

# Fiber Optic GaAlAs LED

OPF32\_ , OPF34\_ Series

OPF37\_ , OPF39\_ Series

OPF67\_ , OPF69\_ Series



## Features:

- High radiant output (OPF320, 340, 345, 370, 390, 395)
- Electrically isolated from case (OPF320, 340, 345, 370, 390, 395)
- Component pre-mounted and ready to use (OPF322, 342, 347, 372, 392, 397)
- Pre-tested with fiber to assure performance (OPF322, 342, 347, 372, 392, 397)
- Popular ST style receptacle (OPF322, 342, 347, 372, 392, 397)

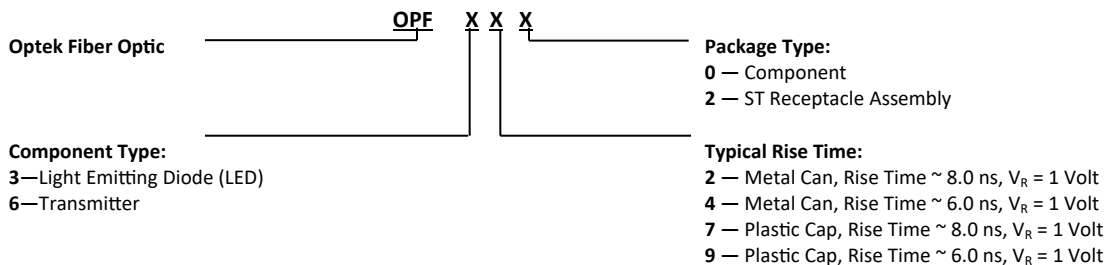
## Description:

The OPF320 and OPF370 series LED provide fiber optic users with high coupled power and wide bandwidth in an easily connectorized package. The LED's are designed to interface with multimode optical fibers from 50/125 to 200/300 microns.

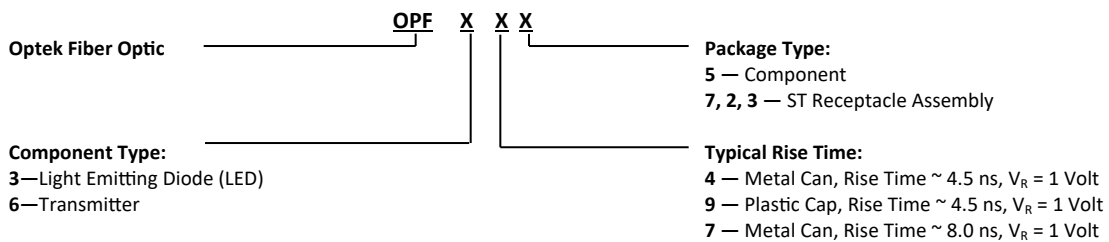
The OPF322 and OPF372 series LED consist of a hermetic LED, per-mounted and aligned in an ST receptacle. This configuration is designed for PC board or panel mounting. Includes lock washer and jam nut, two 2-56 screws, and a dust cap. The LED's are designed to interface with multimode optical fibers from 50/125 to 200/300 microns.

## Part Number Guide

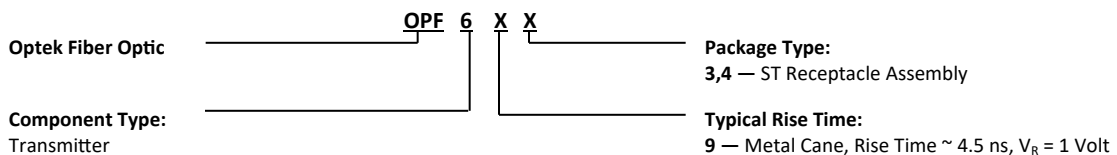
### OPF320, OPF322, OPF340, OPF342, OPF370, OPF372, OPF390, OPF392, OPF670



### OPF345, OPF347, OPF395, OPF397, OPF672, OPF673, OPF692



### OPF693, OPF694



#### 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.

TT Electronics | OPTEK Technology  
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
www.ttelectronics.com | sensors@ttelectronics.com

