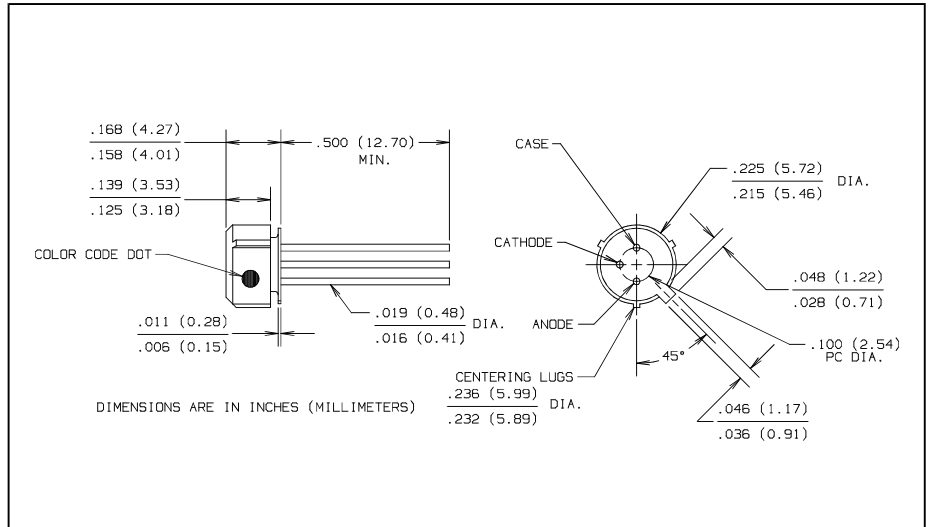
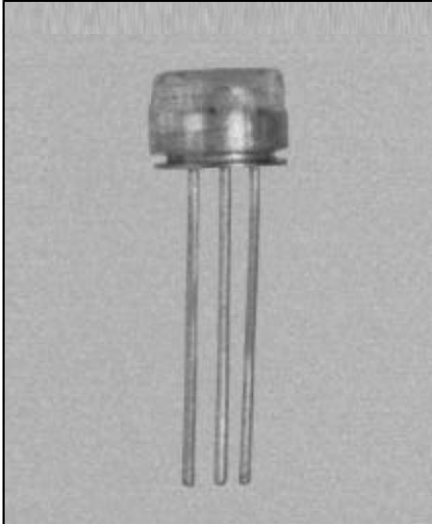


Fiber Optic GaAlAs High Speed LED

Types OPF390A, OPF390B, OPF390C, OPF390D



Features

- Electrically isolated plastic cap package
- High radiant output for fiber optic applications
- High speed
- Designed to self align in the 0.228 inch diameter bore of standard fiber optic receptacles. Press fit simplifies component installation.

Description

The OPF390 series LED provides fiber optic users with high coupled power and wide bandwidth in a low cost package.

The LED's are designed to interface with multimode optical fibers from 50/125 to 200/300 microns.

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

| | |
|--|---|
| Reverse Voltage | 1.0 V |
| Continuous Forward Current | 100 mA ⁽⁴⁾ |
| Storage Temperature Range | -55 ^o C to +115 ^o C |
| Operating Temperature Range | -40 ^o C to +100 ^o C |
| Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] | 240 ^o C ⁽¹⁾ |

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max when flow soldering.
- (2) Graded index fiber, 50 μm core, N.A. = 0.20.
- (3) To convert radiant power output to dBm, use the following expression: $\text{dBm} = 10 \log (\mu\text{W}/1000)$.
- (4) Derate linearly @ 1.0 mA/^o C above 25^o C.
- (5) Prebias @ 5 mA current.

LED Burn-in

All LED's are subject to 100% burn-in testing. Test conditions are 96 hours at 100 mA continuous current in 25^o C ambient.

TYPICAL COUPLED POWER into OPTICAL FIBER

| Typical Coupled Power $I_F = 100 \text{ mA @ } 25^\circ \text{ C}$ | | | | | | |
|---|------------------|------|-------------------|--------------------|-------------------|-------------------|
| Fiber | Refractive Index | N.A. | OPF390D | OPF390C | OPF390B | OPF390A |
| 50/125 μm | Graded | 0.20 | 7.5 μW | 12.5 μW | 18 μW | 25 μW |
| 62.5/125 μm | Graded | 0.28 | 27 μW | 35 μW | 45 μW | 75 μW |
| 100/140 μm | Graded | 0.29 | 58 μW | 85 μW | 115 μW | 170 μW |
| 200/300 μm^* | Step | 0.41 | 290 μW | 450 μW | 545 μW | 650 μW |

*PCS - Plastic Clad Silica

Types OPF390A, OPF390B, OPF390C, OPF390D

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

| SYMBOL | PARAMETER | DOT | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|-------------|---|------------------|------|------|-----|---------------|--|
| P_O | Radiant Power Output | OPF390D (Silver) | 5.0 | 7.5 | | μW | $I_F = 100\text{ mA}^{(2)}$ |
| | | OPF390C (Black) | 10.0 | 12.5 | | | |
| | | OPF390B (Green) | 15.0 | 18.0 | | | |
| | | OPF390A (Orange) | 20.0 | 25.0 | | | |
| V_F | Forward Voltage | | | 1.8 | 2.0 | V | $I_F = 100\text{ mA}$ |
| λ_p | Peak Output Wavelength | | 830 | 850 | 870 | nm | $I_F = 50\text{ mA}$ |
| B | Spectral Band Width Between Half Power Points | | | 35 | | nm | $I_F = 50\text{ mA}$ |
| t_r | Output Rise Time | | | 4.5 | 6.0 | ns | $I_F = 100\text{ mA}, 10\%-90\%^{(5)}$ |
| t_f | Output Fall Time | | | 4.5 | 6.0 | ns | $I_F = 100\text{ mA}, 90\%-10\%^{(5)}$ |

Typical Performance Curves

