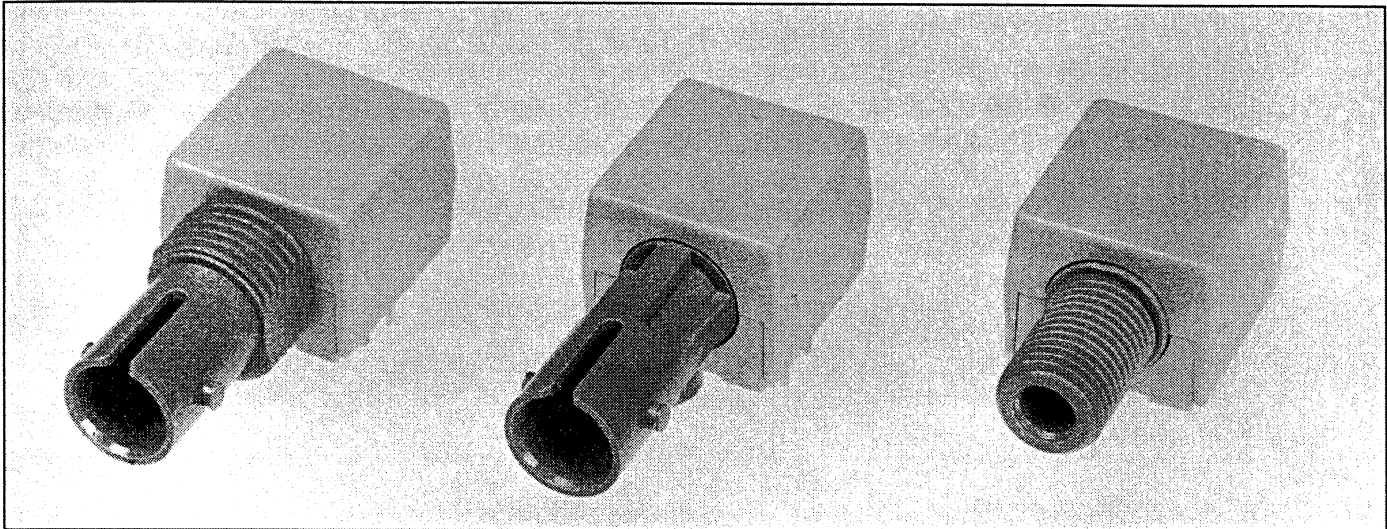


# 25 MHz Fiber Optic Receiver

## Types OPF2404, OPF2414, OPF2414T



### Features

- Low Cost
- No Mounting Hardware Required
- Wide Temperature Range
- Link Distances up to 4 KM
- SMA or ST\* Style Ports
- Wave Solderable

### Description

The OPF2404/2414 is a low cost high speed fiber optic receiver. The OPF2404/2414 is ideal for fibers as small as 50/125  $\mu\text{m}$ . The lensed optical system keeps the receiver's response consistent for all fiber sizes.

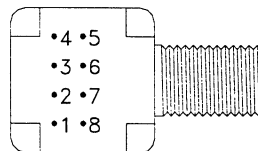
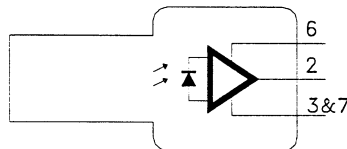
The output of the receiver is an analog, low impedance, voltage source capable of driving an amplifier or level translating circuitry for use on various data formats and data rates up to 35MBaud.

The receiver is comprised of a high speed, low noise, photodiode coupled to a transimpedance amplifier which produces an output voltage proportional to the input light amplitude. This hybrid approach solves many of the problems of high speed data link designs by placing a pre-amplifier close to the photodiode. The level amplification produced by the transimpedance amplifier makes the output signal much less susceptible to interference which is a problem often found at high data rates and in high EMI environments.

\*ST is a registered trademark of AT&T.

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

Storage Temperature .....	$-55^\circ\text{C}$ to $+85^\circ\text{C}$
Operating Temperature .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Lead Soldering Temperature (for 10 sec.) .....	$260^\circ\text{C}$
Supply Voltage .....	$-0.5$ to $7.0\text{ V}$



PIN	FUNCTION
1	N.C.
2	Signal
3	Common
4	N.C.
5	N.C.
6	Vcc
7	Common
8	N.C.

Bottom View

See Mechanical Dimensions page 8-19 for Mechanical Drawings.  
"T" suffix = Threaded ST package.

This component is susceptible to damage from electrostatic discharge (ESD). Normal static precautions should be taken in handling and assembly of this component to prevent ESD damage or degradation.

# Types OPF2404, OPF2414, OPF2414T

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

$4.75 \leq V_{CC} \leq 5.25$ ,  $R_{LOAD} = 511 \Omega$ , Fiber Sizes  $\leq 100$  Microns, N.A.  $\leq 0.35$

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	TEST CONDITION
R <sub>P</sub>	Responsivity	5.1	7	10.9	mV/ $\mu\text{W}$	at 840 nm
		4.6		12.3	mV/ $\mu\text{W}$	at 840 nm, $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
V <sub>NO</sub>	RMS Output Noise Voltage		.30	.36	mV	P <sub>R</sub> = 0 $\mu\text{W}$
				.43	mV	P <sub>R</sub> = 0 $\mu\text{W}$ , $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
P <sub>N</sub>	Equivalent Optical Noise Input Power		-43.7	-40.3	dBm	
			.042	.094	$\mu\text{W}$	
P <sub>R</sub>	Peak Input Power			-12.6	dBm	T <sub>A</sub> = 25 $^\circ\text{C}$
				55	$\mu\text{W}$	T <sub>A</sub> = 25 $^\circ\text{C}$
				-14	dBm	$-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
				40	$\mu\text{W}$	$-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$
I <sub>CC</sub>	Power Supply Current		3.4	6.0	mA	R <sub>LOAD</sub> = $\infty$
t <sub>r</sub> , t <sub>f</sub>	Rise Time, Fall Time (10% to 90%)		14	19.5	ns	P <sub>R</sub> = 10 $\mu\text{W}$ Peak, R <sub>LOAD</sub> = 511 $\Omega$ , C <sub>LOAD</sub> = 13 pF
PWD	Pulse Width Distortion			2	ns	P <sub>R</sub> = 40 $\mu\text{W}$ Peak, R <sub>LOAD</sub> = 511 $\Omega$ , C <sub>LOAD</sub> = 13 pF