# Fiber Optic GaAIAs LED

OPF32\_, OPF34\_ Series

OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series



## Electrical Specifications

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

|   |  |
|---|--|
| Storage Temperature Range<br>OPF320, OPF340, OPF342, OPF345, OPF347<br>OPF322<br>OPF370, OPF390, OPF395<br>OPF372, OPF392, OPF396, OPF397, OPF670, OPF672, OPF673, OPF692, OPF693, OPF694 | -55°C to +150°C<br>-55°C to +125°C<br>-55°C to +115°C<br>-55°C to +100°C |
| Operating Temperature Range<br>OPF372, OPF392, OPF396, OPF397, OPF670, OPF672, OPF673, OPF692, OPF693, OPF694<br>OPF320, OPF340, OPF342, OPF345, OPF347<br>OPF322, OPF370, OPF390, OPF395 | -40°C to +85°C<br>-40°C to +125°C<br>-40°C to +100°C                     |
| Reverse Voltage   | 1.0 V  |
| Continuous Forward Current  | 100 mA <sup>(4)</sup>  |
| Lead Soldering Temperature (1/16 inch (1.6 mm) from case for 5 sec. with soldering iron)  | 260°C <sup>(1)</sup>   |

**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.

TT Electronics | OPTEK Technology  
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
www.ttelectronics.com | sensors@ttelectronics.com

# Fiber Optic GaAIs LED

OPF32\_, OPF34\_ Series

OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series



## Electrical Specifications Cont.

Electrical Characteristics (T<sub>A</sub> = 25° C unless otherwise noted)

| SYMBOL         | PARAMETER   | MIN   | TYP  | MAX   | UNITS | TEST CONDITIONS  |
|----------------|---|-------|------|-------|-------|--|
| P <sub>O</sub> | Radiant Power Output:   |       |      |       |       | I <sub>F</sub> = 100 mA <sup>(2)</sup> , 50/125 μm cable, N.A.= 0.20 |
|                | OPF320C, 322C, 340D, 342D, 345D, 347D, 370D, 372D, 390D, 392D, 395D, 396D, 397D | 5     | 7.5  | -     | μW    |  |
|                | OPF320B, 322B, 340C, 342C, 345C, 347C, 370C, 372C, 390C, 392C, 395C, 396C, 397C | 10    | 12.5 | -     |       |  |
|                | OPF340B, 342B, 345B, 347B, 390B, 392B, 395B, 396B, 397B                         | 15    | 18   | -     |       |  |
|                | OPF320A, 322A, 370B, 372B   | 15    | 19.0 | -     |       |  |
|                | OPF340A, 342A, 345A, 347A, 390A, 392A, 395A, 396A, 397A                         | 20    | 25   | -     |       |  |
| OPF370A, 372A  | 25  | 29.0  | -    |       |       |  |
| P <sub>O</sub> | Total Coupled Power:  |       |      |       | dBm   | I <sub>F</sub> = 100 mA <sup>(2)</sup> , 50/125 μm cable, N.A.= 0.20 |
|                | OPF670-1, 672-1, 673-1  | -17.5 | -    | -15.2 |       |  |
|                | OPF670-2, 672-2, 673-2  | -16   | -    | -13   |       |  |
|                | OPF692-1, 693-1, 694-1  | -19   | -    | -14   |       |  |
|                | OPF692-2, 693-2, 694-2  | -16   | -    | -11   |       |  |
| V <sub>F</sub> | Forward Voltage   | -     | 1.8  | 2.0   | V     | I <sub>F</sub> = 100 mA  |
| λ <sub>P</sub> | Peak Output Wavelength  | 830   | 850  | 870   | nm    | I <sub>F</sub> = 50 mA   |
| B              | Spectral Bandwidth Between Half Power Points                                    | -     | 35   | -     | nm    | I <sub>F</sub> = 50 mA   |
|                |   |       |      |       |       |  |

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 dBm = 10 log (μW/1000).
- (4) Derate linearly 1.0 mA/°C above 25° C.
- (5) Prebias @ 5 mA current.

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.

TT Electronics | OPTEK Technology  
 2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
 www.ttelectronics.com | sensors@ttelectronics.com

