

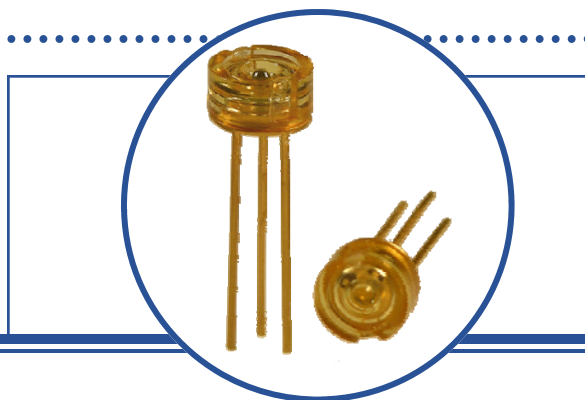
# Fiber Optic Transmitter

## OPF670 Series



### Features:

- Low cost 850 nm LED technology
- Low cost TO package with electrically isolated plastic cap
- High thermal stability
- High optical coupling efficiency to multimode fiber
- Industrial temperature range



### Description:

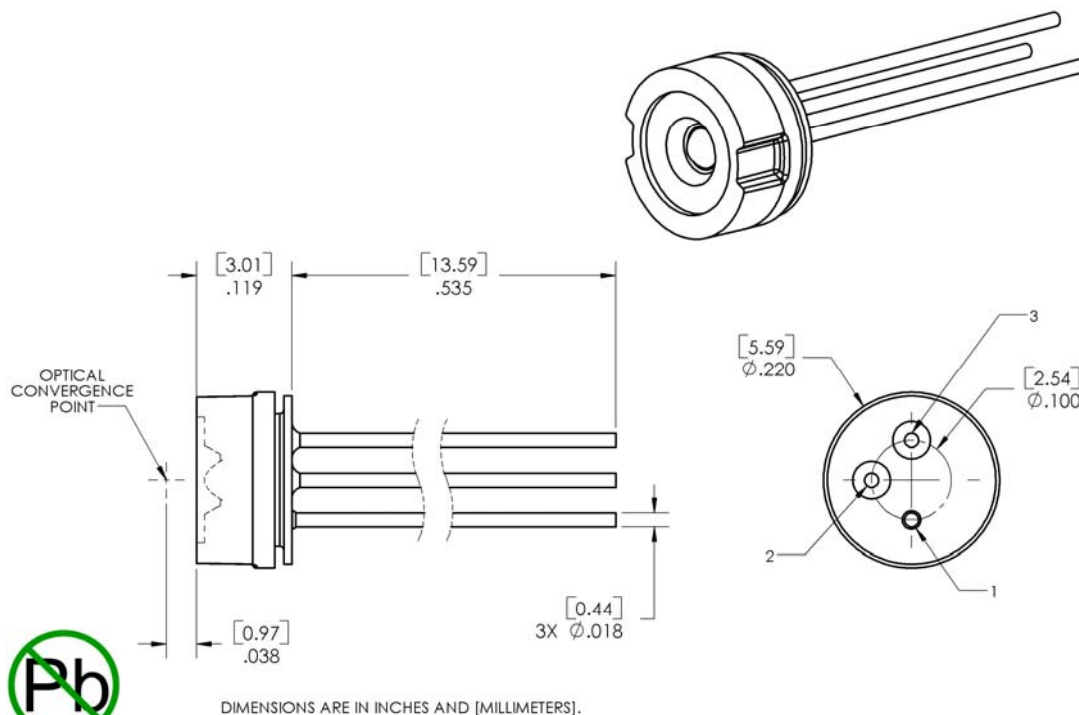
The **OPF670** series fiber optic transmitters are high performance devices packaged for data communication links. These transmitters are an 850 nm GaAlAs LED and are specifically designed to efficiently launch optical power into either 50/125µm or 62.5/125µm diameter multimode fiber. Three power ranges are offered, which allows the designer to select a device best suited for the application.

The **OPF670** is offered a low cost TO package with a plastic lens cap. The device is designed to be active aligned into a connector receptacle.

