4-Pin Super Flux Red LED Lamp
Orca R Series (4.6mm Dome)

BIVAR

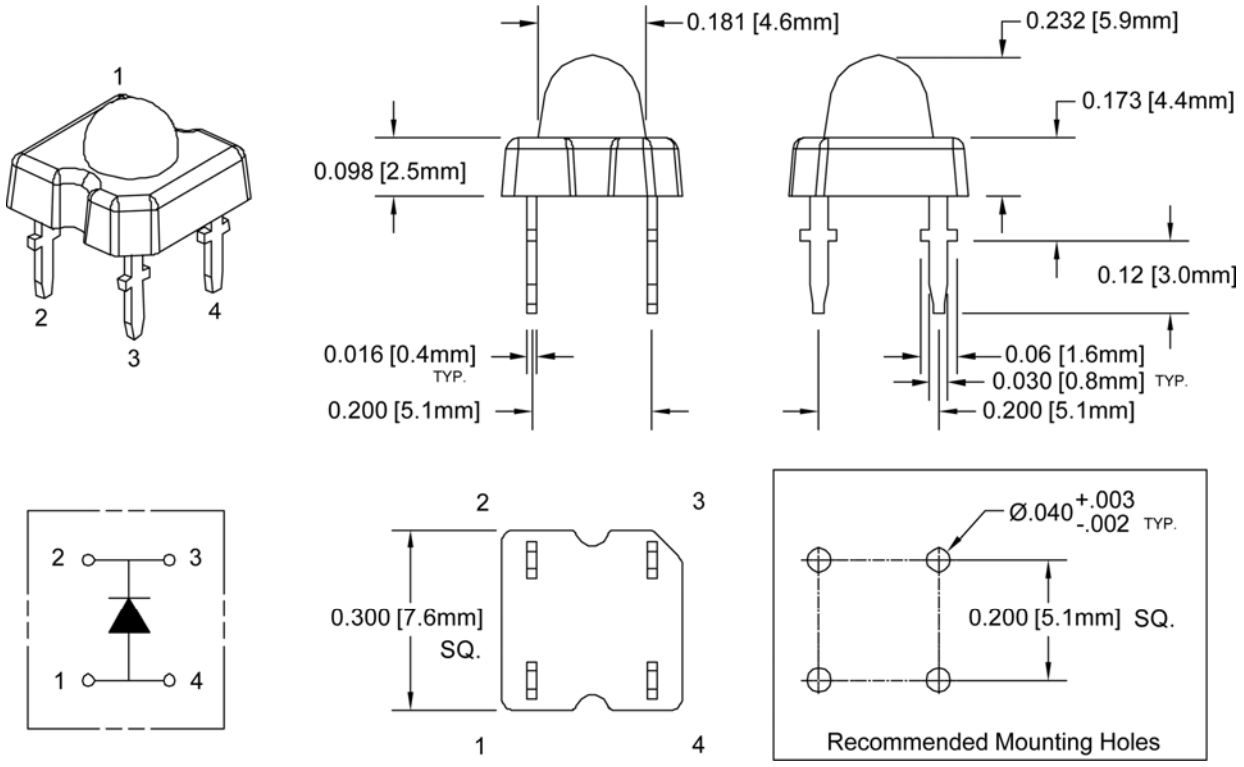
R50RED-4-0045

- **RoHS Compliant**
- **Low Profile Dome Lens**
- **Automatic Insertion Compatible — Tubular Packaging**
- **Automatic Placement Compatible**
- **High Intensity Output**
- **High Power Efficiency**

Bivar **R50RED-4-0045** comes with low profile package design incorporating higher forward current to maximize intensity while minimizing the number of LEDs required to achieve uniform and enhanced light distribution. Low power consumption with quick response time means savings in electricity.

Bivar **R50RED-4-0045** can be coupled with reflectors or lenses for optimal light distribution needs. Typical applications are automotive exterior lighting, decorative interior or exterior lighting, specialty stage lighting, and electronic signage.

Part Number	Material	Emitted Color	Lumen Typ. mcd	Lens Color	Viewing Angle
R50RED-4-0045	AlGaInP/GaAs	Red	6000	Water Clear	45°



Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.
3. Tolerance of overall epoxy outline: ±0.020" unless otherwise noted.
4. Epoxy meniscus may extend to 0.060" max.

ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

RoHS Compliant

Moisture Sensitivity Levels 1

CAUTION: LOOKING DIRECTLY AT LED WITHOUT SHIELDED EYES MAY CAUSE DAMAGE TO RETINA.

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Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Power Dissipation	140 mW
Forward Current (DC)	80 mA
Peak Forward Current [1]	160 mA
Electrostatic Discharge (Class1)	1000 V
Reverse Voltage	5 V
Operating Temperature Range	-25 ~ +80°C
Storage Temperature Range	-30 ~ +80°C
Lead Soldering Temperature (3 mm from the base of the epoxy bulb) [2]	260°C

Notes: 1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec.
2. Solder time less than 5 seconds at temperature extreme.

Electrical Characteristics

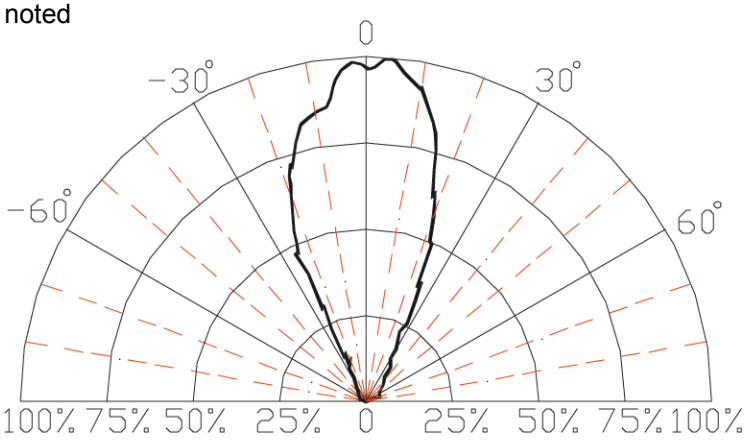
T_A = 25°C & I_F = 50 mA unless otherwise noted

Emitting Color	Forward Voltage (V)[1]			Recommend Forward Current (mA)	Reverse Current (μA) V_R=5V	Dominant Wavelength (nm)[2]		Luminous Intensity (mcd)[3]		Viewing Angle 2 Θ ½ (deg)
	MIN	TYP	MAX	TYP	MAX	MIN	MAX	MIN	TYP	TYP
Red	2.0	2.4	2.8	50	10	620	635	5000	6000	45

Notes: 1. Tolerance of Forward Voltage : ±0.05V.
2. Tolerance of Dominant Wavelength : ±0.1nm.
3. Tolerance of Luminous Intensity : ±15%.

