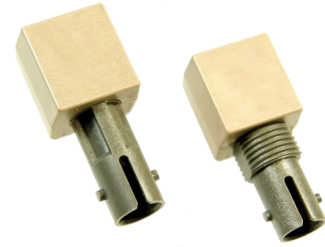


# Fiber Optic Receiver

## OPF2416, OPF2416T, OPF2416TC



### Features:

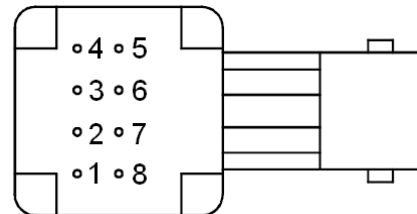
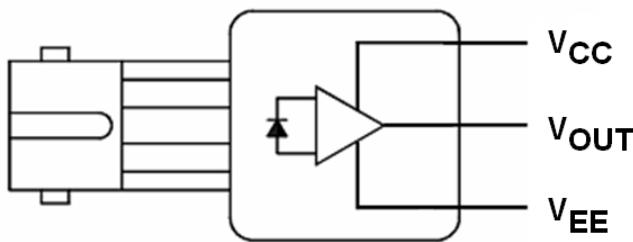
- Up to 155Mbps operation
- 850nm wavelength
- ST<sup>®</sup> style port
- Wave solderable
- Wide temperature range

### Description:

The OPF2416 family is a low cost solution for high speed fiber optic communications designs. The internal lensing of this receiver's design allows optimal response for fiber sizes of 100µm and below. The receiver is comprised of a high speed, low noise, photodiode coupled to a transimpedance amplifier (TIA). The photodiode/TIA combination produces an output voltage that is proportional to the input light amplitude. This hybrid approach solves many of the problems of high speed data link designs by placing the photodiode close to the TIA. The amplification of the TIA makes the output much less susceptible to EMI. The output of the OPF2416 is an analog, low impedance, emitter follower voltage source. Subsequent circuitry can be utilized to convert the analog voltage to ECL/TTL for digital data rates up to 155 Mbps. The OPF2416 is available with either standard or threaded panel mount ST<sup>®</sup> receptacles. The threaded version is also available in conductive plastic.

### Applications:

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



PIN	FUNCTION
1	Not Connected
2	V <sub>OUT</sub>
3	V <sub>EE</sub>
4	Not Connected
5	Not Connected
6	V <sub>CC</sub>
7	V <sub>EE</sub>
8	Not Connected

"T" suffix = Threaded ST<sup>®</sup> package

"TC" suffix = Threaded, conductive ST<sup>®</sup> package



RoHS



ESD Class 2

ST<sup>®</sup> is a registered trademark of AT&T.

Pins 3 & 7 are electrically connected to the header.  
Pins 1,4,5 & 8 are mechanically connected together.

### General Note

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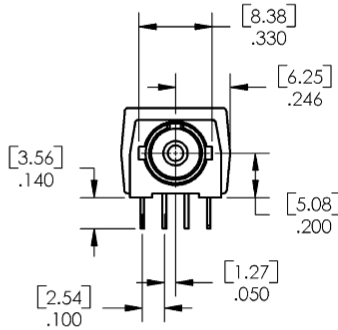
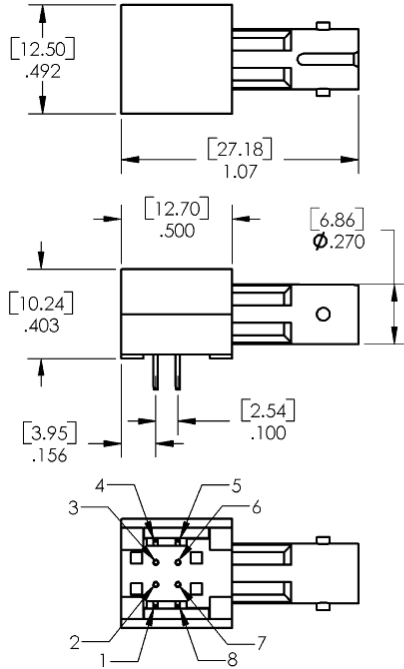
OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

