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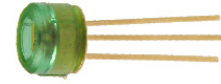
Fiber Optic Receiver

OPF520 Series



Features:

- Low Cost plastic cap package
- Designed to self align in the bore of standard fiber optic receptacles
- Press fit simplifies installation
- Optimized for fiber optic applications using 50 to 200 micron fiber



Description:

The OPF520 series fiber optic receiver is a high performance device packaged for data communications links. As such, it is designed to work with fiber core diameters from 50 μ m to 200 μ m and over a broad input power range. The construction contains a monolithic photo-IC comprised of a photodiode, biasing network, DC amplifier and an open collector output transistor. The output circuitry makes this device compatible with TTL and CMOS logic.

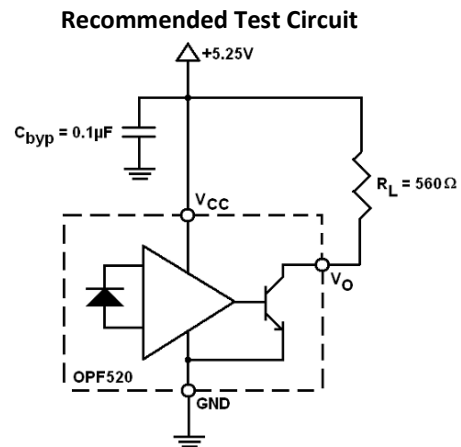
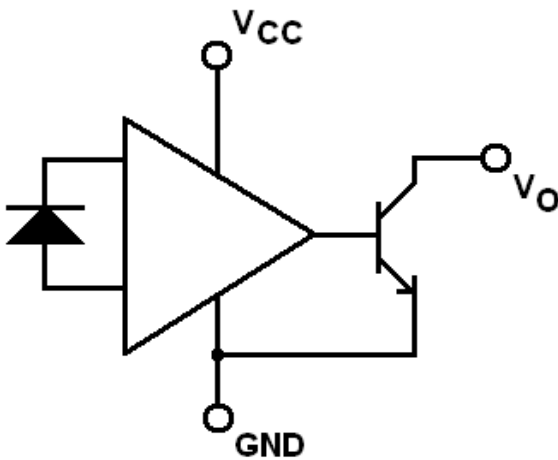
This receiver is designed to operate from a single 5V supply. It is essential that a bypass capacitor be connected from V_{CC} to GND in order to ensure the best possible operation.

Applications:

- Industrial Ethernet equipment
- Copper-to-fiber media conversion
- Intra-system fiber optic links
- Video surveillance systems

Part Ordering Information

| Part Number | Description |
|-------------|-----------------------|
| OPF520 | Plastic Cap Component |
| OPF522 | Metal ST Receptacle |