Directivity Radiation

T_A = 25°C unless otherwise noted



Relative Luminous Intensity vs. Radiation Angle

Typical Electrical / Optical Characteristics Curves

T_A = 25°C unless otherwise noted

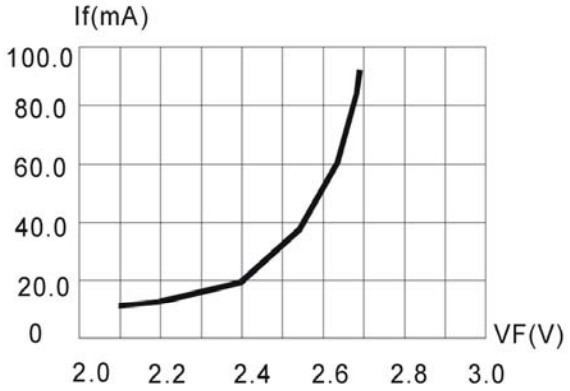


Fig.1 Forward Current vs.Forward Voltage

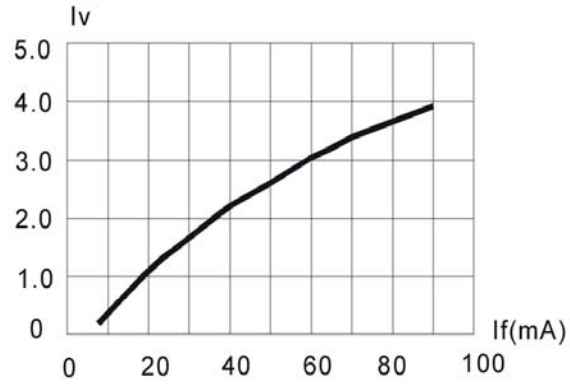


Fig.2 Relative Luminous Intensity vs.Forward Current

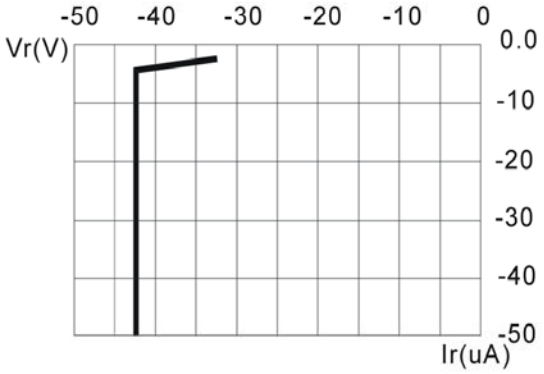


Fig.3 Reverse Current vs.Reverse Voltage

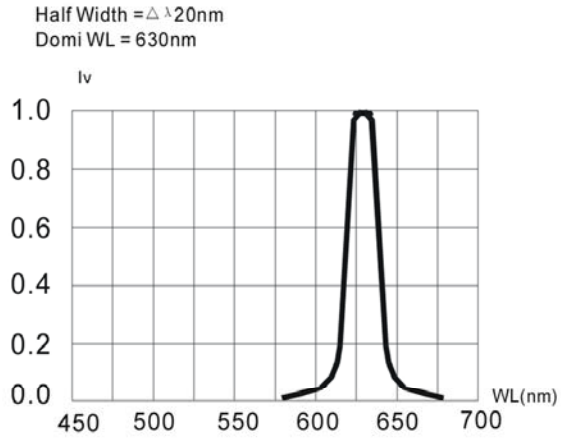


Fig.4 Relative Luminous Intensity vs.Wavelength

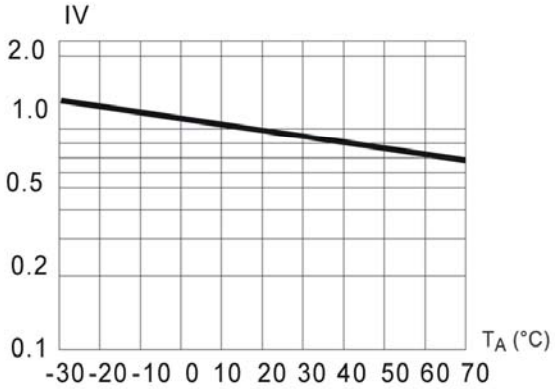


Fig.5 Reverse Luminous Intensity vs.Ambient Temperature

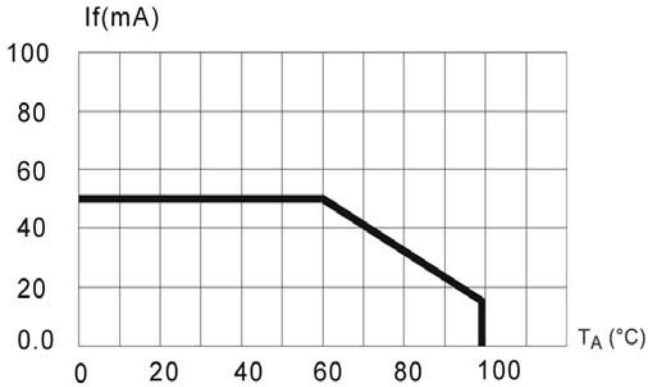
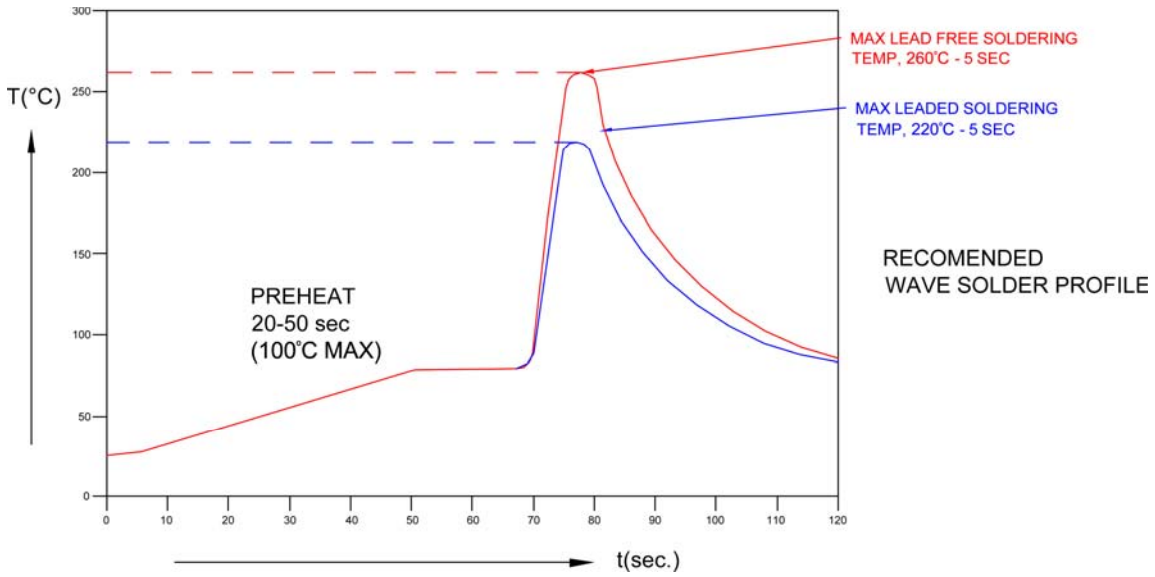


