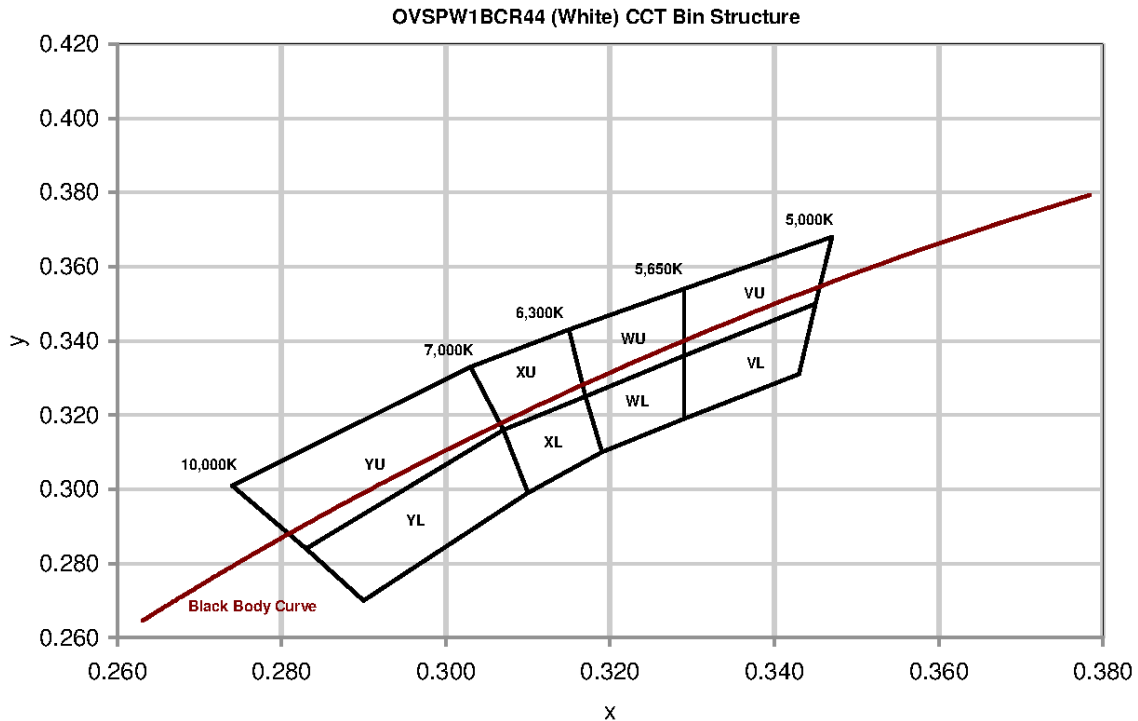
1-Watt SMD 6x6mm Dome Lens

OVSPxBCR44 Series



Standard Bins

LEDs are sorted to the luminous intensity (I_v) and CCT codes listed below. Each reel consists of a single intensity code and a single CCT code. Orders are filled utilizing all of the intensity codes and CCT codes listed in the following tables. Optek will not accept orders for single intensity codes or single CCT codes.



Chromaticity Coordinates (x, y)

| Rank | YU | | | | YL | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cx | 0.274 | 0.283 | 0.307 | 0.303 | 0.283 | 0.290 | 0.310 | 0.307 |
| Cy | 0.301 | 0.284 | 0.316 | 0.333 | 0.284 | 0.270 | 0.299 | 0.316 |
| Rank | XU | | | | XL | | | |
| Cx | 0.303 | 0.307 | 0.317 | 0.315 | 0.307 | 0.310 | 0.319 | 0.317 |
| Cy | 0.333 | 0.316 | 0.325 | 0.343 | 0.316 | 0.299 | 0.310 | 0.325 |
| Rank | WU | | | | WL | | | |
| Cx | 0.315 | 0.317 | 0.329 | 0.329 | 0.317 | 0.319 | 0.329 | 0.329 |
| Cy | 0.343 | 0.325 | 0.336 | 0.354 | 0.325 | 0.310 | 0.319 | 0.336 |
| Rank | VU | | | | VL | | | |
| Cx | 0.329 | 0.329 | 0.345 | 0.347 | 0.329 | 0.329 | 0.343 | 0.345 |
| Cy | 0.354 | 0.336 | 0.350 | 0.368 | 0.336 | 0.319 | 0.331 | 0.350 |

| I_v | Luminous Intensity | |
|-------|--------------------|-----------|
| Bin | Min (mcd) | Max (mcd) |
| AJ | 45,000 | 56,000 |
| AK | 56,000 | 71,500 |