# Fiber Optic GaAIs LED

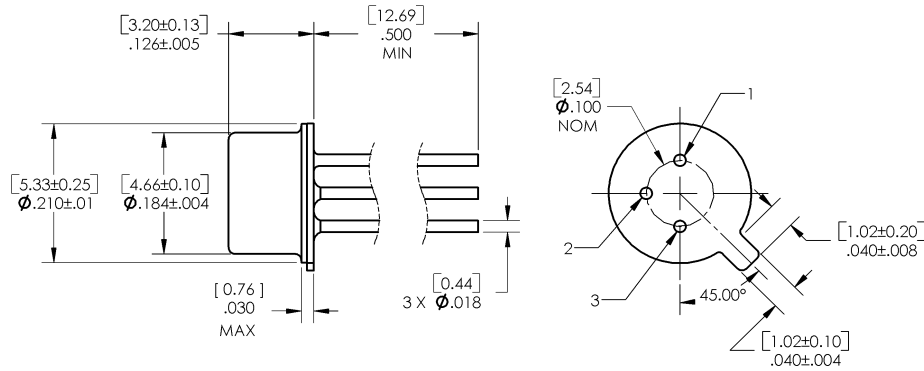


OPF32\_, OPF34\_ Series

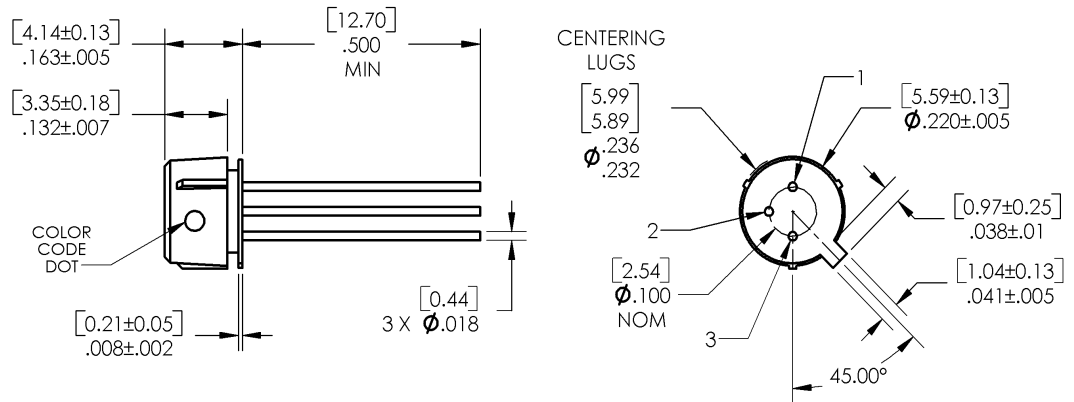
OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series

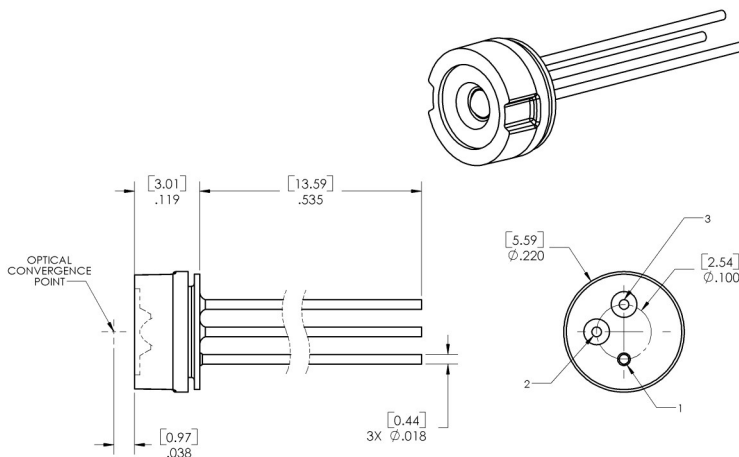
## OPF320, 340, 345



## OPF370, 390, 395



## OPF670



### 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.

TT Electronics | OPTEK Technology  
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
www.ttelectronics.com | sensors@ttelectronics.com