Fig.6 Maximun Forward Current vs.Ambient Temperature

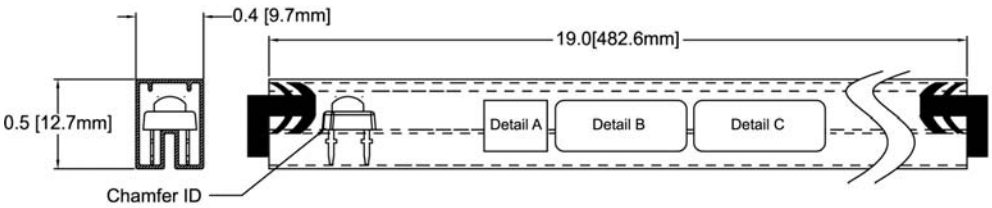
Recommended Soldering Conditions



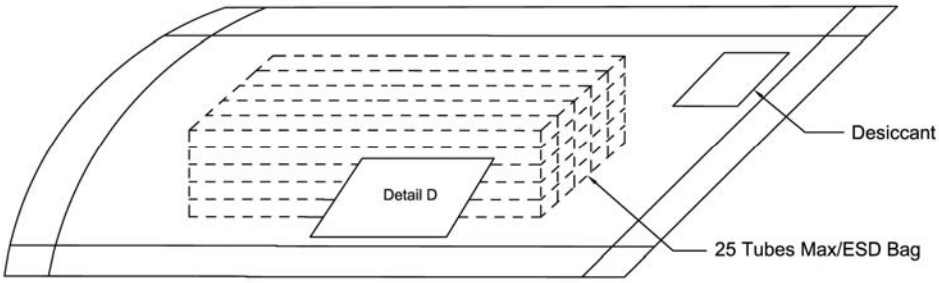
Recommended Lead Free Wave Soldering Profile	
Preheat Temperature: 100ºC Max.	Peak Temperature: 260ºC Max.
Preheat Time: 20 ~ 50 Seconds	Solder Time Above 217ºC: 5 Seconds Max.
Note: Turn off top heater at preheat to prevent the lamp body directly exposed to the heat source.	

Packaging and Labeling Plan

Bivar Orca R series Super Flux LEDs are packaged in tubes, each of which contains 60 LEDs; and each tube contains a rubber stopper at each end.

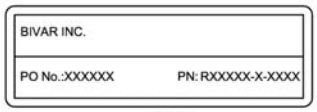


Note: 60 pcs Max./Antistatic Tube

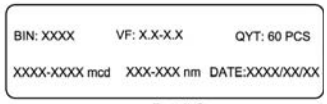


Note: 1500 pcs Max/ESD bag

Detail A



Detail B



Detail C

Detail D