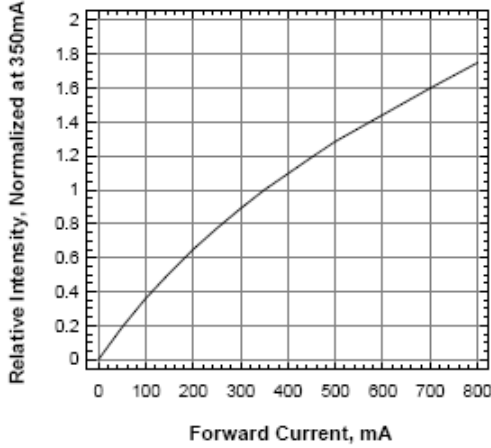
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

1-Watt SMD 6x6mm Dome Lens OVSPxBCR44 Series

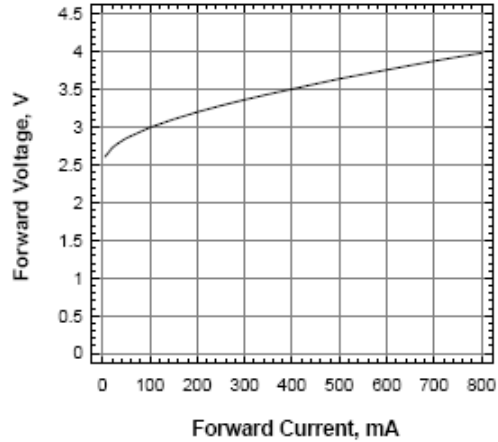


Typical Electro-Optical Characteristics Curves - White

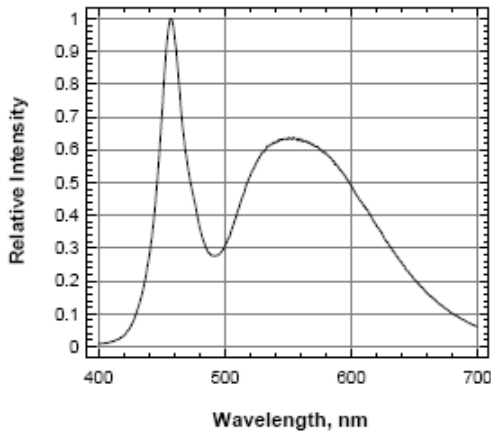
Relative Luminous Intensity Vs Forward Current



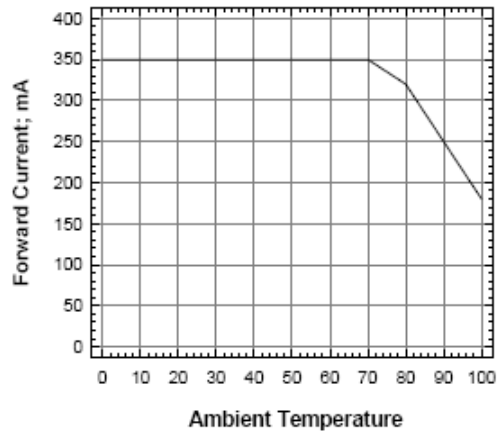
Forward Voltage Vs Forward Current



Relative Intensity Vs Wavelength



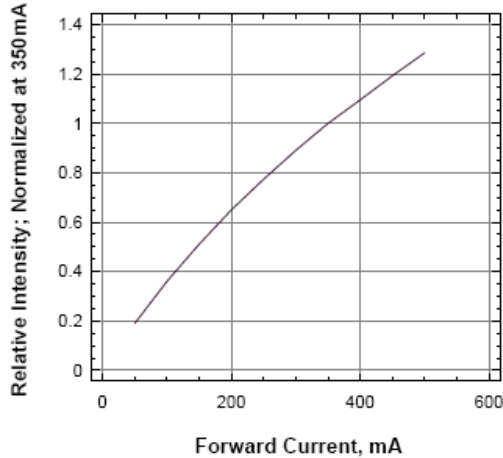
Forward Current Vs Ambient Temperature (R_{ja}=40 K/W)



