## **OPF390 Series**



#### **Features:**

- Low Cost 850 nm LED technology
- Electrically isolated plastic cap package
- High thermal stability
- High optical coupling efficiency to multimode fiber
- Industrial temperature range
- 55 MHz Bandwidth



#### **Description:**

The OPF390 series fiber optic transmitters are high performance devices packaged for data communication links. This transmitter is an 850 nm GaAlAs LED and is specifically designed to efficiently launch optical power into fibers ranging in size from  $50/125\mu m$  up to  $200/300\mu m$  diameter fiber. Multiple power ranges with upper and lower limits are offered which allows the designer to select a device best suited for the application.

This product's combination of features including high speed and efficient coupled power makes it an ideal transmitter for integration into all types of data communications equipment.

#### **Applications:**

- Industrial Ethernet equipment
- Copper-to-fiber media conversion
- Intra-system fiber optic links
- Video surveillance systems

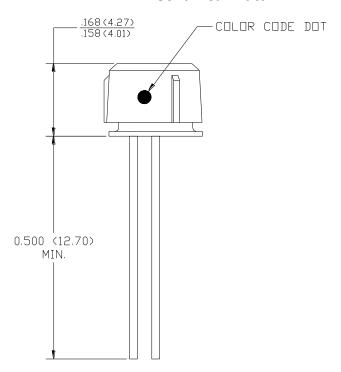
Typical Coupled Power I <sub>F</sub> = 100mA, 25°C								
Fiber Size	Туре	N.A.	OPF390A	OPF390C				
50/125 μm	Graded Index	0.20	25μW	12.5μW				
62.5/125 μm	Graded Index	0.28	75μW	35μW				
100/140 μm	Graded Index	0.29	170μW	85μW				
200/300 μm	Step Index	0.41	650μW	450μW				

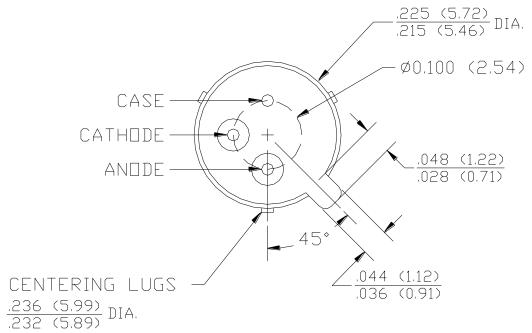


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### **Mechanical Data**





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## **Electrical Specifications**

Absolute Maximum Ratings (T <sub>A</sub> = 25° C unless otherwise noted)			
Storage Temperature Range	-55° C to +150° C		
Operating Temperature Range	-40° C to +125° C		
Lead Soldering Temperature <sup>(1)</sup>	260° C		
Continuous Forward Current <sup>(2)</sup>	100 mA		
Maximum Reverse Voltage	1.0 V		

Electrical Characteristics (T <sub>A</sub> = 25° C unless otherwise noted)										
SYMBOL	PARAMETER			MIN	TYP	MAX	UNITS	TEST CONDITIONS		
P <sub>T50</sub> <sup>(3)</sup>	Total Coupled Power	OPF390A	Orange	20.0	25.0		μW	I <sub>F</sub> = 100 mA		
	50/125 mm Fiber NA = 0.20	OPF390C	Black	10.0	12.5		μ			
$V_{F}$	Forward Voltage				1.8	2.2	٧	I <sub>F</sub> = 100 mA		
$V_R$	Reverse Voltage			1.8			V	Ι <sub>R</sub> = 100 μΑ		
λ	Wavelength			830	850	870	nm	I <sub>F</sub> = 50 mA		
Δλ	Optical Bandwidth				35		nm	I <sub>F</sub> = 50 mA		
t <sub>r</sub> ,t <sub>f</sub>	Rise and Fall Time				4.5	6.0	ns	I <sub>F</sub> = 100 mA; 10% to 90% <sup>(4)</sup>		

#### Notes:

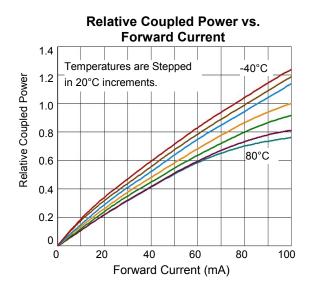
- 1. Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
- 2. De-rate linearly at 1.0 mA /°C above 25 °C.
- 3. The component must be actively aligned into the mating fiber cable assembly to achieve optimal performance.
- 4. No Pre-bias.
- 5. All Optek fiber optic LED products are subjected to 100% burn-in as part of its quality control process. The burn-in conditions are 96 hours at 100mA drive current and 25°C ambient temperature.

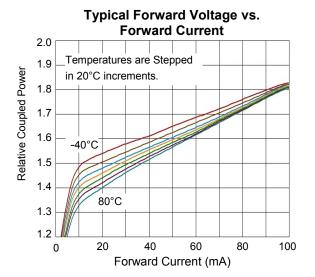
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### **Performance**





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