

# White PLCC4 Surface Mount LED (120° Viewing Angle)



## OVSABCR9

- High luminous intensity
- High efficiency, 3-chip device
- Emission color:  $x = 0.29$ ,  $y = 0.30$
- Pb-free

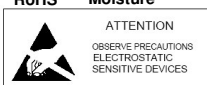
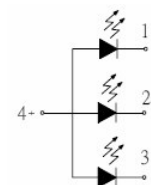
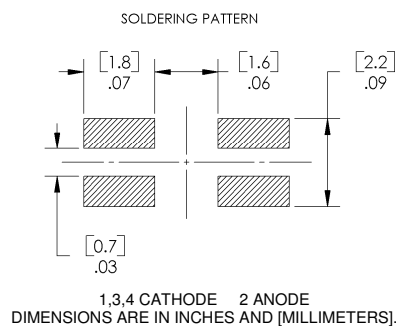
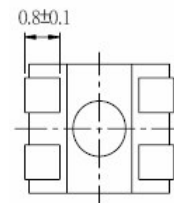
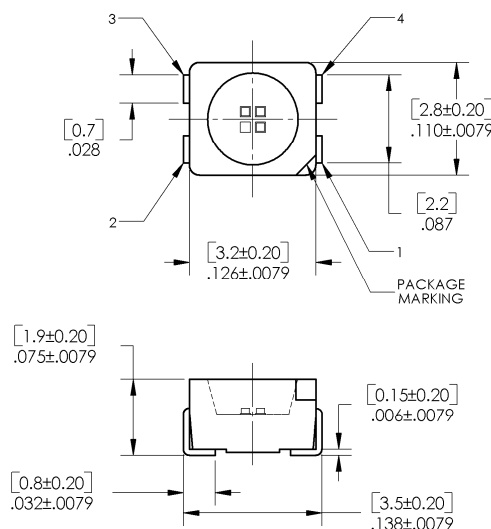


The **OVSABCR9** combines three die in a single package to provide high intensity light from a surface mount package. Light output is optimized by an interior reflector and the wide viewing angle adds flexibility for applications ranging from hand-held appliances to automotive interiors.

## Applications

- Backlighting of full color LCD
- Automotive interior lighting
- General lighting
- Coupling into light guides
- Entertainment equipment

| Part Number | Material | Emitted Color | Intensity Typ. | Lens Color  |
|-------------|----------|---------------|----------------|-------------|
| OVSABCR9    | InGaN    | White         | 1900 mcd       | Water Clear |



**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.

# White PLCC4 Surface Mount LED

## OVSAWBCR9



### Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  (on metal core PCB<sup>1</sup>) unless otherwise noted

|                                                           |                |
|-----------------------------------------------------------|----------------|
| Storage Temperature Range                                 | -40 ~ + 85 °C  |
| Operating Temperature Range                               | -40 ~ + 100 °C |
| Soldering Temperature (5 second maximum)                  | 260 °C         |
| Forward Current <sup>1</sup>                              | 25 mA          |
| Peak Forward Current (10% Duty Cycle, 1 KHz) <sup>1</sup> | 100 mA         |
| Reverse Voltage                                           | 5 V            |
| Electrostatic Discharge                                   | 150 V          |
| Power Dissipation                                         | 110 mW         |

Note:

1. Maximum forward current for each die.

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  (on metal core PCB<sup>1</sup>) unless otherwise noted

| SYMBOL          | PARAMETER                             | MIN  | TYP  | MAX  | UNITS         | CONDITIONS           |
|-----------------|---------------------------------------|------|------|------|---------------|----------------------|
| $I_V$           | Luminous Intensity <sup>1</sup>       | 1045 | 1900 | ---- | mcd           | $I_F = 20\text{ mA}$ |
| $V_F$           | Forward Voltage <sup>2</sup>          | ---- | 3.5  | 4.0  | V             | $I_F = 20\text{ mA}$ |
| $I_R$           | Reverse Current <sup>2</sup>          | ---- | ---- | 50   | $\mu\text{A}$ | $V_R = 5\text{ V}$   |
| $2\theta_{1/2}$ | 50% Power Angle                       | ---- | 120  | ---- | deg           | $I_F = 20\text{ mA}$ |
| x               | Chromaticity Coordinates <sup>3</sup> | ---- | 0.29 | ---- | ----          | $I_F = 20\text{ mA}$ |
| y               |                                       | ---- | 0.30 | ---- | ----          | $I_F = 20\text{ mA}$ |

