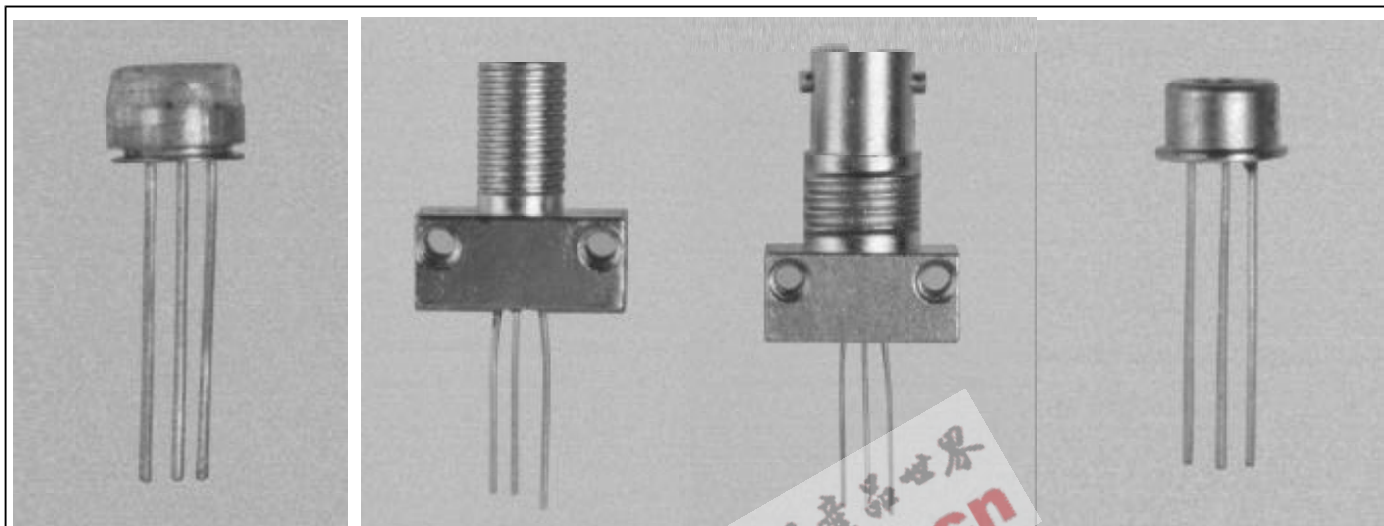


200kbps Fiber Optic Receiver

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.

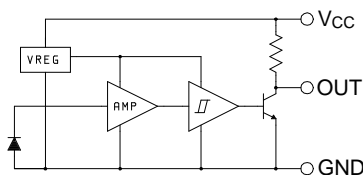
These devices feature TTL/STTL compatible logic level output. An internal voltage regulator allows operation with supply voltages ranging from 4.5V to 16V.

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

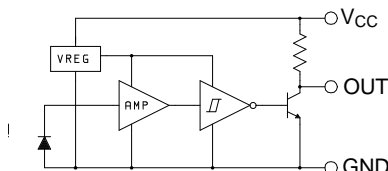
| | |
|--|-------------------|
| Supply Voltage | 18 V |
| Storage Temperature Range | -65° C to +100° C |
| Operating Temperature Range | -40° C to +85° C |
| Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] | 240° C |
| Power Dissipation | 200 mW |
| Duration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

Schematics

Buffer/10K PU



Inverter/10K PU



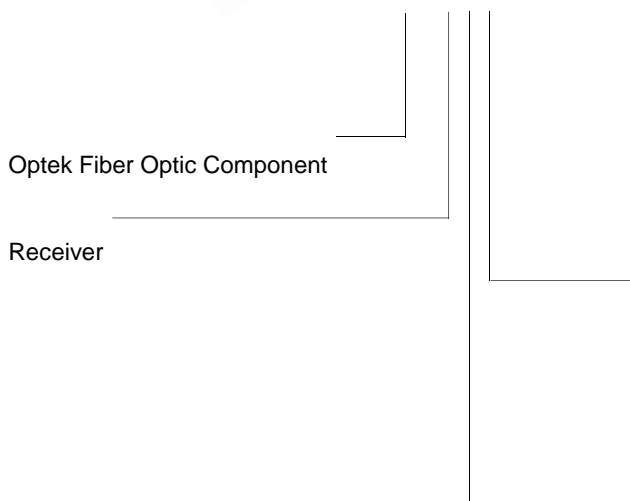
Type OPF500, OPF510 Series

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



- 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

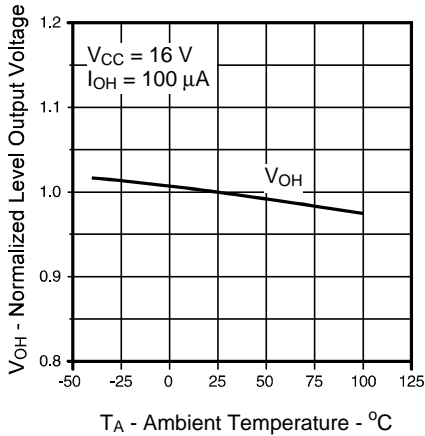
*ST is a registered trade mark of AT&T.