### Applications:

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

| Ordering Information |                     |                            |                                                |
|----------------------|---------------------|----------------------------|------------------------------------------------|
| Part Number          | LED Peak Wavelength | P <sub>T50</sub> (dBm) Min | T <sub>r</sub> , T <sub>f</sub> (ns) Typ / Max |
| OPF670-1             | 850nm               | -17.5                      | 8.0/10.0                                       |
| OPF670-2             | 850nm               | -16.0                      | 8.0/10.0                                       |
| OPF670-3             | 850nm               | -14.5                      | 8.0/10.0                                       |



| Pin | Function      |
|-----|---------------|
| 1   | Anode         |
| 2   | Cathode       |
| 3   | Not Connected |

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

## Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  unless otherwise noted

|                                           |                   |
|-------------------------------------------|-------------------|
| Storage Temperature Range                 | -55° C to +100° C |
| Operating Temperature Range               | -40° C to +85° C  |
| Lead Soldering Temperature <sup>(1)</sup> | 260° C            |
| Continuous Forward Current <sup>(2)</sup> | 100 mA            |
| Maximum Reverse Voltage                   | 1.0 V             |

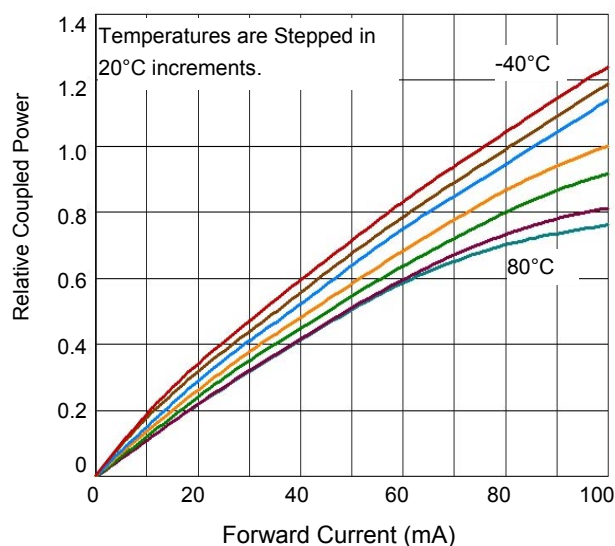
## Electrical/Optical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| SYMBOL          | PARAMETER                   |          | MIN   | TYP | MAX  | UNITS | CONDITIONS                                        |
|-----------------|-----------------------------|----------|-------|-----|------|-------|---------------------------------------------------|
| $P_{T50}$       | Total Coupled Power,        | OPF670-1 | -17.5 |     |      | dBm   | $I_F = 100\text{ mA}$                             |
|                 | 50/125 $\mu\text{m}$ Fiber, | OPF670-2 | -16.0 |     |      | dBm   |                                                   |
|                 | NA = 0.20                   | OPF670-3 | -14.5 |     |      | dBm   |                                                   |
| $V_F$           | Forward Voltage             |          | 1.5   |     | 2.1  | V     | $I_F = 100\text{ mA}$                             |
| $V_R$           | Reverse Voltage             |          | 1.8   |     |      | V     | $I_R = 100\text{ }\mu\text{A}$                    |
| $\lambda$       | Wavelength                  |          | 830   | 850 | 870  | nm    | $I_F = 50\text{ mA}$                              |
| $\Delta\lambda$ | Optical Bandwidth           |          |       | 35  |      | nm    | $I_F = 50\text{ mA}$                              |
| $t_r, t_f$      | Rise and Fall Time          |          |       | 8.0 | 10.0 | ns    | $I_F = 100\text{ mA}$ ; 10% to 90% <sup>(3)</sup> |

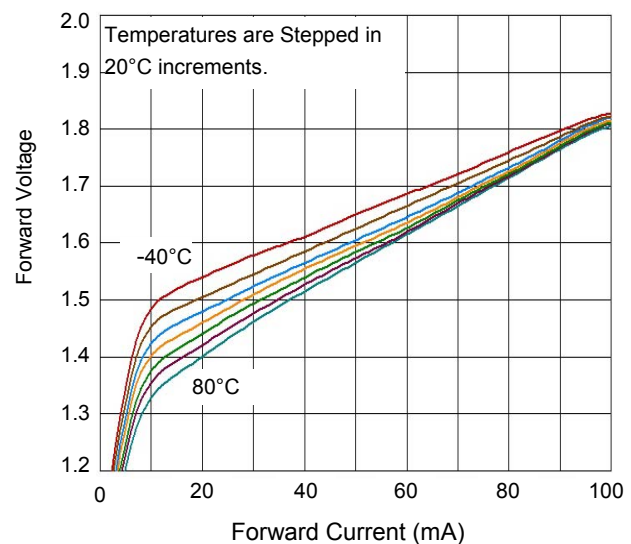
### Notes:

- Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
- De-rate linearly at 1.0mA /°C above 25°C.
- No Pre-bias.
- 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.

**Relative Coupled Power vs Forward Current**



**Typical Forward Voltage vs Forward Current**



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