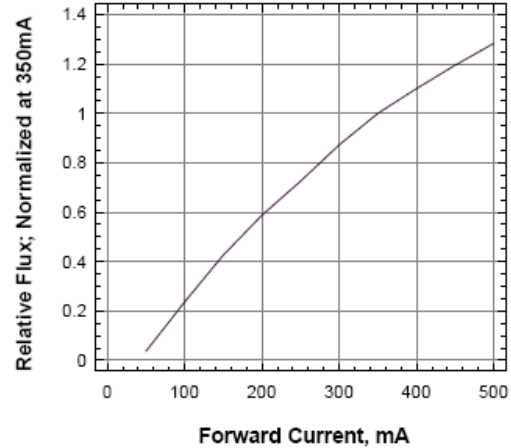
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Typical Electro-Optical Characteristics Curves - Blue

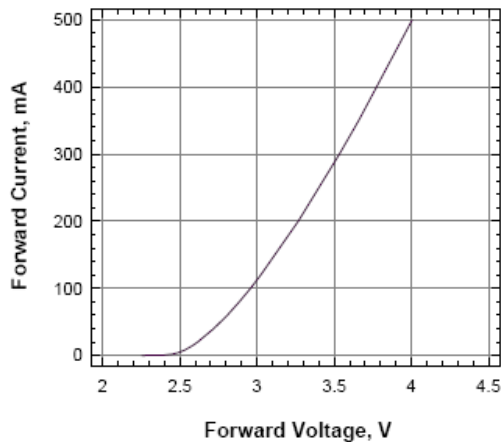
Relative Intensity Vs Forward Current



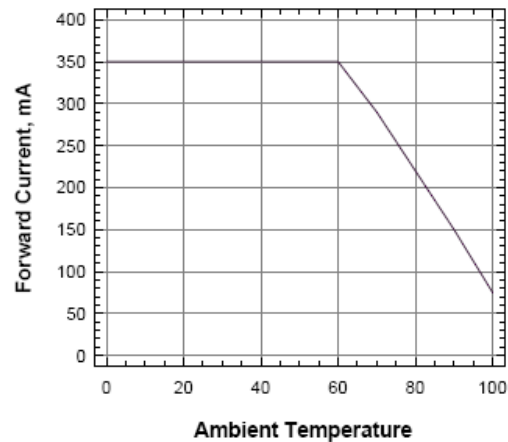
Relative Flux Vs Forward Current



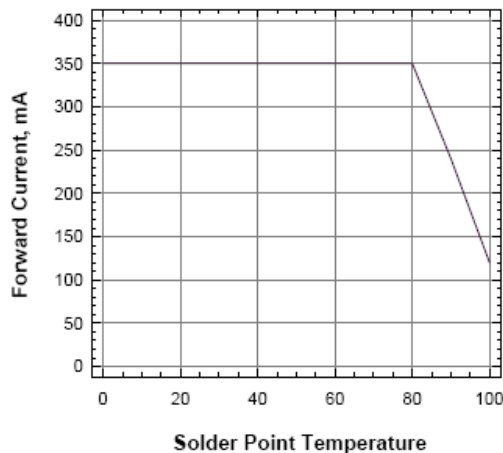
Forward Current Vs Forward Voltage



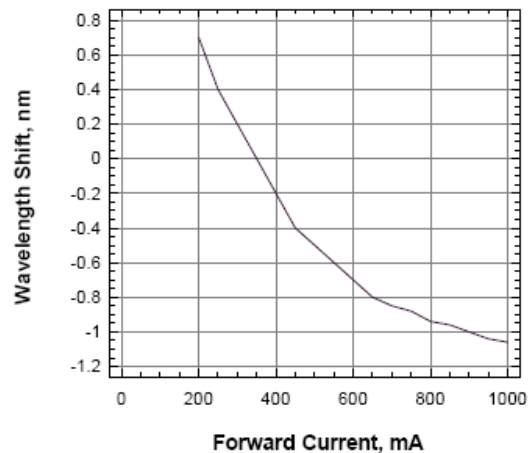
Forward Current Vs Ambient Temperature (R_{ja}=40K/W)