Type OPF500, OPF510 Series

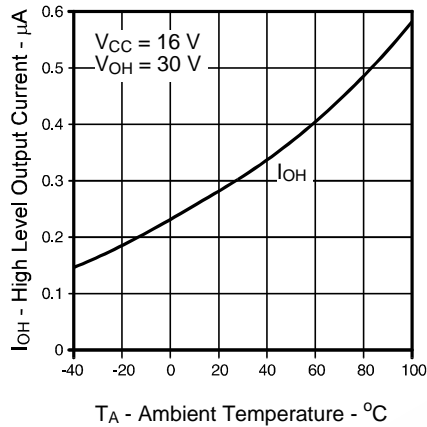


Typical Performance Curves

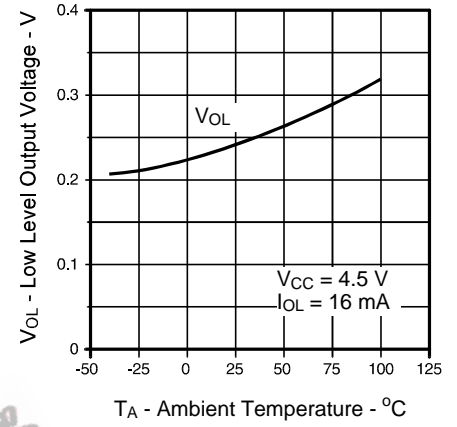
High Level Output Voltage vs Ambient Temperature



High Level Output Current vs Ambient Temperature

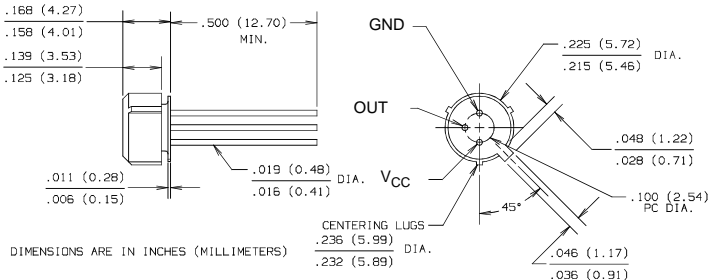


Low Level Output Voltage vs Ambient Temperature



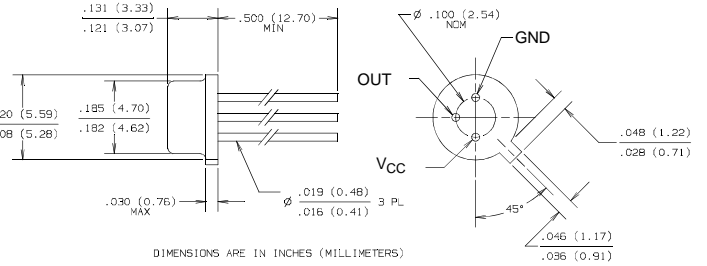
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Type OPF500, OPF510 Series



Plastic Package

OPF500, OPF510

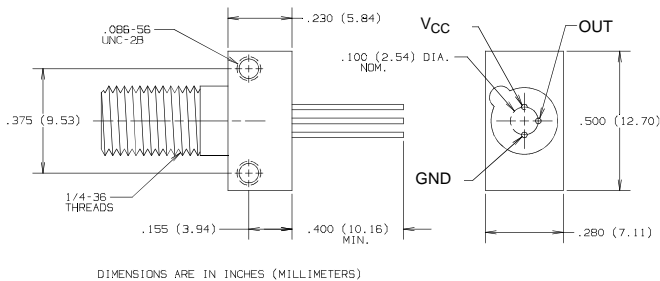


Hermetic Package

OPF505, OPF515

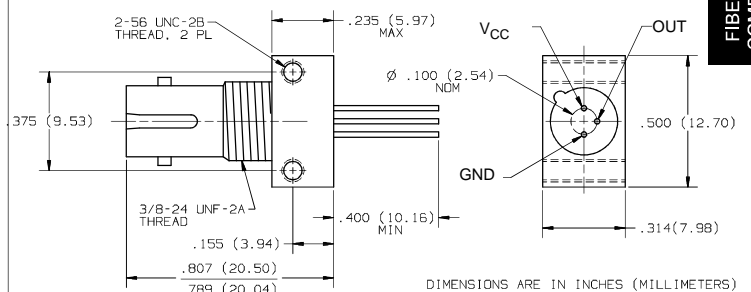
SMA Package

OPF501, OPF511
OPF506, OPF516



ST* Package

OPF502, OPF512
OPF507, OPF517



FIBER OPTIC COMPONENTS