RoHS

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

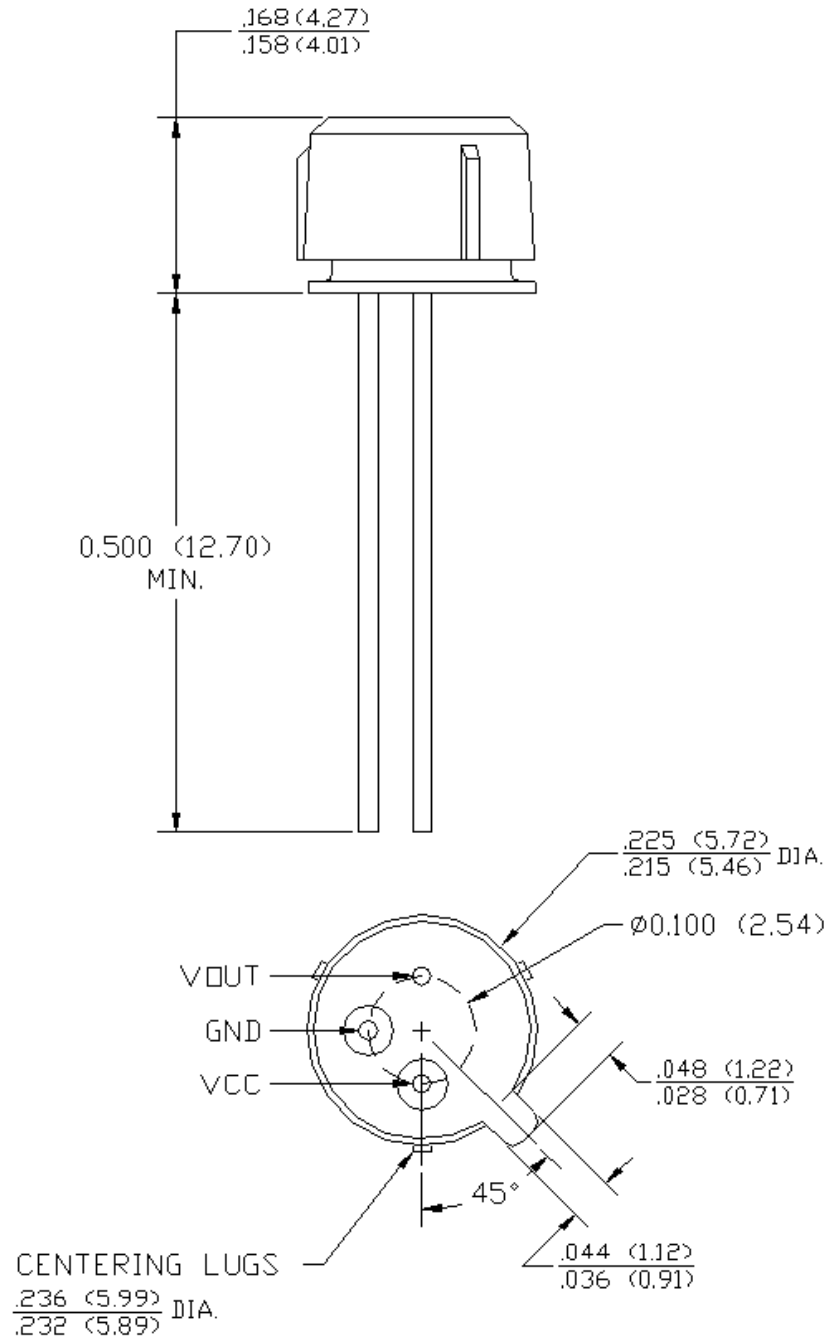
OPTEK Technology, Inc.
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Fiber Optic Receiver

