

Fiber Optic GaAlAs LED

OPF320, OPF340 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
- 75 MHz Bandwidth

Description:

The OPF320 and OPF340 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 μm up to 200/300 μm 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 $I_F = 100 \text{ mA}, 25^\circ \text{ C}$ | | | | | |
|---|--------------|------|-------------------|--------------------|-------------------|
| Fiber Size | Type | N.A. | OPF320A | OPF320B | OPF340A |
| 50/125 μm | Graded Index | 0.20 | 19 μW | 12.5 μW | 25 μW |
| 62.5/125 μm | Graded Index | 0.28 | 34 μW | 22 μW | 45 μW |
| 100/140 μm | Graded Index | 0.29 | 95 μW | 62 μW | 125 μW |
| 200/300 μm | Step Index | 0.41 | 360 μW | 235 μW | 475 μW |



RoHS

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

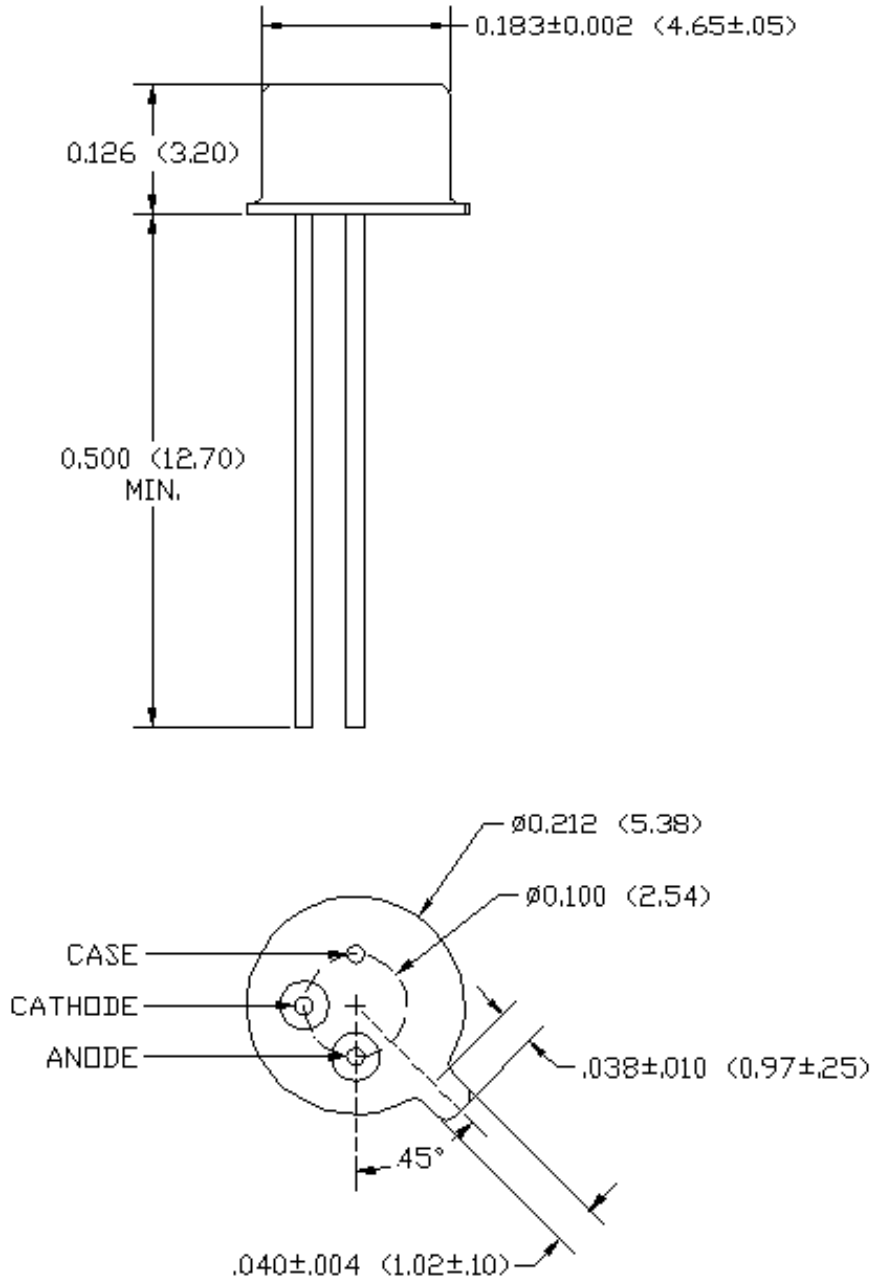
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Mechanical Data



