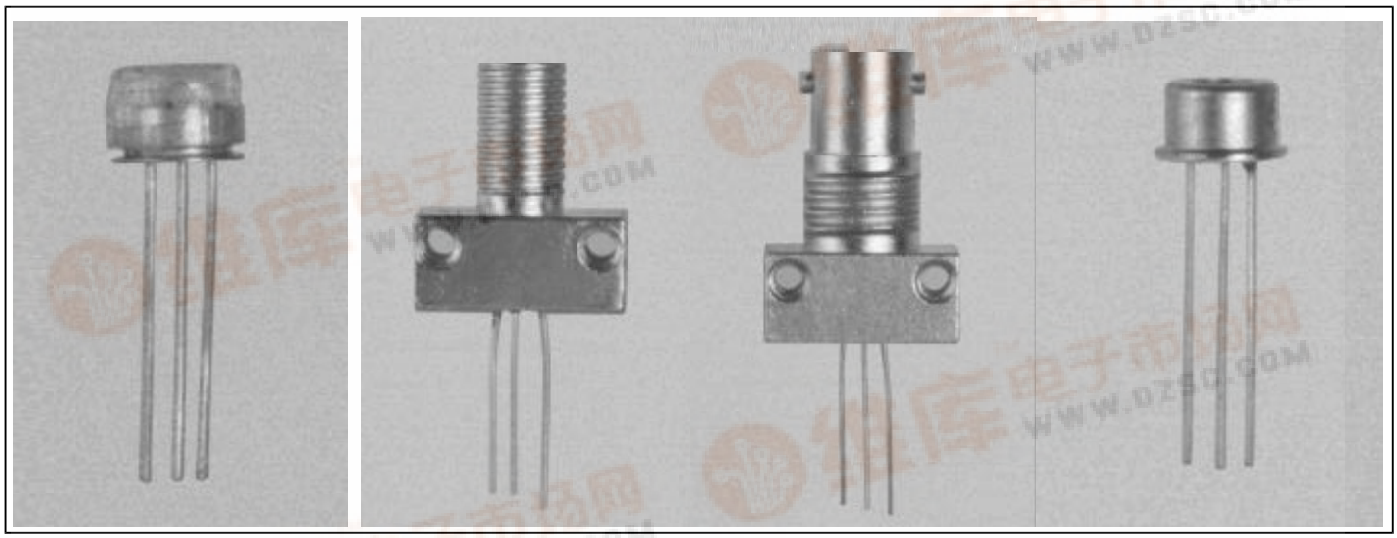
Product Bulletin OPF500
February 1996

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.

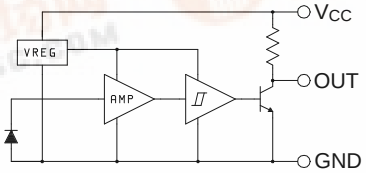
These devices feature TTL\LSTTL compatible logic level output. An internal voltage regulator allows operation with supply voltages ranging from 4.5V to 16V.

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

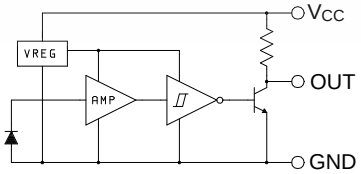
Supply Voltage	18 V
Storage Temperature Range	-65° C to +100° C
Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240° C
Power Dissipation	200 mW
Duration of Output Short to V_{CC}	1 sec.
Voltage at Output	30 V
Sinking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