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### Mechanical Data

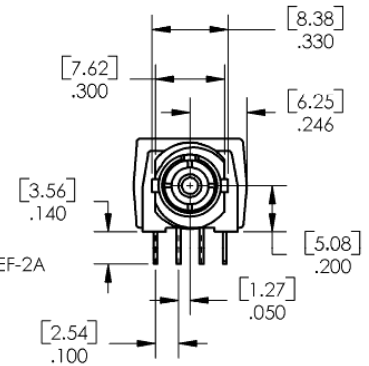
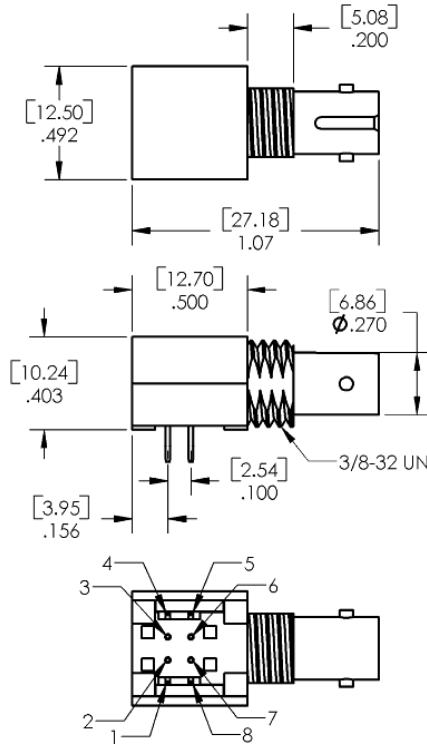


**OPF2416**

PINS 1, 4, 5, & 8 - .020 X .015  
[0.51 X 0.38]

PINS 2, 3, 6, & 7 -  $\phi$ .018  
[0.46]

**OPF2416T**  
**OPF2416TC**



PINS 1, 4, 5, & 8 - .020 X .015  
[0.51 X 0.38]

PINS 2, 3, 6, & 7 -  $\phi$ .018  
[0.46]

DIMENSIONS ARE IN: [MILLIMETERS]  
INCHES

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### Electrical Specifications

Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)	
Storage Temperature Range	-55° C to +85° C
Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature <sup>(1)</sup>	260° C
Supply Voltage	-0.5 V to 6.0 V
Output Current	25 mA
Output Pin Voltage	-0.5 V

Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity	5.3	7.0	9.6	mV/ $\mu\text{W}$	$\lambda_p = 850\text{ nm}$ , $f = 50\text{ MHz}$
		4.5		11.5		$-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
$V_{\text{NOISE}}$	RMS Output Noise Voltage		0.40	0.59	mV	75 MHz Bandwidth Filtered, $P_R = 0$
				0.70		Unfiltered Bandwidth, $P_R = 0$
$P_N$	RMS Equivalent Optical Noise Input Power		0.050	0.065	$\mu\text{W}$	100 MHz Bandwidth Filtered, $P_R = 0$
$P_R$	Peak Received Optical Power			175	$\mu\text{W}$	$-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
				150		
$V_{\text{ODC}}$	DC Output Voltage	-4.2	-3.1	-2.4	V	$P_R = 0$
$I_{\text{EE}}$	Supply Current		9	15	mA	$R_L = \infty$
BW	Bandwidth		125		MHz	-3dB electrical
$t_r, t_f$	Rise Time, Fall Time		3.3	6.3	ns	$f = 50\text{ MHz}$ , $P_R = 100\ \mu\text{W peak}$ , $R_L = 511\ \Omega$ , $C_{\text{LOAD}} = 5\ \text{pF}$
PWD	Pulse Width Distortion		0.4	2.5	ns	$f = 50\text{ MHz}$ , $P_R = 100\ \mu\text{W}$
PSRR	Power Supply Rejection Ratio		20		dB	$f = 10\text{ MHz}$

Notes:

- Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.

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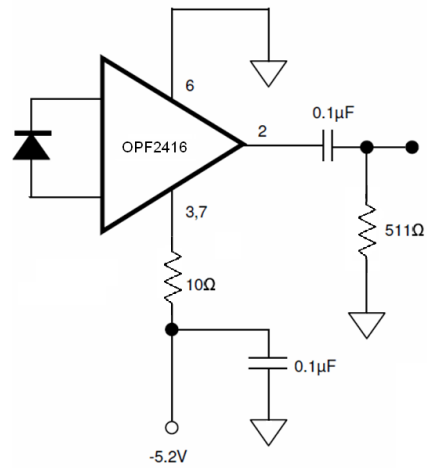
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Application Circuit



Note that the 10Ω resistor and bypass capacitor are critical.

