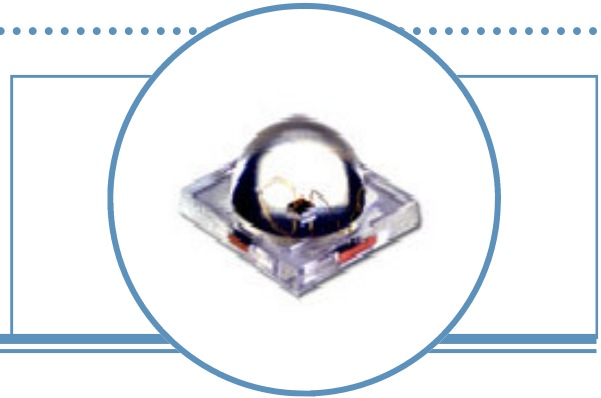


# 1-Watt SMD White LED Lamp (7mm)

## OVSPW7CR8

- High luminous flux output for illumination
- Exposed pad design for excellent heat transfer
- Designed for high current operation
- Reflow soldering applicable

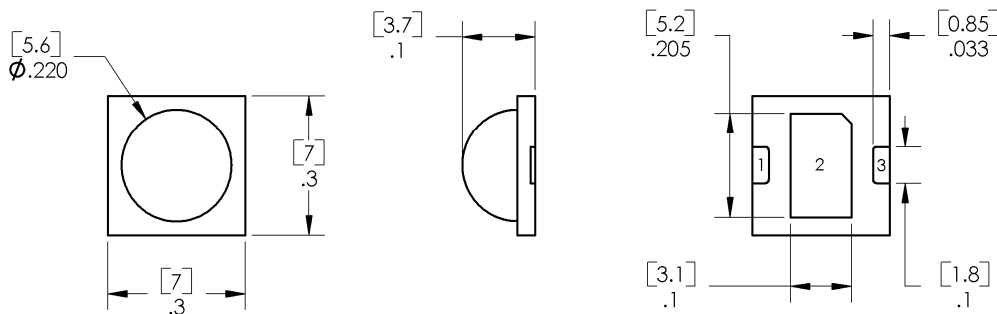


The OVSPW7CR8 is designed to handle high current and heat and emits sufficient light for a variety of lighting and illumination applications. Small size and high power allow for compact and cost-effective lighting solutions. Fast turn-on time and greater visibility in poor weather increase safety in automotive applications.

### Applications

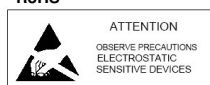
- Automotive: Back-up Lamps, Map and Dome Lights, Door Lights
- Camera Phone Flash
- Flashlights, Portable Task Lights, Diving Lights
- Backlighting LCD Displays: Televisions and Computer Monitors
- Entertainment: Studios, Theaters, Nightclubs, Restaurants
- Accent Lighting: Wall Wash, Landscape, Spotlight
- Bicycle and Pedestrian Safety Lights

Part Number	Material	Emitted Color	Flux Typ. lm	Lens Color
OVSPW7CR8	InGaN	White	23	Water Clear



1 ANODE 2 HEAT SINK 3 CATHODE

DIMENSIONS ARE IN INCHES AND [MILLIMETERS].



Data is subject to change without prior notice.

# 1-Watt SMD White LED Lamp (7mm)

## OVSPW7CR8



### Absolute Maximum Ratings

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

Storage Temperature Range	-20 ~ +85 °C
Operating Temperature Range	-20 ~ +85 °C
Reverse Voltage	5 V
Continuous Forward Current	350 mA
Peak Forward Current (10% Duty Cycle, 1KHz)	500 mA
Power Dissipation	1.26 W
Junction Temperature	+125°C
Junction-to-case <sup>2</sup>	15°C/W

Notes:

1. Metal core PCB defined as good heat transmission substrate (thickness of 2.0mm Al-based PCB 20x20mm,  $\Theta_{JC} < 15^\circ\text{C/W}$ )
2. Rth test condition: mounted on 2.0mm Al-based PCB 20x20mm