Forward Current Vs Solder Point Temperature

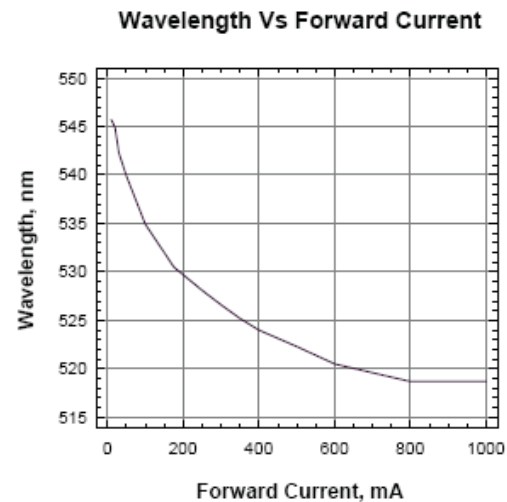
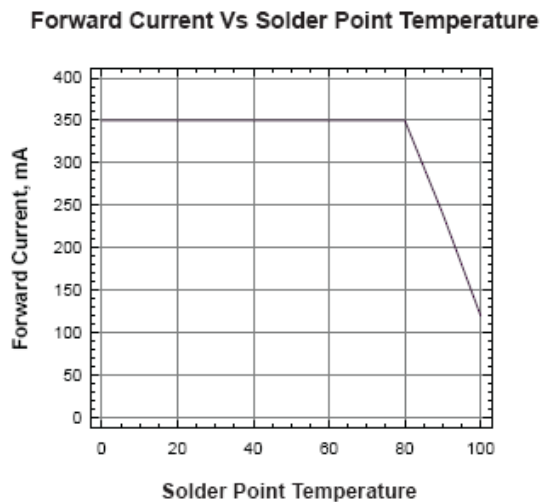
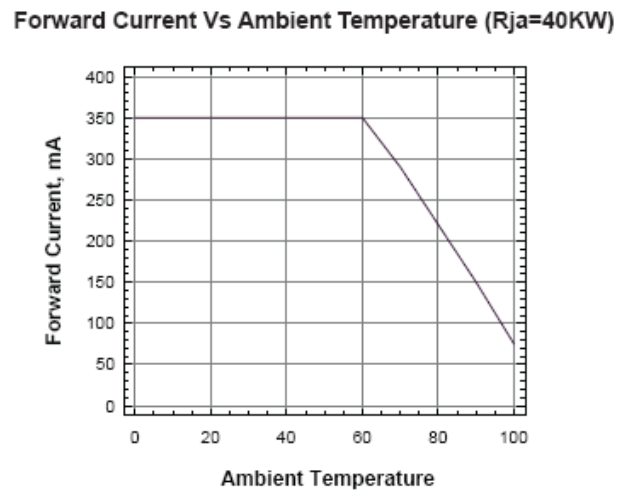
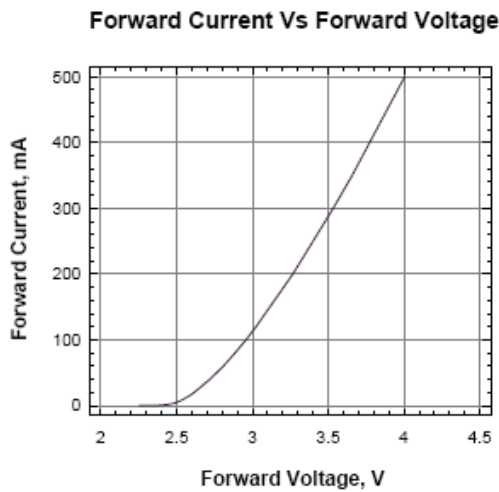
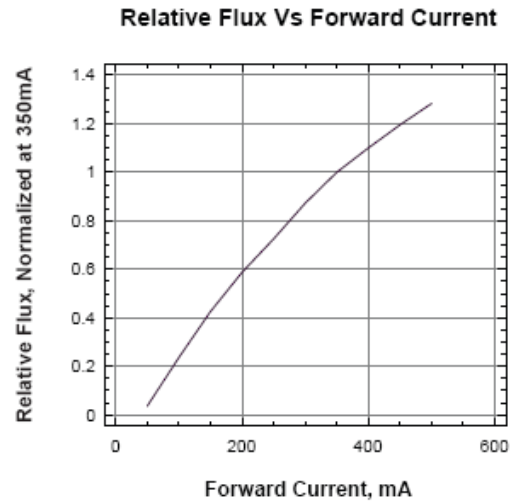
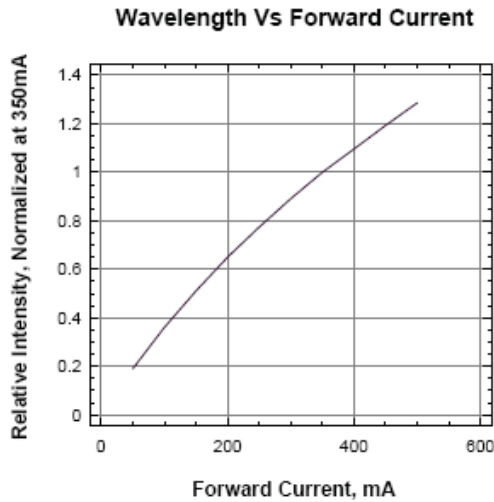