Notes:

1. When three LED die are operated simultaneously.
2. For each die.
3. The C.I.E. 1931 chromaticity diagram.

### Standard Bins ( $I_F = 20\text{mA}$ )

Lamps are sorted to luminous intensity ( $I_V$ ) and chromaticity coordinates (x, y) bins shown. Orders for OVSAWBCR9 may be filled with any or all bins contained as below.

| Rank                     |   | A0    |       |       |       | B1    |       |       |       |
|--------------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Chromaticity Coordinates | x | 0.280 | 0.264 | 0.283 | 0.296 | 0.287 | 0.283 | 0.330 | 0.330 |
|                          | y | 0.248 | 0.267 | 0.305 | 0.276 | 0.295 | 0.305 | 0.360 | 0.339 |

| Rank                     |   | B2    |       |       |       | C0    |       |       |       |
|--------------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Chromaticity Coordinates | x | 0.296 | 0.287 | 0.330 | 0.330 | 0.330 | 0.330 | 0.361 | 0.356 |
|                          | y | 0.276 | 0.295 | 0.339 | 0.318 | 0.318 | 0.360 | 0.385 | 0.351 |

Notes:

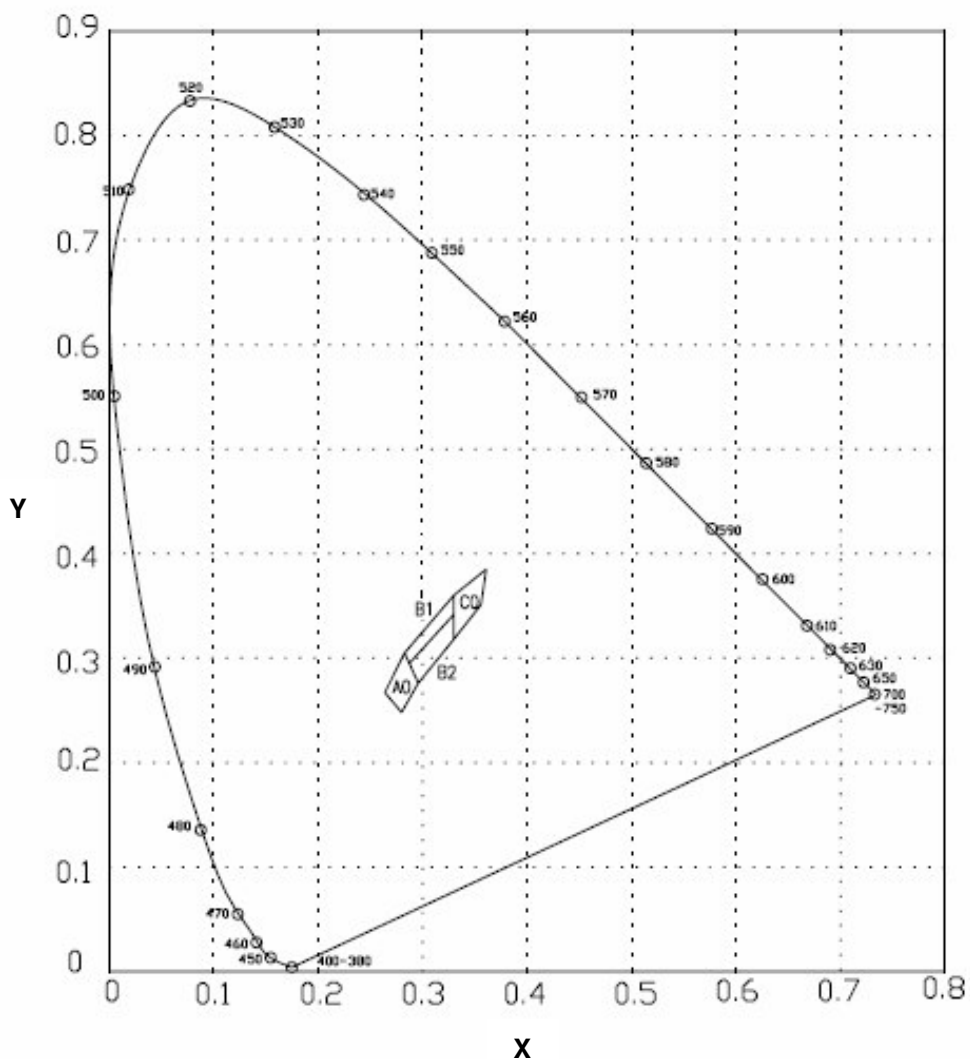
1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. Pb content <1000 PPM.
3. To designate luminous intensity ranks, please contact OPTEK.
4. Part is sensitive to static electricity and precautions must be used when handling products.