### Electrical Characteristics

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

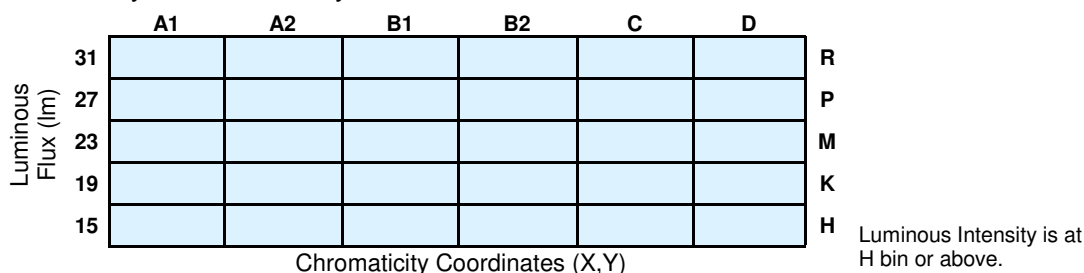
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
lumen	Luminous Flux	15	23	----	lm	$I_F = 350\text{mA}$
$V_F$	Forward Voltage	----	3.6	4.0	V	$I_F = 350\text{mA}$
$I_R$	Reverse Current	----	----	10	$\mu\text{A}$	$V_R = 5\text{V}$
$2\ \Theta_{1/2}$	50% Power Angle	----	70	----	deg	$I_F = 350\text{mA}$
x	Chromaticity Coordinates	----	0.3	----	----	$I_F = 350\text{mA}$
y		----	0.3	----	----	$I_F = 350\text{mA}$

Note:

1. Metal core PCB defined as good heat transmission substrate (thickness of 2.0mm Al-based PCB 20x20mm,  $\Theta_{JC} < 15^\circ\text{C/W}$ )

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

Lamps are sorted to luminous flux ( $\Phi_V$ ) and chromaticity coordinates (X,Y) bins shown. Orders for OVSPW7CR8 may be filled with any or all bins contained as below.



Rank		A1				A2				B1			
Chromaticity Coordinates	x	0.245	0.264	0.280	0.264	0.283	0.296	0.280	0.283	0.307	0.313	0.296	
	y	0.229	0.267	0.248	0.220	0.267	0.305	0.276	0.248	0.305	0.337	0.297	

