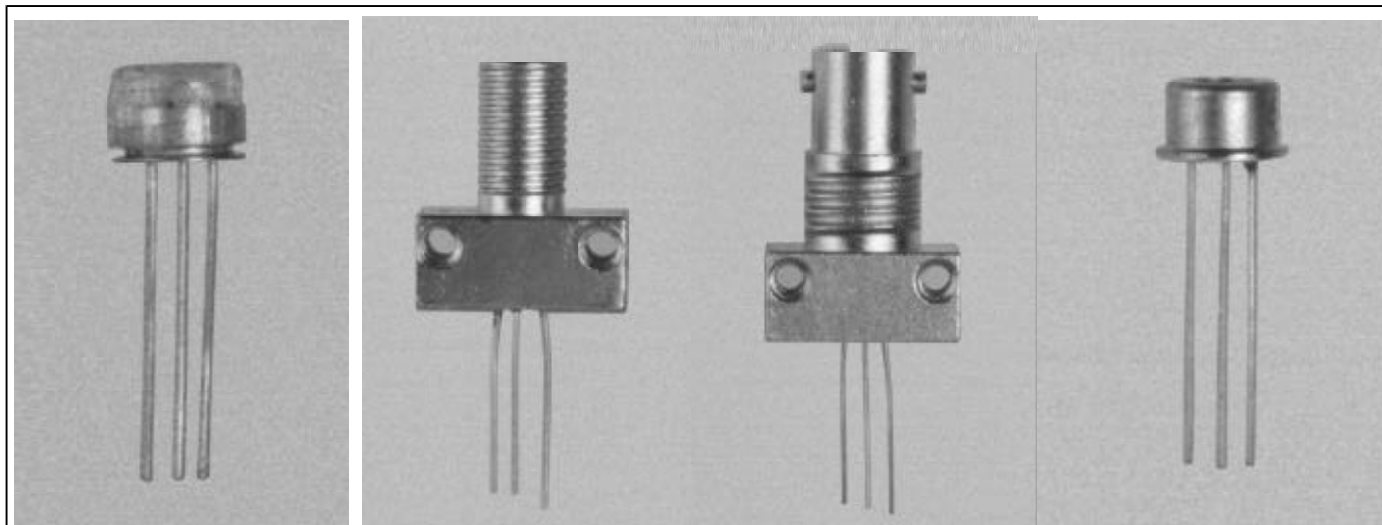


# 200kbps Fiber Optic Receiver

## Type OPF500, OPF510 Series



### Features

- Interfaces with all logic circuits
- Two output options
- Optimized for fiber optic applications using 50 to 200 micron fiber
- Data rate to 200kbps NRZ
- Available with multiple packaging options

### Description

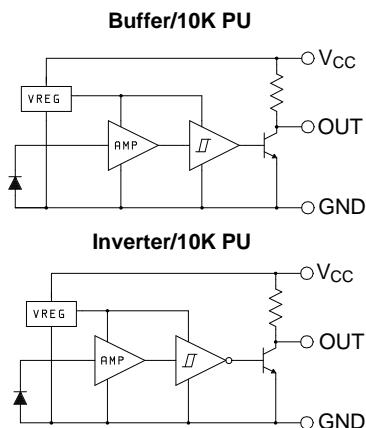
The OPF500, OPF510 series receiver contains a monolithic integrated circuit which incorporates a photodiode, a linear amplifier, a voltage regulator, and a Schmitt trigger on a single silicon chip. These receivers are designed for short haul fiber optic systems using 850 nm LED's such as Optek's OPF300 series.

These devices feature TTL/LSTTL compatible logic level output. An internal voltage regulator allows operation with supply voltages ranging from 4.5V to 16V.

### Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

Supply Voltage	18 V
Storage Temperature Range	-65° C to +100° C
Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240° C
Power Dissipation	200 mW
Duration of Output Short to V <sub>CC</sub>	1 sec.
Voltage at Output	30 V
Sinking Current	16 mA

### Schematics



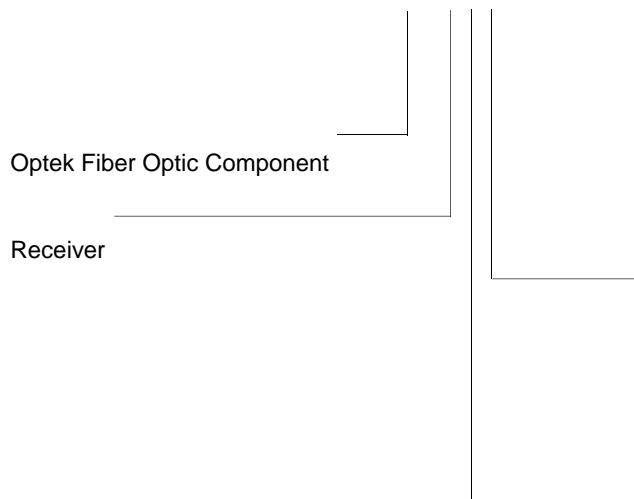
# Type OPF500, OPF510 Series

Electrical Characteristics (-40° C to +85° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V <sub>CC</sub>	Operating Supply Voltage	4.5		16.0	V	
P <sub>IN</sub>	Input Sensitivity (OPF5X0,1,2)		1.0	1.5	μW	50% Duty Cycle Square Wave
P <sub>IN</sub>	Input Sensitivity (OPF5X5,6,7)		1.5	2.0	μW	50% Duty Cycle Square Wave
V <sub>OH</sub>	High Level Output Voltage Buffer 10K Pull-up	V <sub>CC</sub> -1.5			V	P <sub>IN</sub> > 2.0 μW, V <sub>CC</sub> = 4.5 V to 16 V
	Inverter 10K Pull-up	V <sub>CC</sub> -1.5			V	P <sub>IN</sub> < 0.1 μW, V <sub>CC</sub> = 4.5 V to 16 V
V <sub>OL</sub>	Low Level Output Voltage Buffer, 10K Pull-up Buffer Open-collector			0.4	V	P <sub>IN</sub> < 0.1 μW, V <sub>CC</sub> = 4.5 V to 16 V
	Inverter, 10K Pull-up Inverter Open-collector			0.4	V	P <sub>IN</sub> > 2.0 μW, V <sub>CC</sub> = 4.5 V to 16 V
I <sub>CC</sub>	Supply Current		5.0	12.0	mA	V <sub>CC</sub> = 4.5 V to 16 V, No load on output
BW	Bandwidth	200			kHz	P <sub>IN</sub> > 2.0 μW, 50% Duty Cycle
PWD	Pulse With Distortion			10	%	1 μW < P <sub>IN</sub> < 100 μW, f = 20 kHz, D.C. = 50%
t <sub>r</sub>	Buffer			300	ns	P <sub>IN</sub> = 1.5 μW, V <sub>CC</sub> = 5 V
t <sub>f</sub>				100	ns	
t <sub>r</sub>	Inverter			100	ns	P <sub>IN</sub> = 1.5 μW, V <sub>CC</sub> = 5 V
t <sub>f</sub>				300	ns	

## PART NUMBER GUIDE

### OPF5XX



- 0 - Plastic TO-18 Hsg.
- 1 - Plastic TO-18 in SMA
- 2 - Plastic TO-18 in ST\*
- 5 - Metal TO-46 Hsg.
- 6 - Metal TO-46 in SMA
- 7 - Metal TO-46 in ST

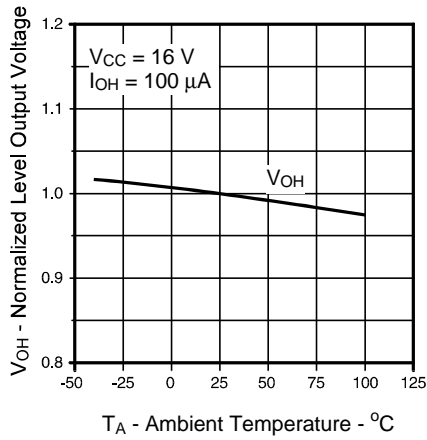
- 0 - 200kbps, 10K Pull-up buffer (non-inverting) output
- 1 - 200kbps, 10K Pull-up inverting output

\*ST is a registered trade mark of AT&T.

