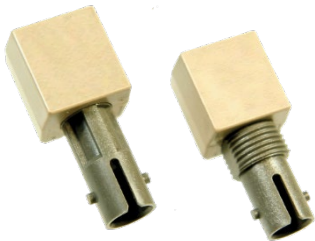


Fiber Optic Receiver

OPF2412, OPF2412T



Features:

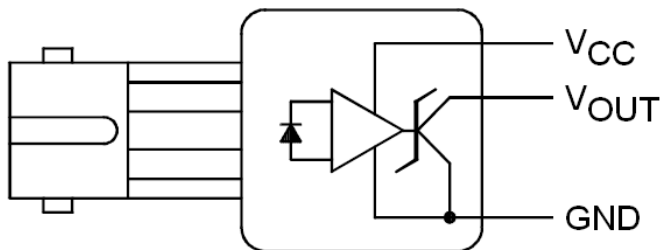
- Up to 5 Mbps operation
- 850 nm wavelength
- ST® style port
- CMOS and TTL compatible
- Wave solderable
- Wide temperature range

Description:

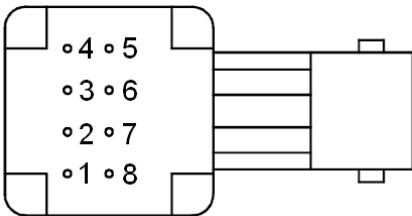
The OPF2412 family is a low-cost digital output fiber optic receiver. The lensed optical system keeps the receiver response consistent for all fiber sizes which makes it ideal for use on fibers as small as 50/125 μm . The design incorporates a monolithic photo-IC comprised of a photodetector and DC amplifier driving an open collector output Schottky transistor. The output makes the OPF2412 compatible with TTL and CMOS logic. The receiver is designed to operate from a single +5 V supply. A bypass capacitor (0.1 μF ceramic) should be connected from V_{CC} to GND of the receiver.

Applications:

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



"T" suffix = Threaded ST® package



PIN	FUNCTION
1	Not Connected
2	V_{CC}
3	GND
4	Not Connected
5	Not Connected
6	V_{OUT}
7	GND
8	Not Connected

Pins 3 & 7 are electrically connected to the header.
Pins 1, 4, 5 & 8 are mechanically connected together.



RoHS



ESD Class 2

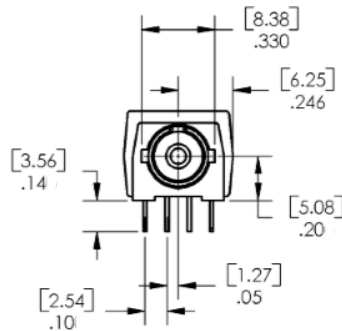
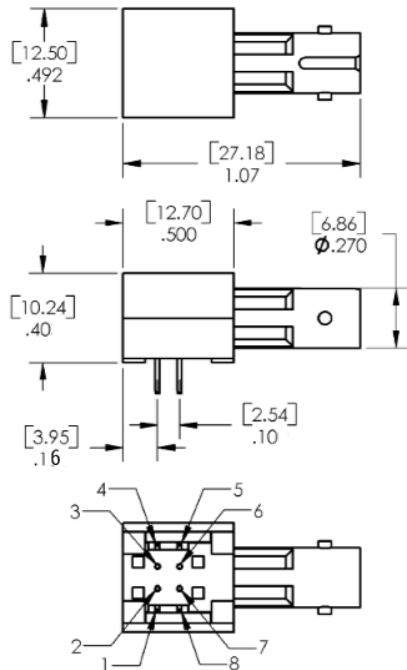
ST® is a registered trademark of AT&T.