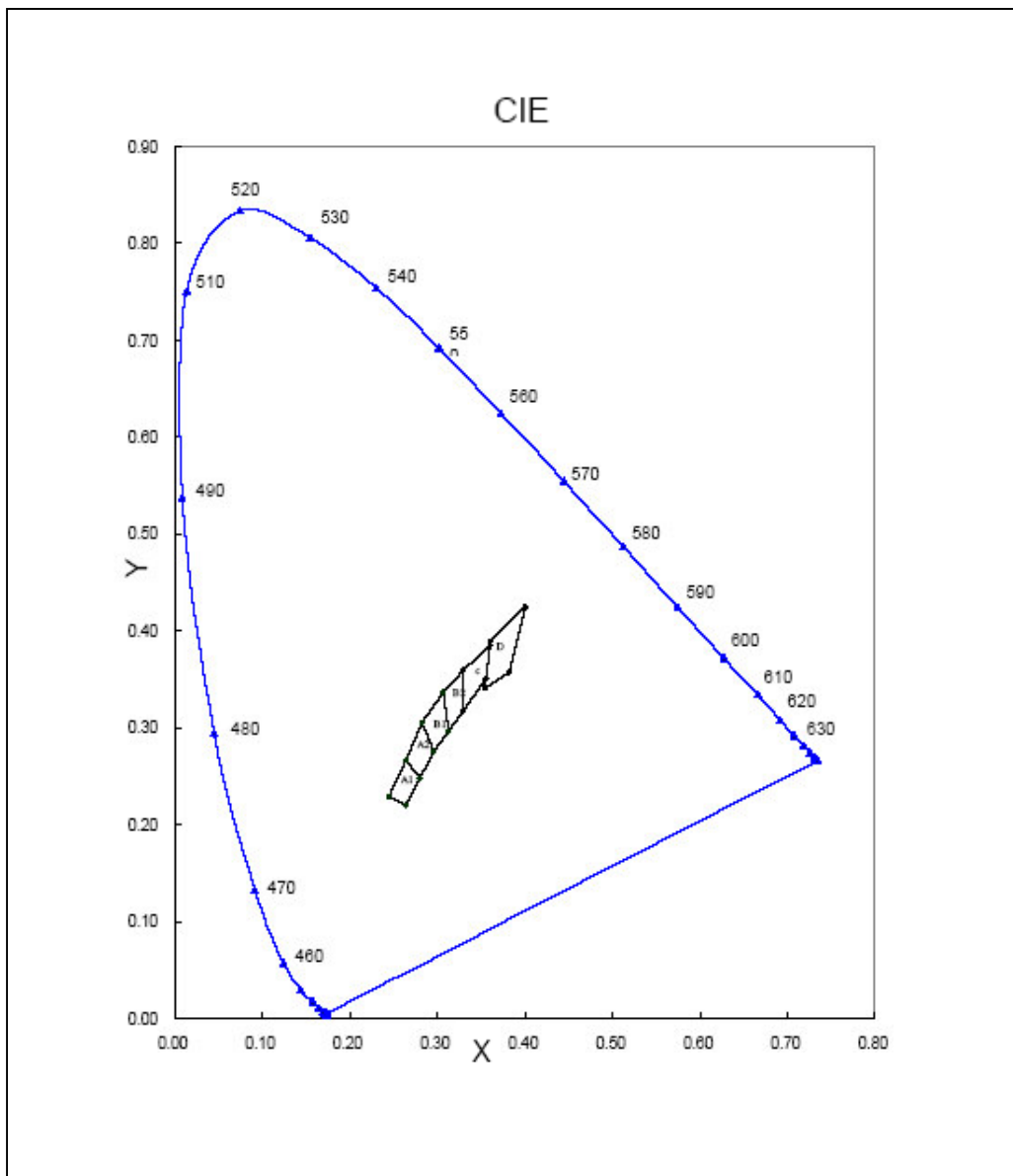
  

Rank		B2				C				D			
Chromaticity Coordinates	x	0.307	0.330	0.330	0.313	0.330	0.361	0.356	0.330	0.361	0.400	0.382	0.354
	y	0.337	0.360	0.318	0.297	0.360	0.385	0.351	0.318	0.390	0.425	0.358	0.341

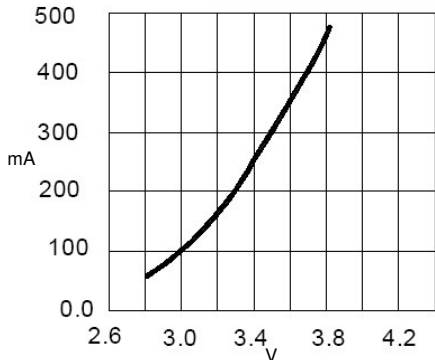
### Important Notes:

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

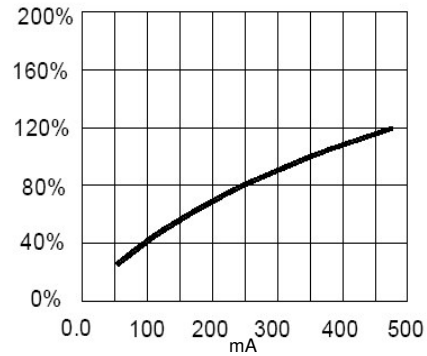
CIE Chromaticity Diagram



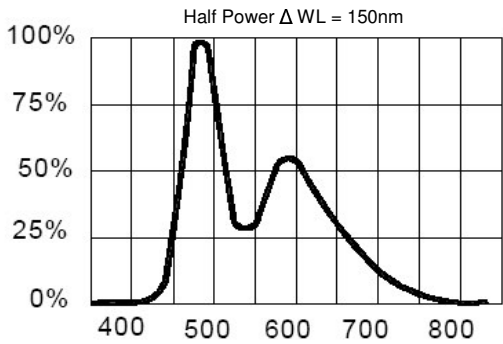
Typical Electro-Optical Characteristics Curves