OPF520 Series



Mechanical Outline—OPF520



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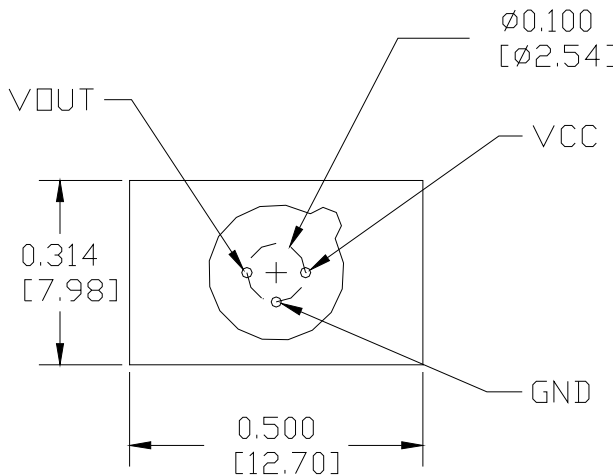
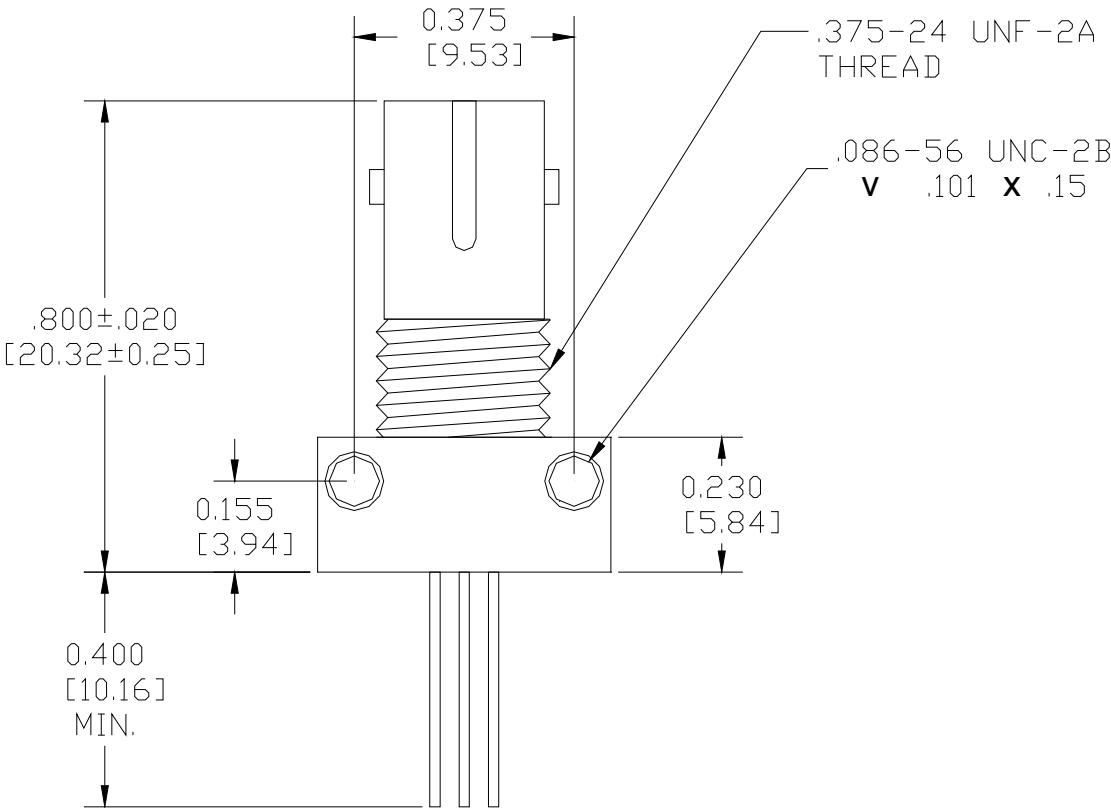
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Fiber Optic Receiver

OPF520 Series



Mechanical Outline—OPF522



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Electrical Specifications

| Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted) | |
|---|-------------------|
| Storage Temperature | 55° C to +115° C |
| Operating Temperature | -40° C to +85° C |
| Lead Soldering Temperature (for 10 seconds) | 260° C |
| Supply Voltage | -0.5 V to +7.0 V |
| Output Current | 25 mA |
| Output Voltage | -0.5 V to +18.0 V |
| Open Collector Power Distribution | 40mW |
| Fan Out (TTL) | 5 ⁽¹⁾ |

| Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|---------------------------------------|-------|----------|------|---------------|---|
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| I_{OH} | High Level Output Current | | 5 | 250 | μA | $V_O = 18\text{V}$, $P_{OC} < -40\text{ dBm}$, See Note 2 |
| V_{OL} | Low Level Output Voltage | | 0.2 | 0.5 | V | $I_O = 8\text{ mA}$, $P_{OC} > +24\text{ dBm}$, See Note 2 |
| I_{CCH} | Supply Current, Output High | | 3.5 | 6.3 | mA | $V_{CC} = 5.25\text{ V}$, $P_{OC} < -40\text{ dBm}$, See Note 2 |
| I_{CCL} | Supply Current, Output Low | | 6.9 | 10 | mA | $V_{CC} = 5.25\text{ V}$, $P_{OC} < -24\text{ dBm}$, See Note 2 |
| $P_{OC(H)}$ | Peak Input Power Level, Output High | | | -40 | dBm | $\lambda_p = 850\text{ nm}$ |
| | (Guaranteed Output High) | | | 0.1 | μW | |
| $P_{OC(L)}$ | Peak Input Power Level, Output Low | -25.4 | | -9.2 | dBm | $\lambda_p = 850\text{ nm}$, $I_O = 8\text{ mA}$ |
| | | 2.9 | | 120 | μW | |
| | (Guaranteed Output Low) | -24 | | -10 | dBm | $\lambda_p = 850\text{ nm}$, $I_O = 8\text{ mA}$ |
| | | 4.0 | | 100 | μW | |
| t_r, t_f | Rise, Fall Time | | 30 | | ns | $P_{OC} = 20\text{ dBm (peak)}$, $f = 2.5\text{ MHz}$, See Note 3 |
| t_{PDHL} | Propagation Delay, Output High to Low | | 65 | | ns | |
| t_{PDLH} | Propagation Delay, Output Low to High | | 100 | | ns | |
| PWD | Pulse Width Distortion | | ± 30 | | % | |