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Mechanical Data



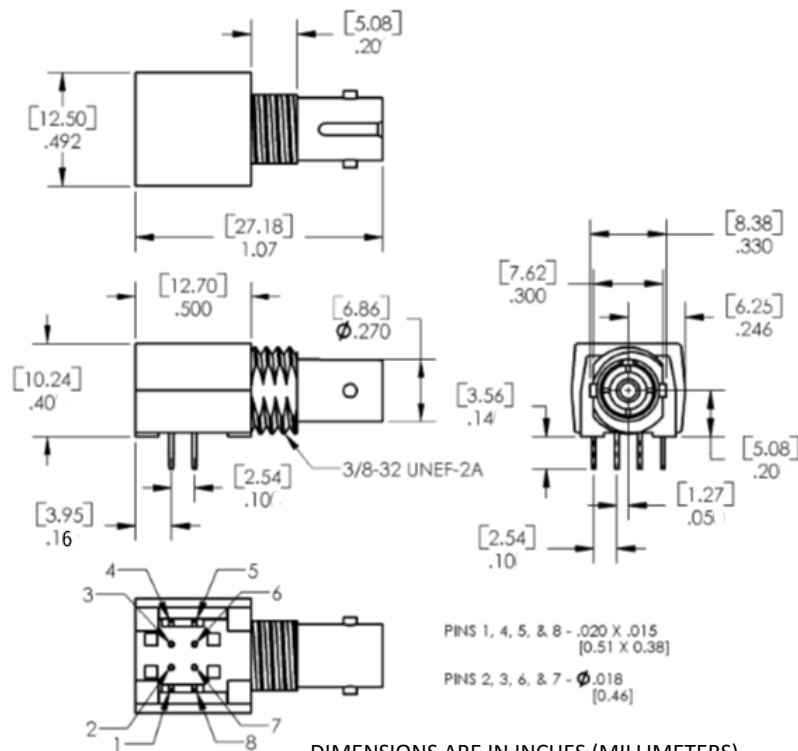
OPF2412

PINS 1, 4, 5, & 8 - .020 X .015
[0.51 X 0.38]

PINS 2, 3, 6, & 7 - Ø.018
[0.46]

OPF2412T

3 place decimals ± .005
2 place decimals ± .01



DIMENSIONS ARE IN INCHES (MILLIMETERS)

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Electrical Specifications

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

Storage Temperature Range	-55° C to +85° C
Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature ⁽¹⁾	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 Dissipation	40 mW
Fan Out (TTL) ⁽²⁾	5

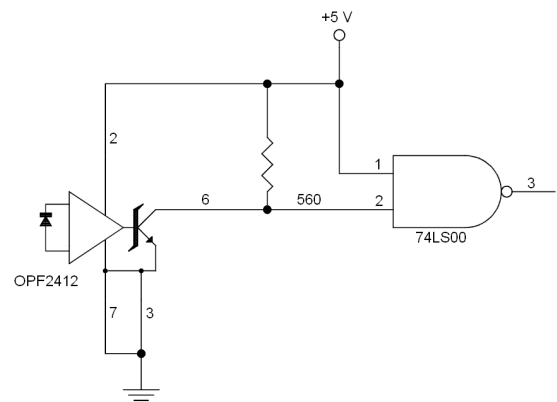
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I_{OH}	High Level Output Current	-	5	250	μA	$V_O = 18\text{ V}$, $P_R < -40\text{ dBm}$
V_{OL}	Low Level Output Voltage	-	0.4	0.5	V	$I_O = 8\text{ mA}$, $P_R > -24\text{ dBm}$
I_{CCH}	High Level Supply Current	-	3.5	6.3	mA	$V_{CC} = 5.25\text{ V}$, $P_R < -40\text{ dBm}$
I_{CCL}	Low Level Supply Current	-	6.2	10	mA	$V_{CC} = 5.25\text{ V}$, $P_R > -24\text{ dBm}$
P_{RH}	Peak Input Power Level, Logic HIGH	-	-	0.1	μW	$\lambda_p = 850\text{ nm}$
P_{RL}	Peak Input Power Level, Logic LOW	2.9	-	120	μW	$\lambda_p = 850\text{ nm}$, $I_{OL} = 8\text{ mA}$
P_{RL}	Peak Input Power Level, Logic LOW	4.0	-	100	μW	-40° C $\leq T_A \leq$ +85° C
t_{PLHR}	Propagation Delay LOW to HIGH	-	65	-	ns	$P_R = -21\text{ dBm}$, Data Rate = 5 MBd
t_{PHLR}	Propagation Delay HIGH to LOW	-	49	-	ns	$P_R = -21\text{ dBm}$, Data Rate = 5 MBd

Notes:

- (1) Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
- (2) 8 mA load (5 x 1.6 mA), $R_L = 560\text{ W}$.