DIMENSIONS ARE IN INCHES (MILLIMETERS)

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Electrical Specifications

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

| | |
|---|-----------------|
| Storage Temperature Range | -55°C to +150°C |
| Operating Temperature Range | -40°C to +125°C |
| Lead Soldering Temperature ⁽¹⁾ | 260°C |
| Continuous Forward Current ⁽²⁾ | 100 mA |
| Maximum Reverse Voltage | 1.0 V |

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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|-------------|--|-----|------|------|---------------|---|
| P_O | Radiant Power Output: | | | | | $I_F = 100\text{ mA}$, 50/125 μm cable, N.A. = 0.20 |
| | OPF320A | 15 | 19.0 | - | μW | |
| | OPF320B | 10 | 12.5 | - | | |
| | OPF340A | 20 | 25 | - | | |
| 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 Bandwidth Between Half Power Points | - | 35 | - | nm | $I_F = 50\text{ mA}$ |
| t_r, t_f | Rise and Fall Time | - | 6.0 | 10.0 | ns | $I_F = 100\text{ mA}$; 10% to 90% ⁽⁴⁾ |

Notes:

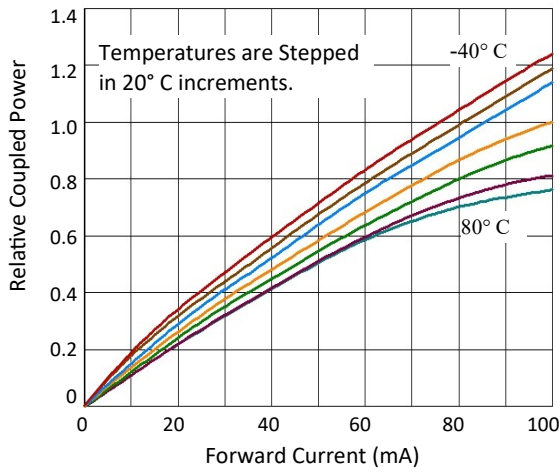
- (1) Maximum of 5 seconds with soldering iron, 1/16 inch (1.6 mm) from case. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
- (2) Derate linearly 1.0 mA/°C above 25° C.
- (3) To convert radiant power output to dBm, use the following expression $\text{dBm} = 10 \log (\mu\text{W}/1000)$.
- (4) No Pre-bias.

General Note

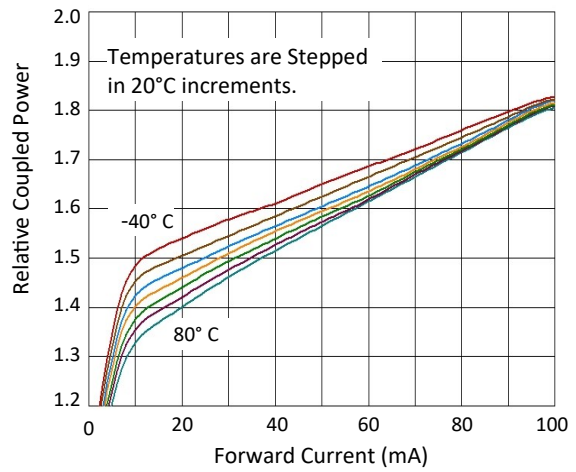
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Performance

Relative Coupled Power vs. Forward Current



Typical Forward Voltage vs. Forward Current



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