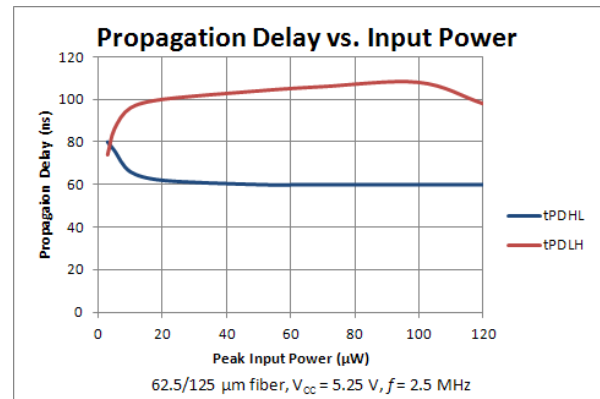
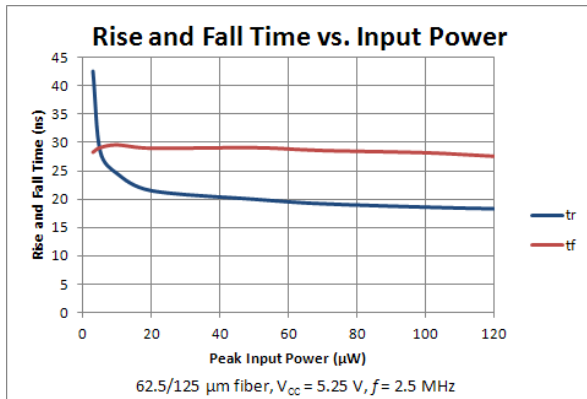
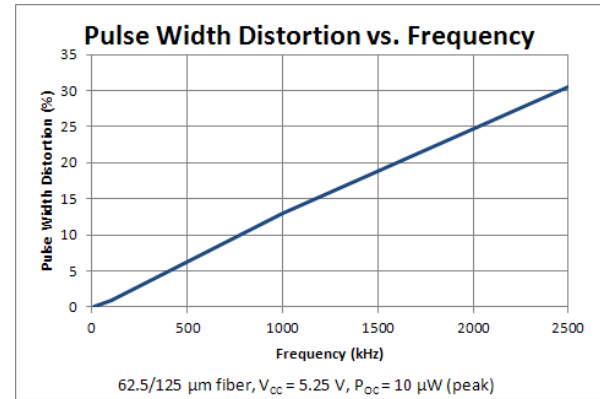
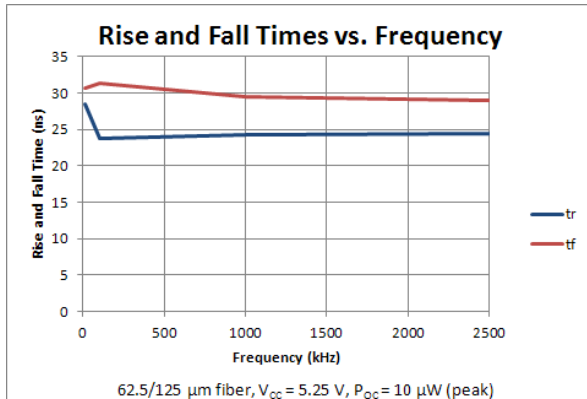
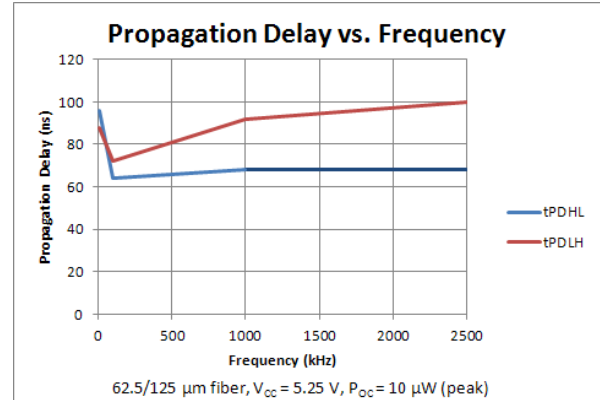
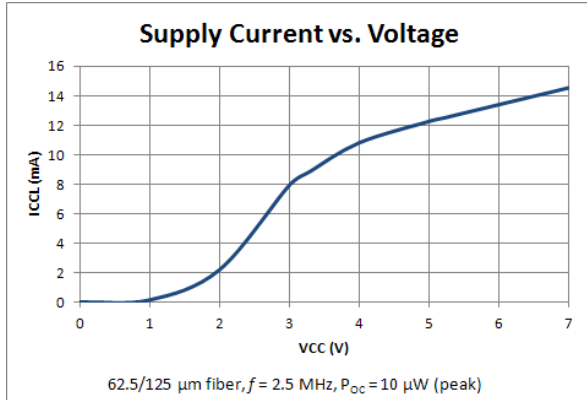
Notes:

- 8mA load (5 x 1.6 mA), $R_L = 560\ \Omega$
- Use recommended test circuit below, but connect V_O to an independent voltage source with $R_L = 0$.
- Use recommended test circuit below.

Performance

Switching Characteristics

(See Recommended Test Circuit)

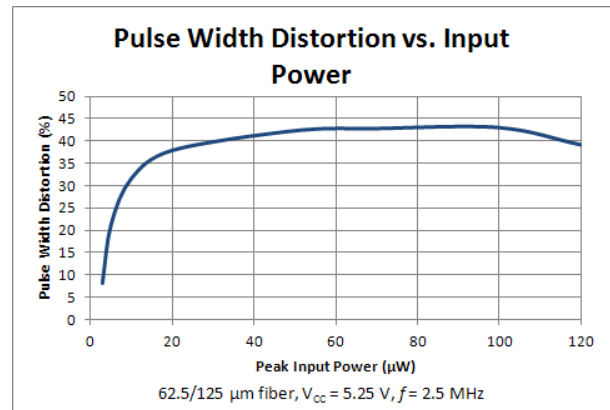
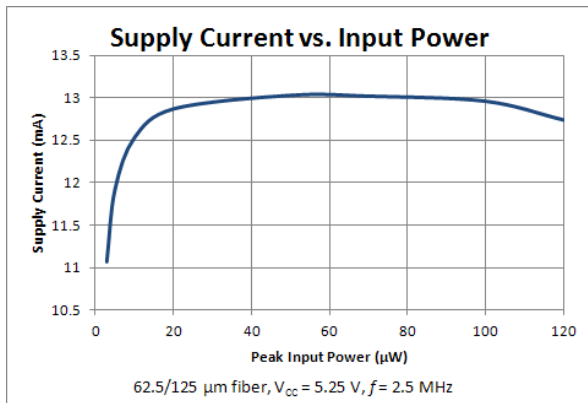