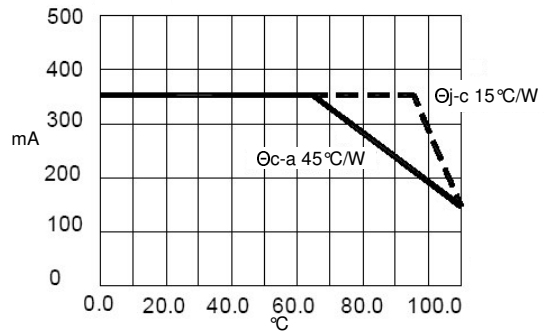
Forward Current vs. Forward Voltage



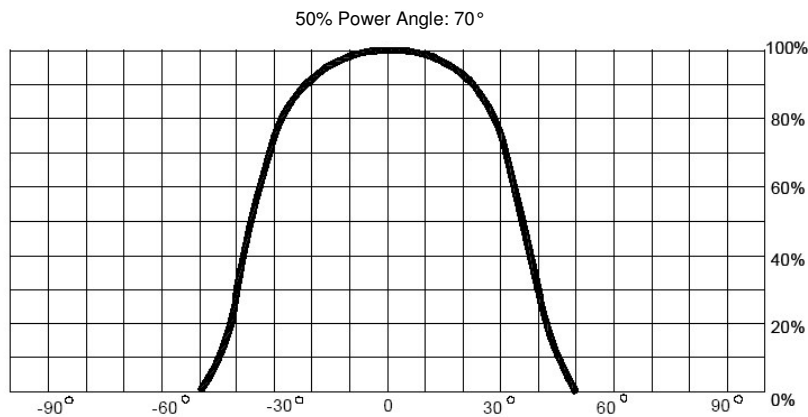
Relative Luminous Intensity vs. Forward Current



Relative Luminous Intensity vs. Wavelength



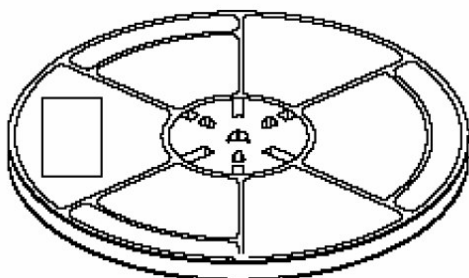
Maximum Forward DC Current vs. Ambient Temperature



Far Field Pattern

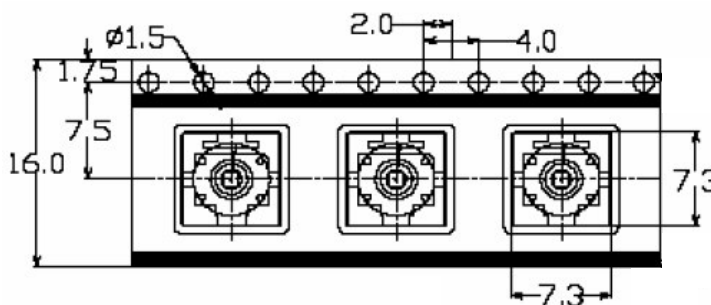
# 1-Watt SMD White LED Lamp (7mm) OVSPW7CR8

## Reel Dimensions (13 Inch)

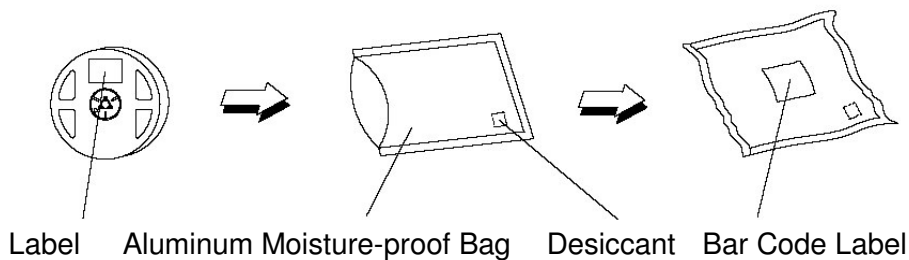


REEL  
(506-DORREE-00)  
( $\phi$ 330x16mm)

## Carrier Tape Dimensions: Loaded Quantity 1400 PCS per Reel



## Moisture Resistant Packaging



**1-Watt SMD White LED Lamp (7mm)**  
**OVSPW7CR8**



<b>Issue</b>	<b>Change Description</b>	<b>Approval</b>	<b>Date</b>
1.0	Initial Release	R. Bailey	5/20/05