Schematics

Buffer/10K PU



Inverter/10K PU



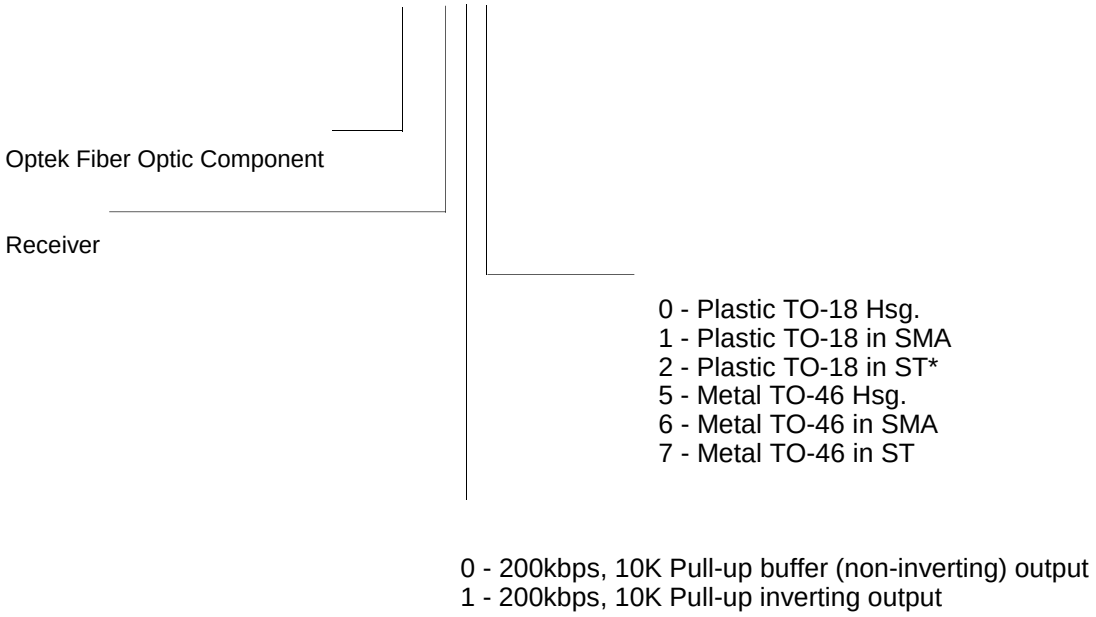
Type OPF500, OPF510 Series

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

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

PART NUMBER GUIDE

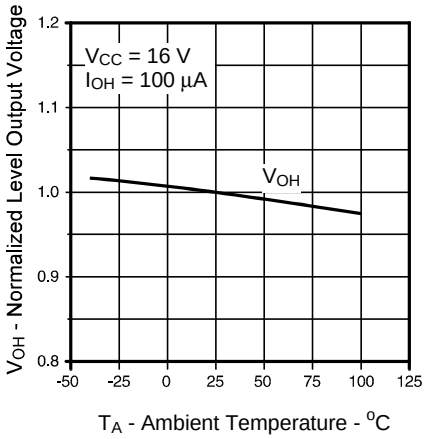
OPF5XX



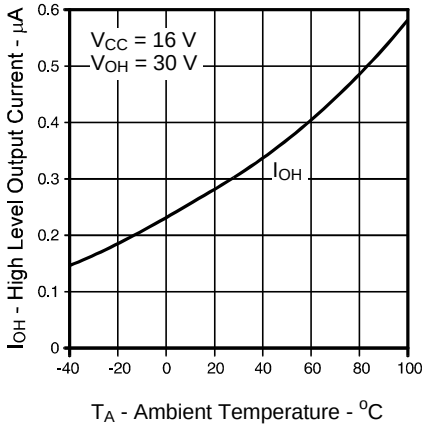
*ST is a registered trade mark of AT&T.

Typical Performance Curves

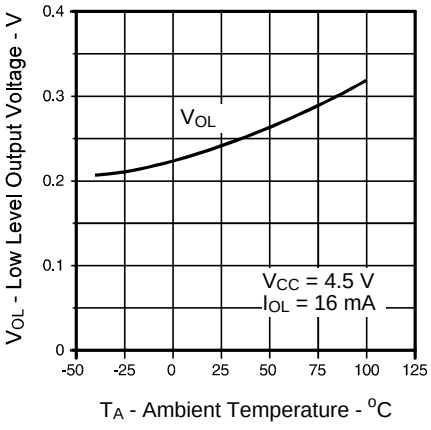
High Level Output Voltage vs Ambient Temperature



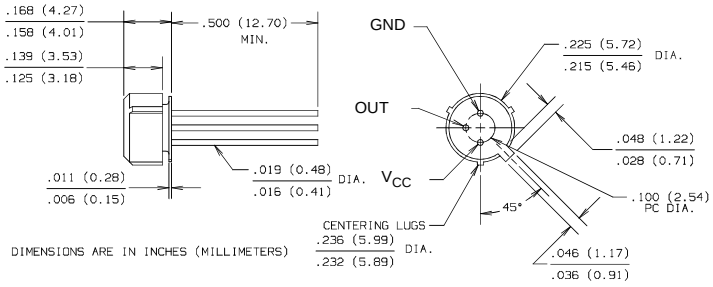
High Level Output Current vs Ambient Temperature



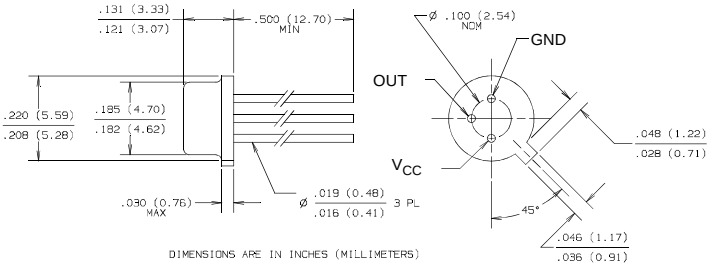
Low Level Output Voltage vs Ambient Temperature



Type OPF500, OPF510 Series

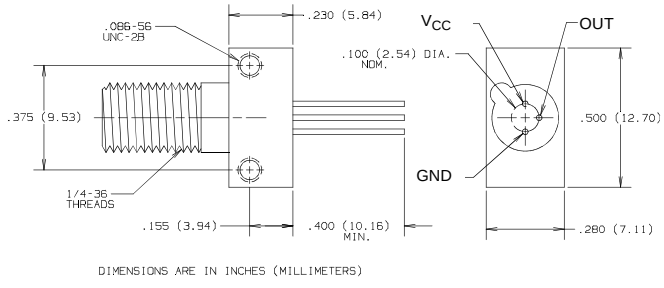


Plastic Package
OPF500, OPF510

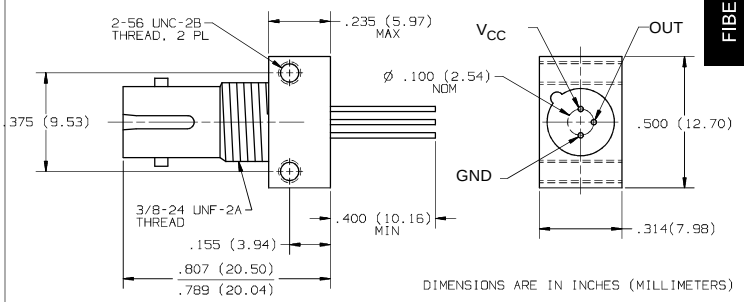


Hermetic Package
OPF505, OPF515

SMA Package
OPF501, OPF511
OPF506, OPF516



ST* Package
OPF502, OPF512
OPF507, OPF517



FIBER OPTIC COMPONENTS