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Performance

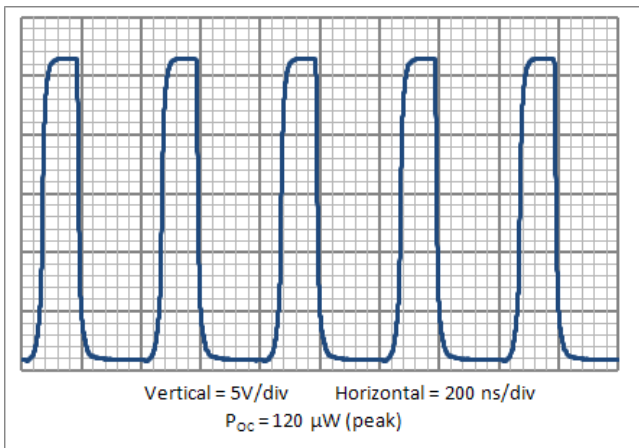
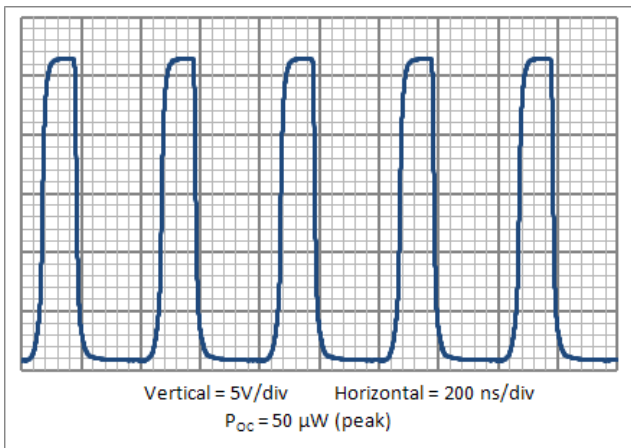
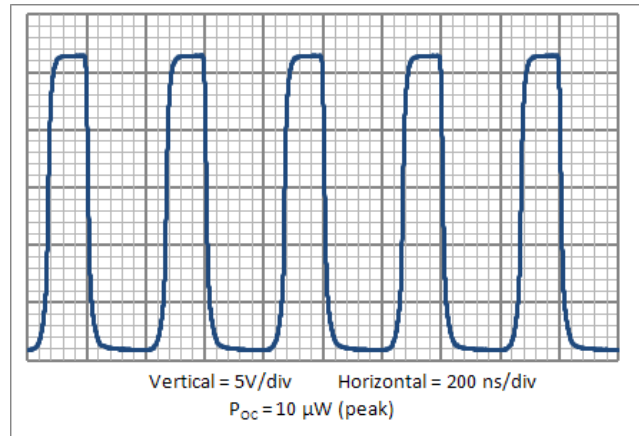
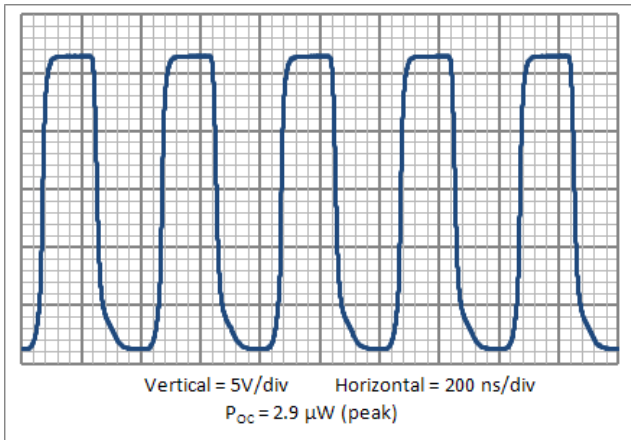
Switching Characteristics (continued)