# Fiber Optic GaAlAs LED

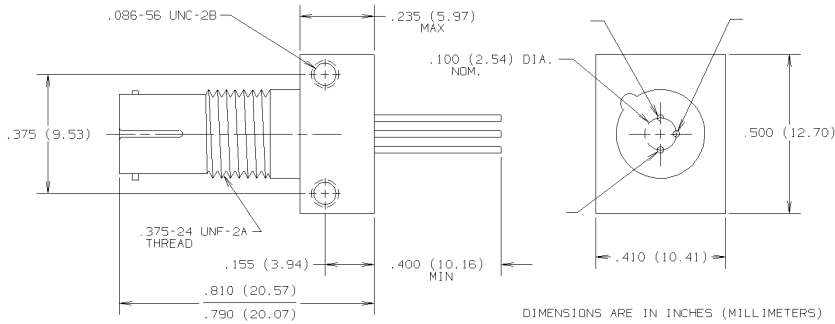


OPF32\_, OPF34\_ Series

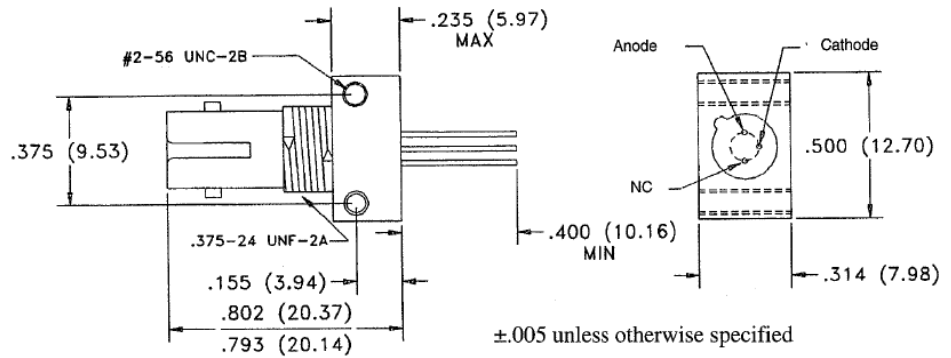
OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series

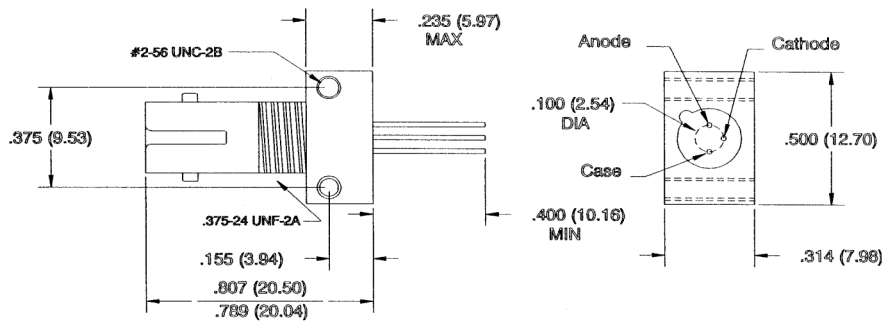
## OPF322, 342, 347, 372, 392, 397, 672



## OPF673



## OPF692, 693



### 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.

TT Electronics | OPTEK Technology  
 2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
[www.ttelectronics.com](http://www.ttelectronics.com) | [sensors@ttelectronics.com](mailto:sensors@ttelectronics.com)

# Fiber Optic GaAIAs LED

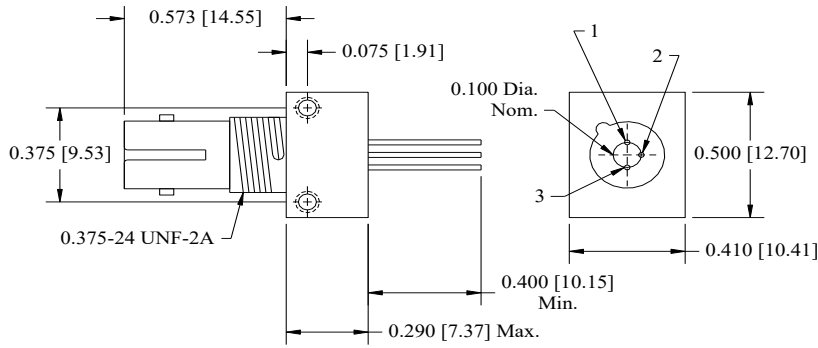
OPF32\_, OPF34\_ Series

OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series



OPF694



## 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.

TT Electronics | OPTEK Technology  
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
www.ttelectronics.com | sensors@ttelectronics.com

# Fiber Optic GaAIs LED



OPF32\_, OPF34\_ Series

OPF37\_, OPF39\_ Series

OPF67\_, OPF69\_ Series

| OPF320, OPF322                                 |                  |      |                       |                       |                       |
|--|------------------|------|-----------------------|-----------------------|-----------------------|
| Minimum Coupled Power IF = 100 mA @ 25°C (dBm) |                  |      |                       |                       |                       |
| Fiber  | Refractive Index | N.A. | Version-A<br>μW / dBm | Version-B<br>μW / dBm | Version-C<br>μW / dBm |
| 50/125 μm                                      | Graded           | 0.2  | 15 / -18.2            | 10 / -20              | 5 / -23               |
| 62.5/125 μm                                    |                  | 0.28 | 27.2 / -15.7          | 18.1 / -17.4          | 9.1 / -20.4           |
| 100/140 μm                                     |                  | 0.29 | 78.3 / -11.1          | 52.2 / -12.8          | 26.1 / -15.8          |
| 200/300 μm                                     | Step             | 0.41 | 295.2 / -5.3          | 196.8 / -7.1          | 98.4 / -10.1          |