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## OVSAWBCR9

### CIE Chromaticity Diagram

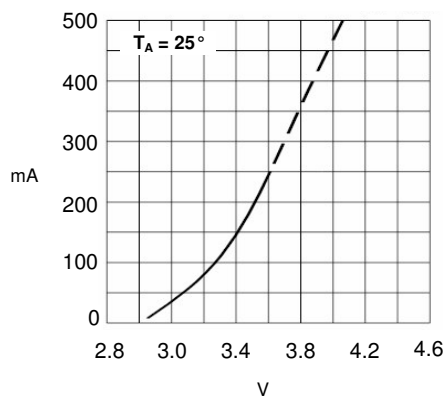


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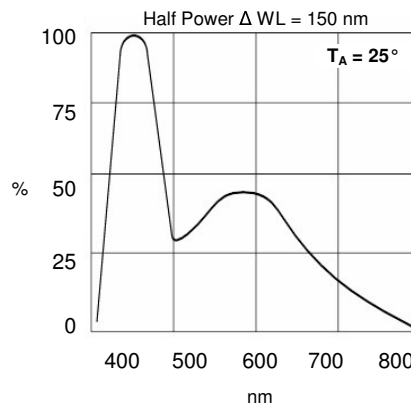
# White PLCC4 Surface Mount LED OVSAWBCR9



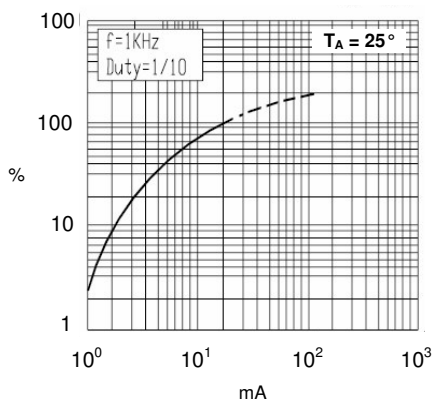
## Typical Electro-Optical Characteristics Curves



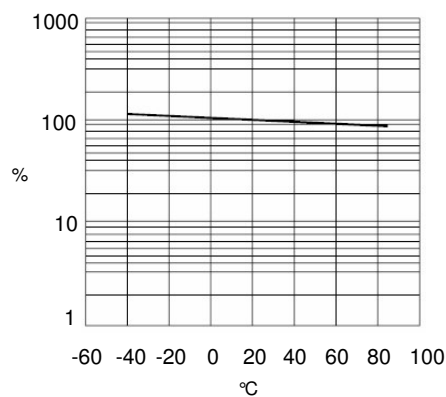
Forward Current vs Forward Voltage



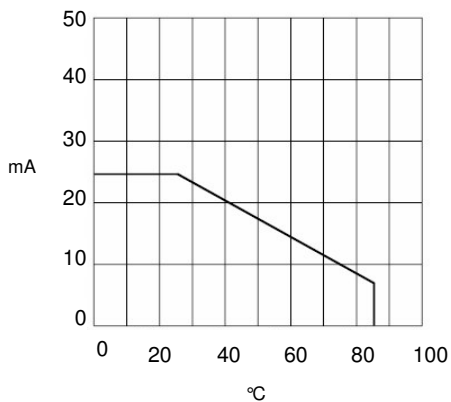
Relative Luminous Intensity vs Wavelength