Dominant Wavelength Shift Vs Forward Current



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

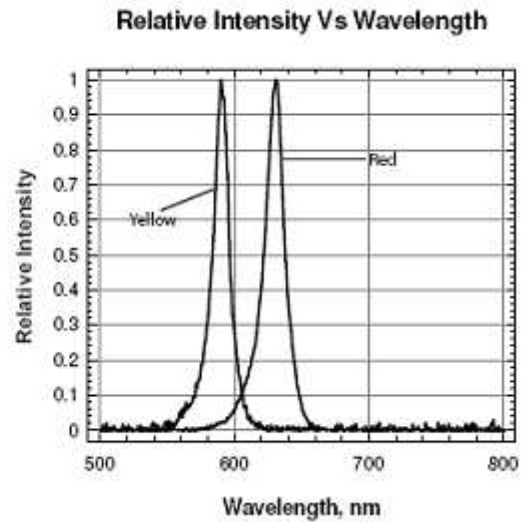
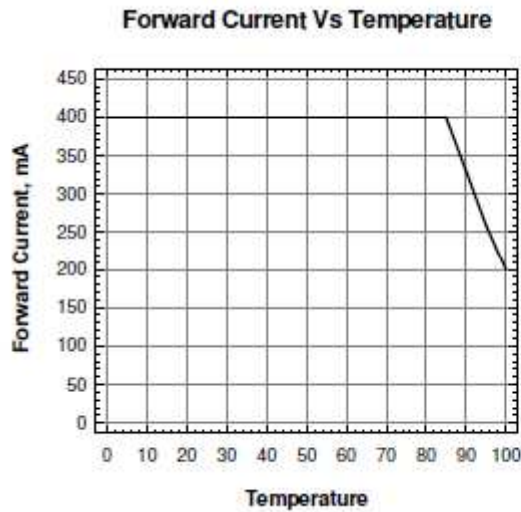
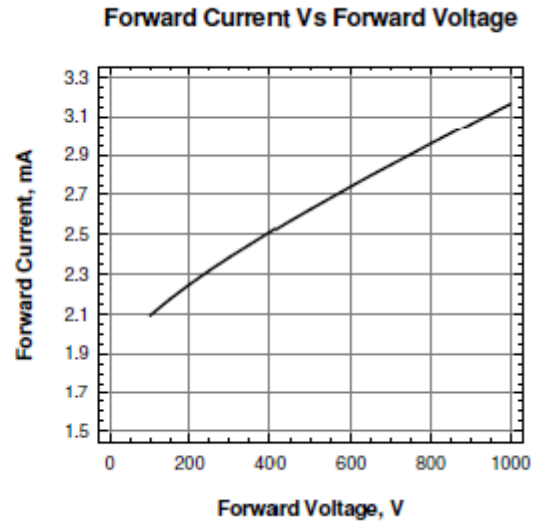
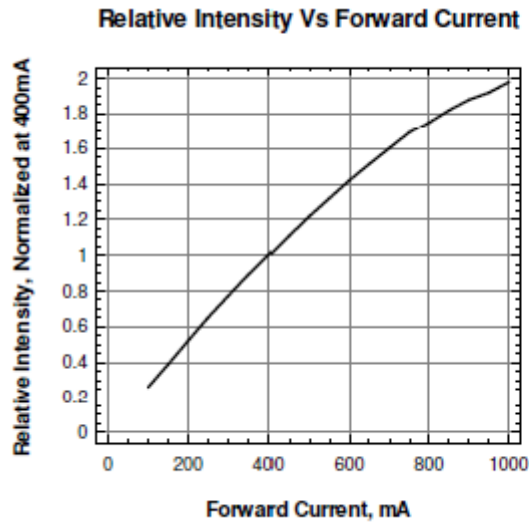
Typical Electro-Optical Characteristics Curves - Green