Performance

Typical Waveforms for Various Input Powers

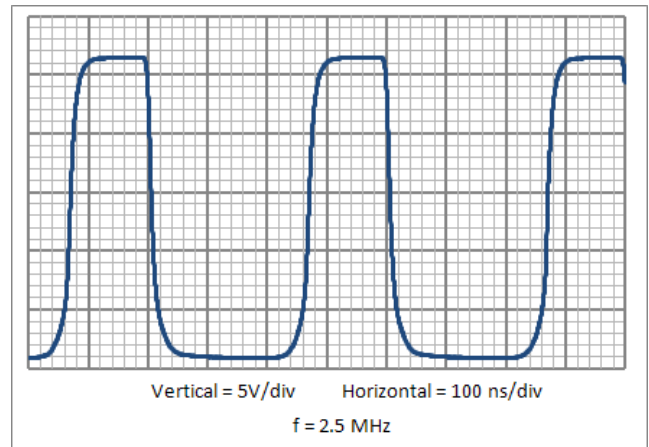
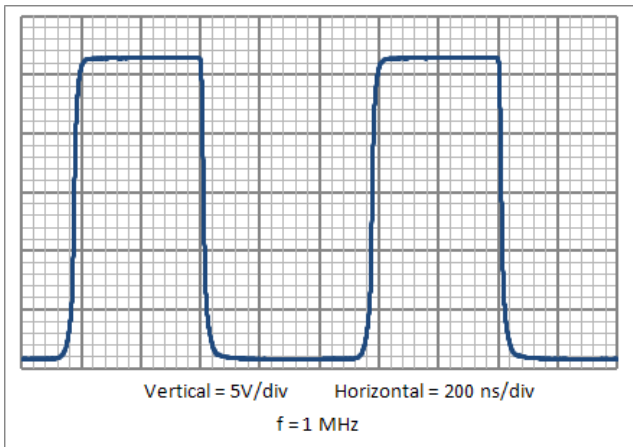
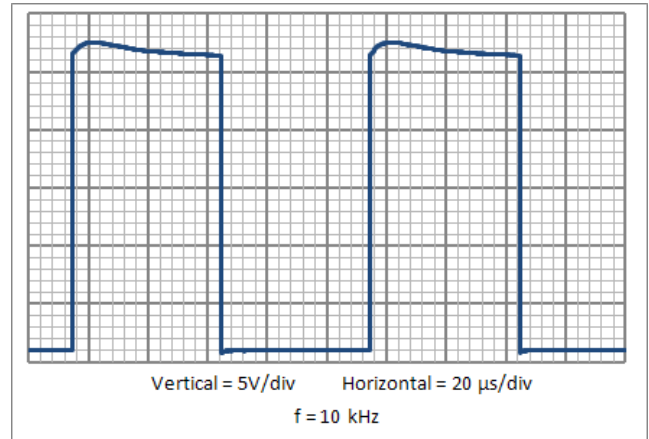
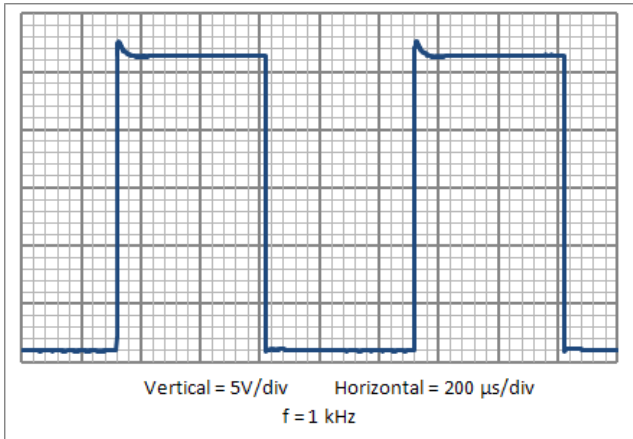
(62.5/125 μm fiber, $V_{CC} = 5.25\text{ V}$, $f = 2.5\text{ MHz}$)
(See Recommended Test Circuit)



Performance

Typical Waveforms for Various Frequencies

(62.5/125 μm fiber, $V_{CC} = 5.25\text{ V}$, $P_{OC} = 10\mu\text{W}$ (peak)
(See Recommended Test Circuit)



Performance

Typical Waveforms for Various Fiber Cables and Input Powers

($V_{CC} = 5.25\text{ V}$, $f = 2.5\text{ MHz}$)
(See Recommended Test Circuit)