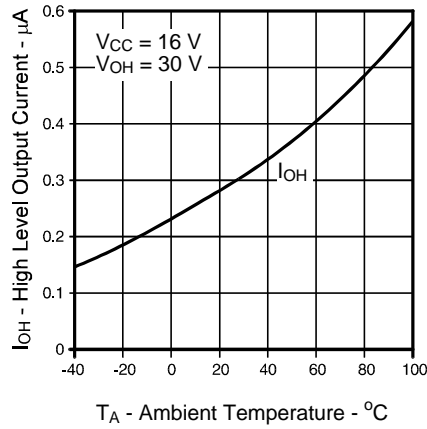
FIBER OPTIC COMPONENTS

## Typical Performance Curves

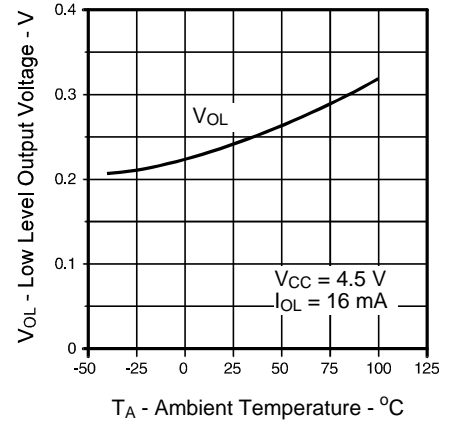
High Level Output Voltage vs Ambient Temperature



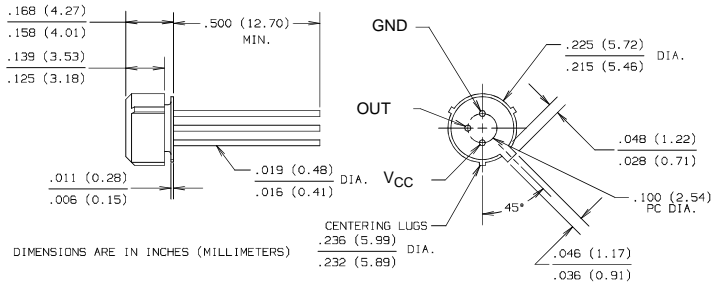
High Level Output Current vs Ambient Temperature



Low Level Output Voltage vs Ambient Temperature

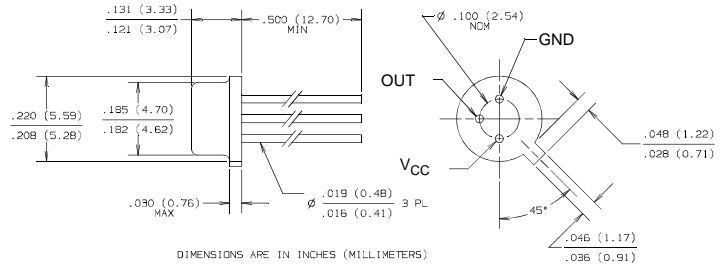


# Type OPF500, OPF510 Series



## Plastic Package

OPF500, OPF510

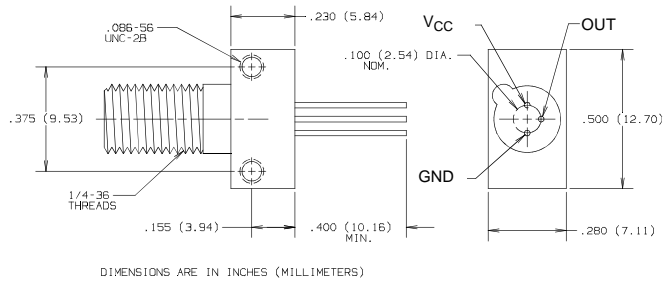


## Hermetic Package

OPF505, OPF515

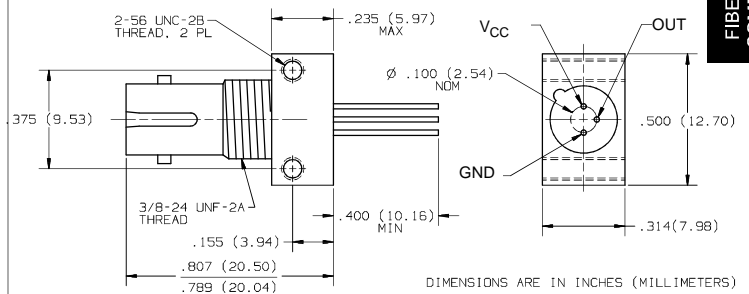
## SMA Package

OPF501, OPF511  
OPF506, OPF516



## ST\* Package

OPF502, OPF512  
OPF507, OPF517



FIBER OPTIC  
COMPONENTS

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

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