| OPF370, OPF372                                 |                  |      |                       |                       |                       |                       |
|--|------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|
| Minimum Coupled Power IF = 100 mA @ 25°C (dBm) |                  |      |                       |                       |                       |                       |
| Fiber  | Refractive Index | N.A. | Version-A<br>μW / dBm | Version-B<br>μW / dBm | Version-C<br>μW / dBm | Version-D<br>μW / dBm |
| 50/125 μm                                      | Graded           | 0.2  | 25 / -16              | 15 / -18.2            | 10 / -20              | 5 / -23               |
| 62.5/125 μm                                    |                  | 0.28 | 45.4 / -13.4          | 27.2 / -15.7          | 18.1 / -17.4          | 9.1 / -20.4           |
| 100/140 μm                                     |                  | 0.29 | 130.5 / -8.8          | 78.3 / -11.1          | 52.2 / -12.8          | 26.1 / -15.8          |
| 200/300 μm                                     | Step             | 0.41 | 492 / -3.1            | 295.2 / -5.3          | 196.8 / -7.1          | 98.4 / -10.1          |

| OPF340, OPF342, OPF345, OPF347, OPF390, OPF392, OPF396, OPF395, OPF397 |                  |      |                       |                       |                       |                       |
|--|------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|
| Minimum Coupled Power IF = 100 mA @ 25°C (dBm)                         |                  |      |                       |                       |                       |                       |
| Fiber  | Refractive Index | N.A. | Version-A<br>μW / dBm | Version-B<br>μW / dBm | Version-C<br>μW / dBm | Version-D<br>μW / dBm |
| 50/125 μm  | Graded           | 0.2  | 20 / -17              | 15 / -18.2            | 10 / -20              | 5 / -23               |
| 62.5/125 μm  |                  | 0.28 | 36.3 / -14.4          | 27.2 / -15.7          | 18.1 / -17.4          | 9.1 / -20.4           |
| 100/140 μm   |                  | 0.29 | 104.4 / -9.8          | 78.3 / -11.1          | 52.2 / -12.8          | 26.1 / -15.8          |
| 200/300 μm   | Step             | 0.41 | 393.6 / -4            | 295.2 / -5.3          | 196.8 / -7.1          | 98.4 / -10.1          |

| OPF670, OPF672, OPF673                         |                  |      |                       |                       |
|--|------------------|------|-----------------------|-----------------------|
| Minimum Coupled Power IF = 100 mA @ 25°C (dBm) |                  |      |                       |                       |
| Fiber  | Refractive Index | N.A. | Version-1<br>μW / dBm | Version-2<br>μW / dBm |
| 50/125 μm                                      | Graded           | 0.2  | 17.8 / -17.5          | 25 / -16              |
| 62.5/125 μm                                    |                  | 0.28 | 32.3 / -14.9          | 45.4 / -13.4          |
| 100/140 μm                                     |                  | 0.29 | 92.9 / -10.3          | 130.5 / -8.8          |
| 200/300 μm                                     | Step             | 0.41 | 350.3 / -4.6          | 492 / -3.1            |

| OPF692, OPF693, OPF694                         |                  |      |                       |                       |
|--|------------------|------|-----------------------|-----------------------|
| Minimum Coupled Power IF = 100 mA @ 25°C (dBm) |                  |      |                       |                       |
| Fiber  | Refractive Index | N.A. | Version-1<br>μW / dBm | Version-2<br>μW / dBm |
| 50/125 μm                                      | Graded           | 0.2  | 12.6 / -19            | 25 / -16              |
| 62.5/125 μm                                    |                  | 0.28 | 22.9 / -16.4          | 45.4 / -13.4          |
| 100/140 μm                                     |                  | 0.29 | 65.8 / -11.8          | 130.5 / -8.8          |
| 200/300 μm                                     | Step             | 0.41 | 248 / -6.1            | 492 / -3.1            |

Conversion values in these tables are approximate and will vary depending on many factors.

**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.

TT Electronics | OPTEK Technology  
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200  
www.ttelectronics.com | sensors@ttelectronics.com