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

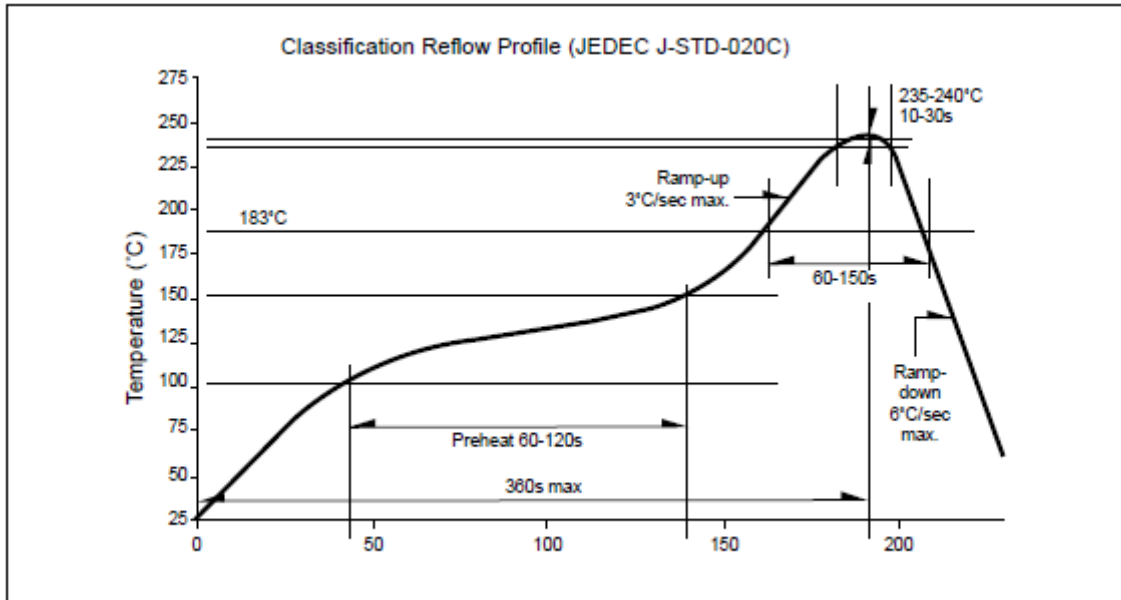
1-Watt SMD 6x6mm Dome Lens OVSPxBCR44 Series