Application Circuit



General Note

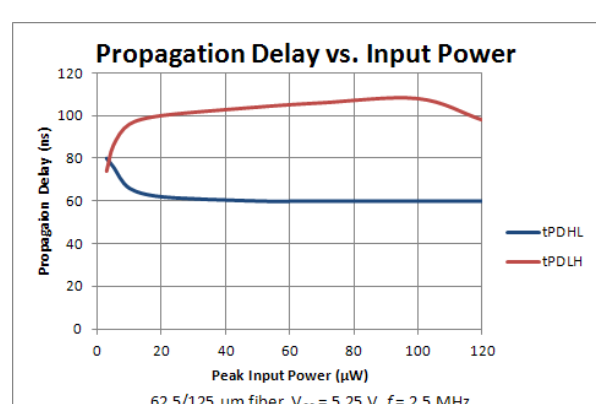
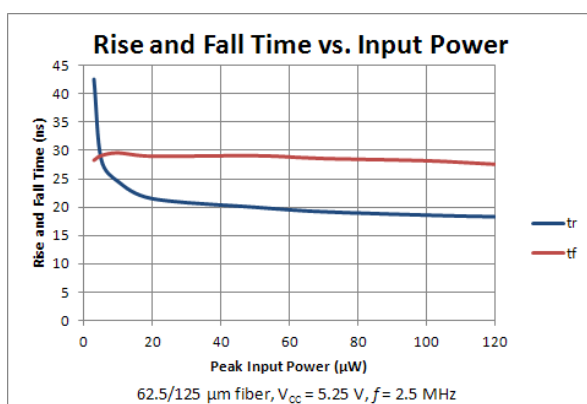
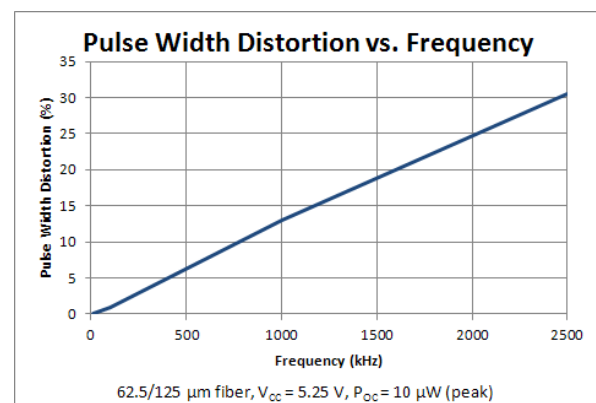
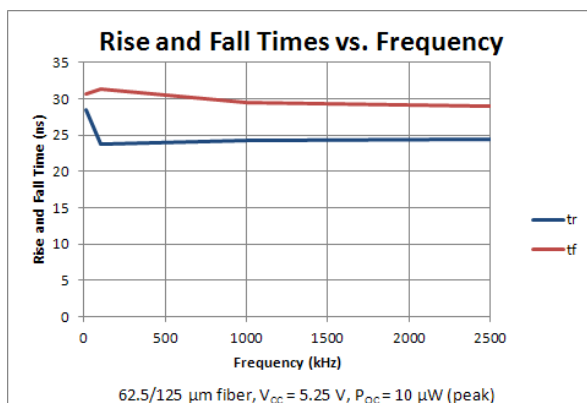
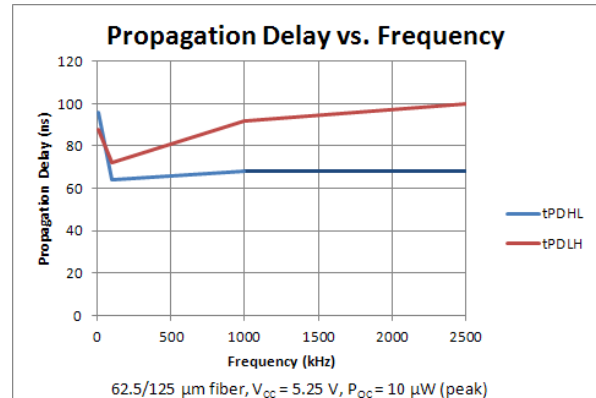
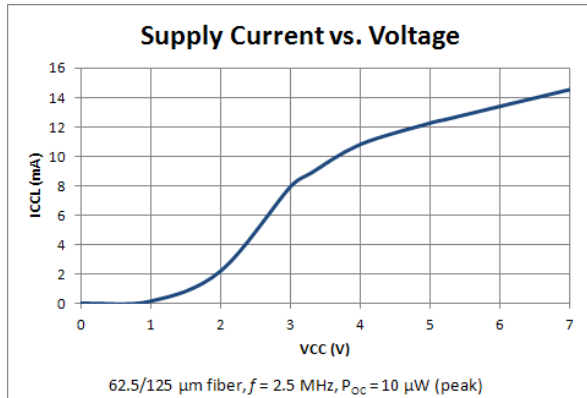
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Typical Performance

Switching Characteristics

(See Recommended Test Circuit)