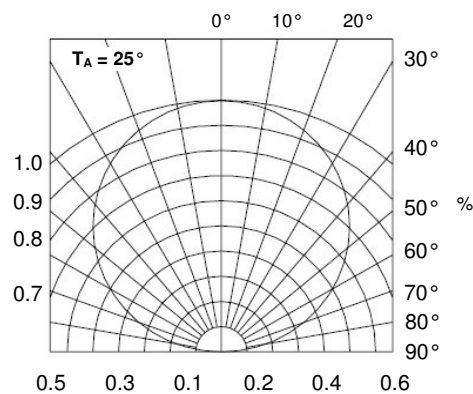
Relative Luminous Intensity vs Forward Current



Relative Luminous Intensity vs Ambient Temperature



Forward Current vs Ambient Temperature



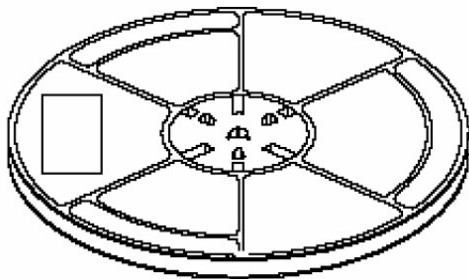
Radiation Pattern

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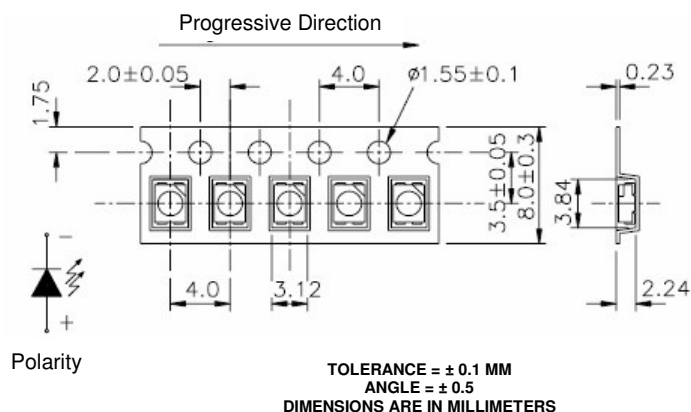
# White PLCC4 Surface Mount LED

## OVSAWBCR9

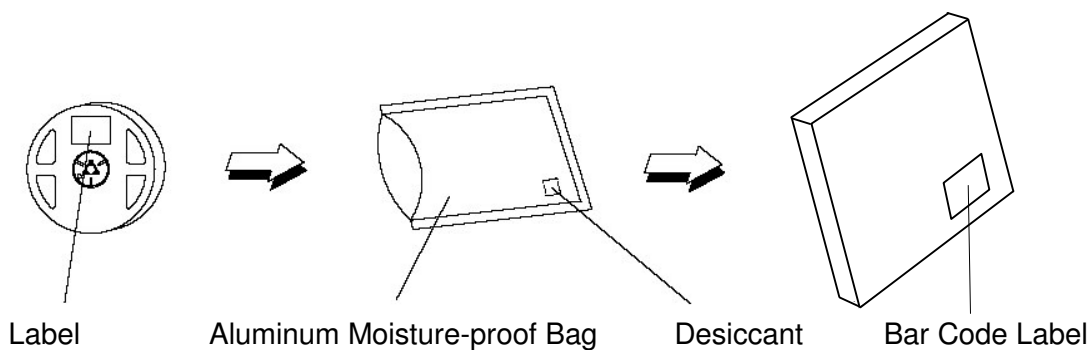
Reel Dimensions: 7-inch reel



Carrier Tape Dimensions: Loaded quantity 2000 pieces per reel



## Moisture Resistant Packaging



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