Typical Electro-Optical Characteristics Curves - Red & Yellow

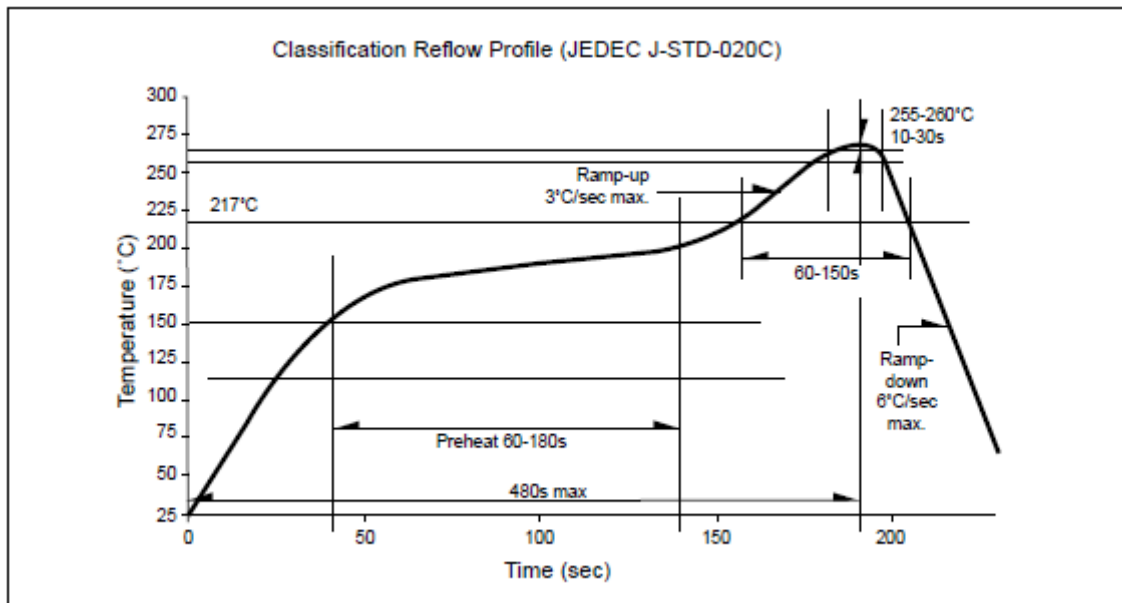


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Recommended SN-Pb IR-Reflow Soldering Profile



Recommended PB-free Soldering Profile



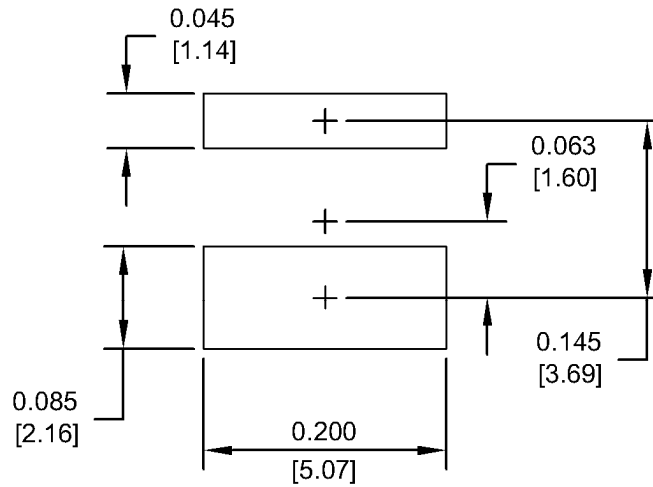
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

