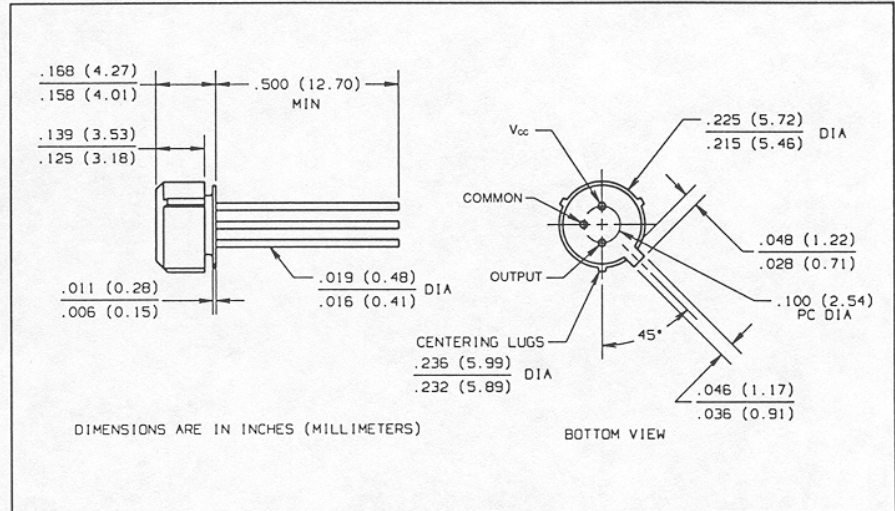
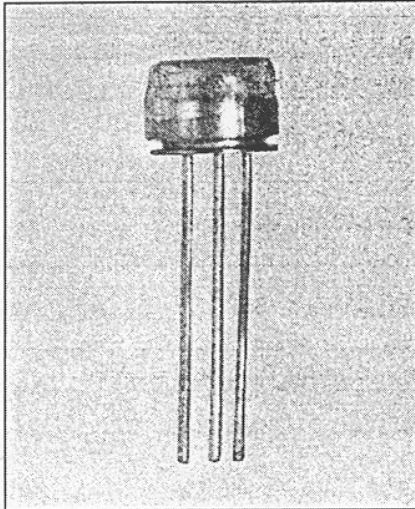


25 MHz Fiber Optic Receiver

Type OPF540



Features

- Electrically isolated plastic cap package
- Designed to self align in the 0.228 diameter bore of standard fiber optic receptacles
- Press fit simplifies component installation
- Optimized for fiber optic applications using 50 to 200 micron fiber

Description

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 35 MBaud.

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.

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

| | |
|------------------------------------------|-----------------------------------------------|
| Storage Temperature | -55 $^\circ\text{C}$ to +115 $^\circ\text{C}$ |
| 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 V |

Type OPF540

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 ≤ 100 Microns, N.A. ≤ 0.35

| SYMBOL | PARAMETERS | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---------------------------------|--------------------------------------|------------|----------------|----------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R _p | Responsivity | 6.5 5.8 | 9.3 | 12.5 14.1 | mV/ μ W mV/ μ W | at 840 nm at 840 nm, $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$ |
| V _{NO} | RMS Output Noise Voltage | | 0.30 | 0.36 0.43 | mV mV | $P_R = 0 \mu\text{W}$ $P_R = 0 \mu\text{W}$, $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$ |
| P _N | Equivalent Optical Noise Input Power | | -44.9 0.032 | -40.9 0.082 | dBm μ W | |
| P _R | Peak Input Power | | | -13.2 48 -14.7 34 | dBm μ W dBm μ W | $T_A = 25^\circ\text{C}$ $T_A = 25^\circ\text{C}$ $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$ $-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$ |
| I _{CC} | Power Supply Current | | 3.4 | 6.0 | mA | $R_{LOAD} = \infty$ |
| t _r , t _f | Rise Time, Fall Time (10% to 90%) | | 14 | 19.5 | ns | $P_R = 10 \mu\text{W}$ Peak, $R_{LOAD} = 511 \Omega$, $C_{LOAD} = 13 \text{ pF}$ |
| PWD | Pulse Width Distortion | | | 2 | ns | $P_R = 40 \mu\text{W}$ Peak, $R_{LOAD} = 511 \Omega$, $C_{LOAD} = 13 \text{ pF}$ |

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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