

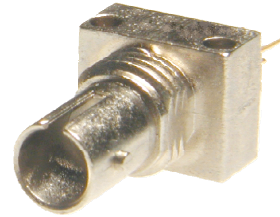
# Fiber Optic Transmitter

## OPF694 Series



### Features:

- Low Cost 850 nm LED technology
- High thermal stability
- High optical coupling efficiency to multimode fiber
- Metal ST\* style receptacle
- Industrial temperature range



### Description:

The OPF694 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 either 50/125µm or 62.5/125µm diameter multimode fiber. Two power ranges with upper and lower limits are offered which allows the designer to select a device best suited for the application.

### 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.	OPF694-1	OPF694-2
50/125 µm	Graded Index	0.20	-19dBm	-16dBm
62.5/125 µm	Graded Index	0.28	-15dBm	-12dBm
100/140 µm	Graded Index	0.29	-11dBm	-8dBm
200/300 µm	Step Index	0.41	-5dBm	-2dBm



RoHS ST<sup>®</sup> is a registered trademark of Fitel USA Corp..

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.

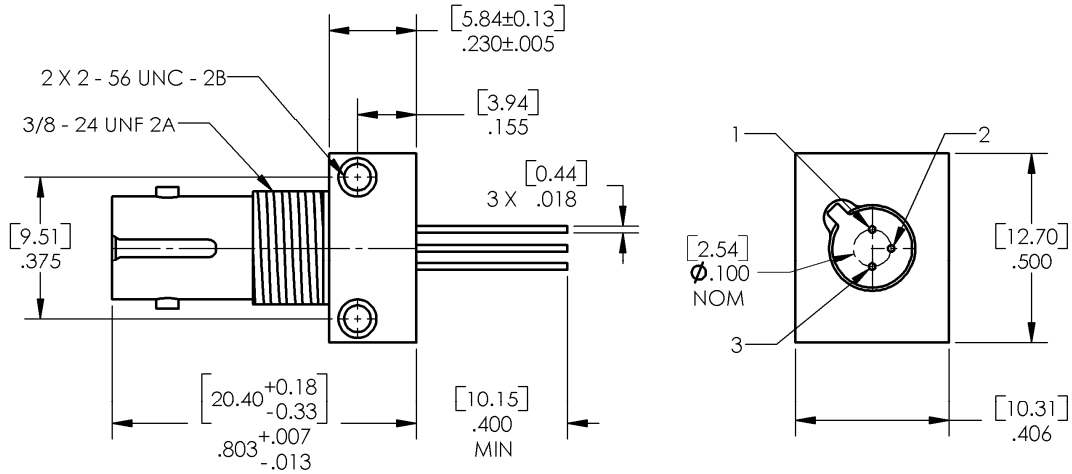
OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

# Fiber Optic Transmitter

OPF694 Series

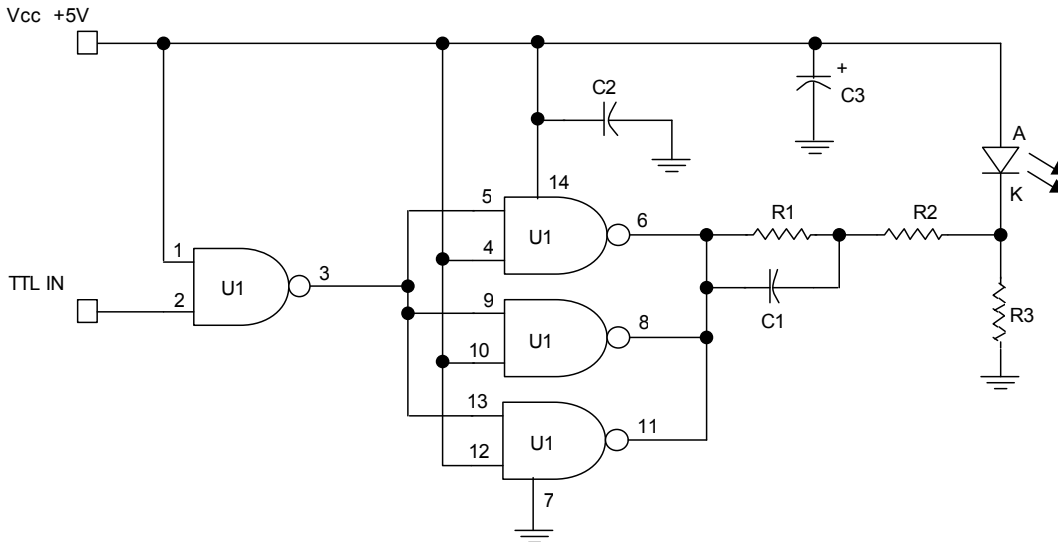


## Mechanical Data



DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

## Application Circuit: 155Mbps TTL Drive Circuit



Part	Description	Value/ Type	Symbol	Tol.
C1	Capacitor	75	pF	20%
C2	Capacitor	100	pF	20%
C3	Capacitor	10	µF	20%
R1	Resistor	33	Ω	5%
R2	Resistor	33	Ω	5%
R3	Resistor	270	Ω	5%
U1	IC, Quad NAND	74ACTQ00	-	-

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.

OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

# Fiber Optic Transmitter

OPF694 Series



## Electrical Specifications

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 Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITIONS
$P_{T50}$	Total Coupled Power	OPF694-1	-19.0		-14.0	dBm	$I_F = 100\text{ mA}$
	50/125 mm Fiber NA = 0.20	OPF694-2	-16.0		-11.0	dBm	
$V_F$	Forward Voltage		1.5		2.1	V	$I_F = 100\text{ mA}$
$V_R$	Reverse Voltage		1.8			V	$I_R = 100\ \mu\text{A}$
$\lambda$	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			4.5	6.5	ns	$I_F = 100\text{ mA}; 10\% \text{ to } 90\%^{(3)}$

### Notes:

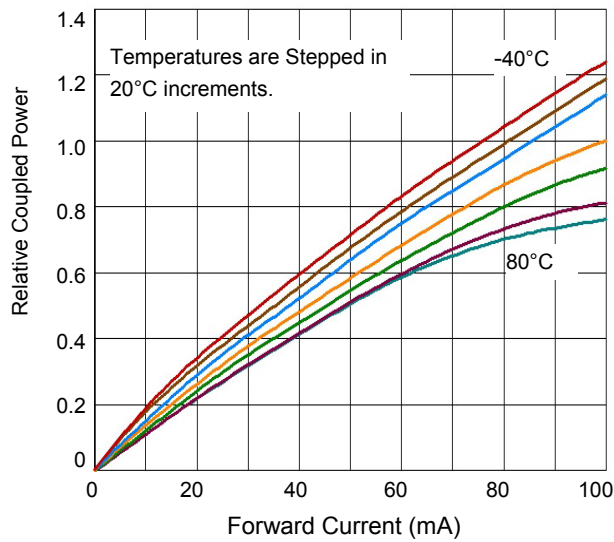
1. Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
2. De-rate linearly at 1.0mA /°C above 25°C .
3. No Pre-bias.
4. All Optek fiber optic LED products are subjected to 100% burn-in as part of its quality control process. The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

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.

OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

### Performance

#### Relative Coupled Power vs. Forward Current



#### Typical Forward Voltage vs. Forward Current