1-Watt SMD 6x6mm Dome Lens

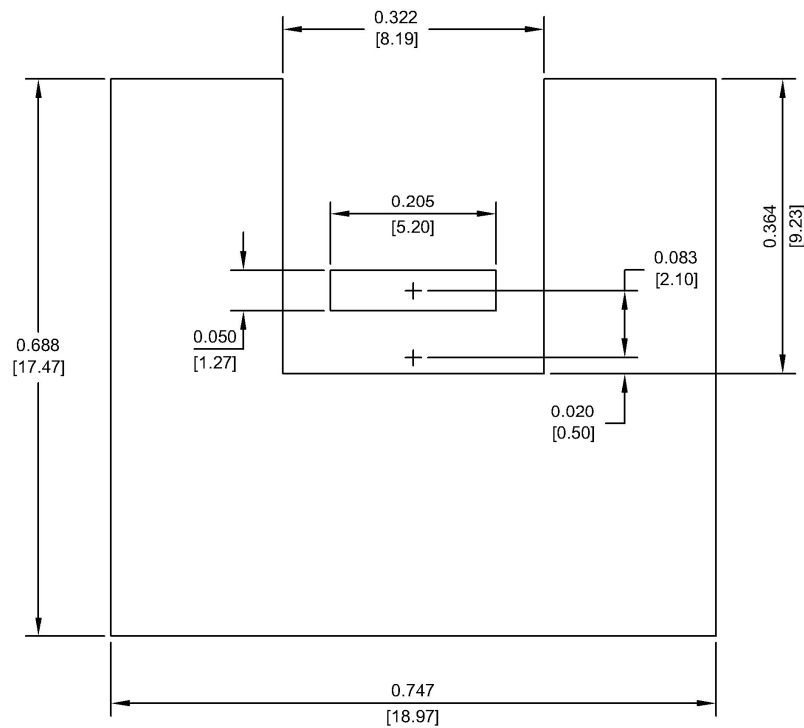
OVSPxBCR44 Series

Solder Pad Design

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



Solder Paste Pattern



Copper Pattern

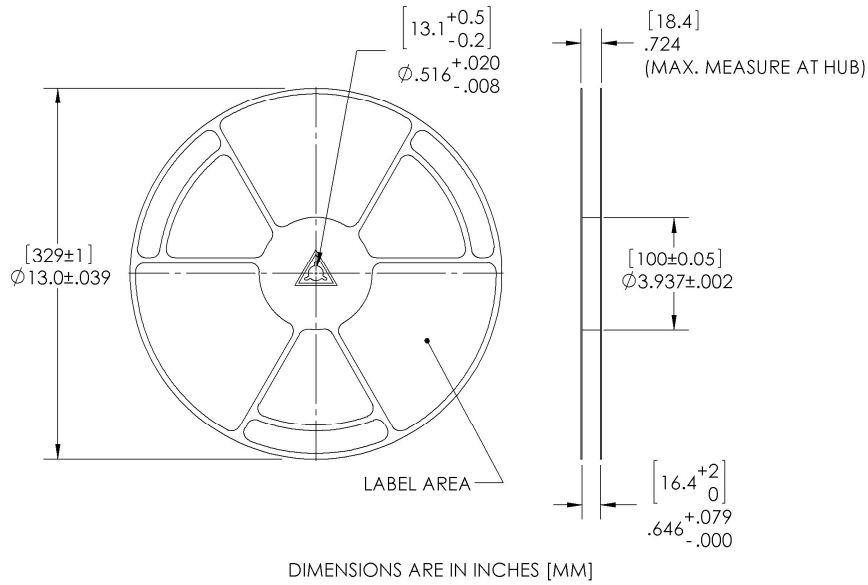
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

1-Watt SMD 6x6mm Dome Lens

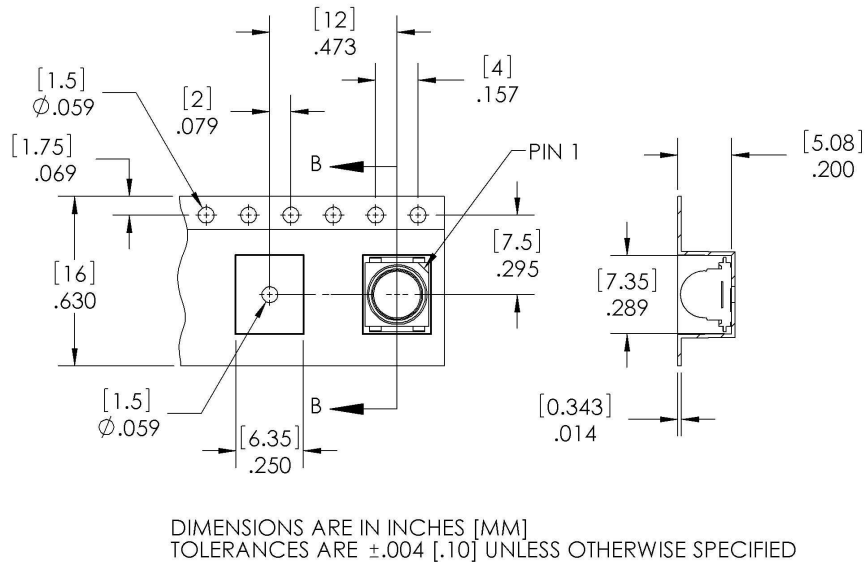
OVSPxBCR44 Series



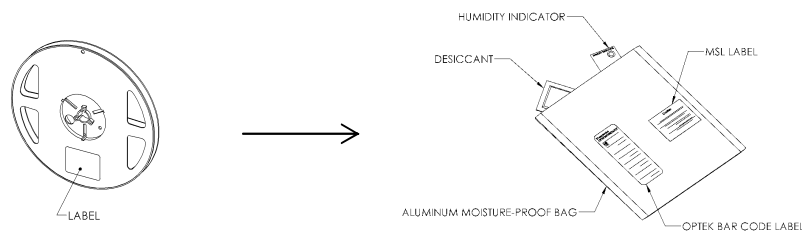
Reel Dimensions: 13-inch reel



Carrier Tape Dimensions: Loaded quantity 1000 pcs per reel



Moisture Resistant Packaging



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