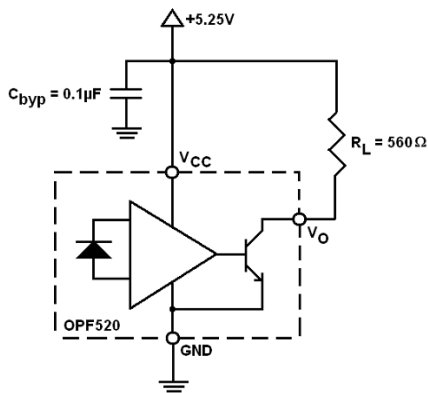
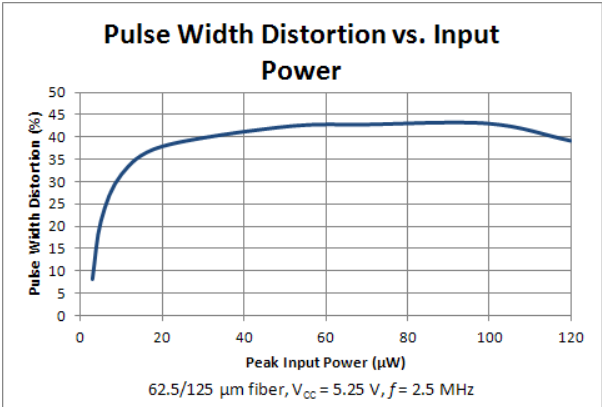
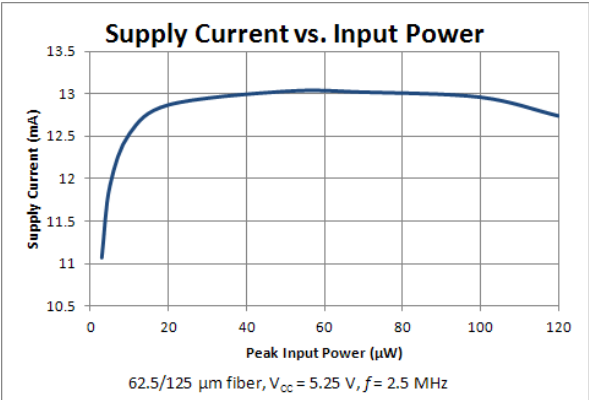


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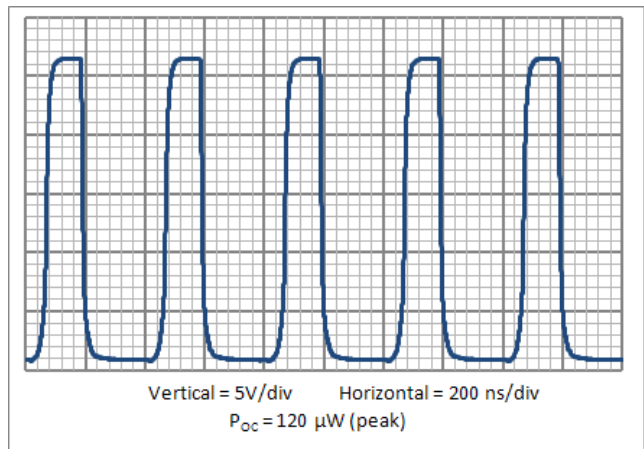
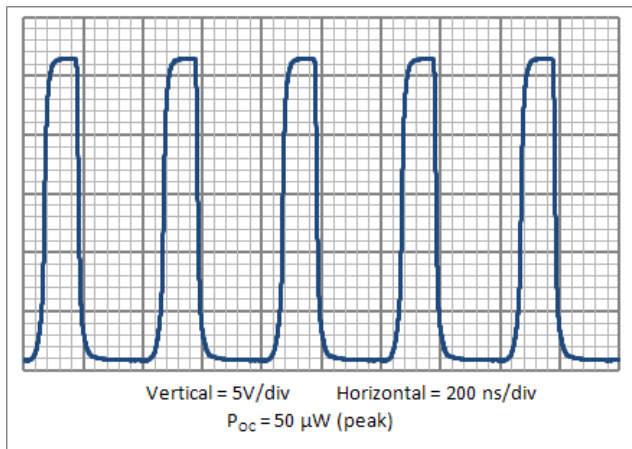
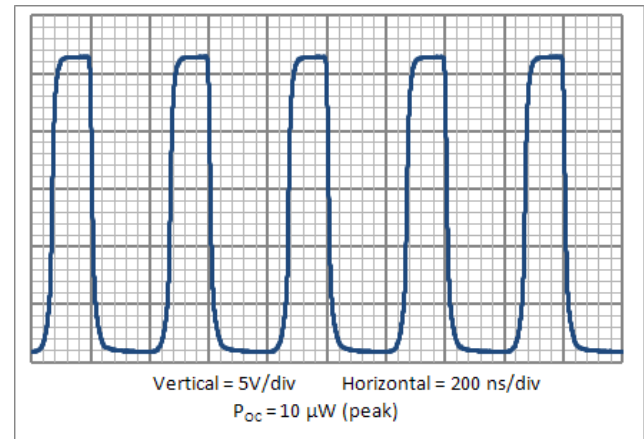
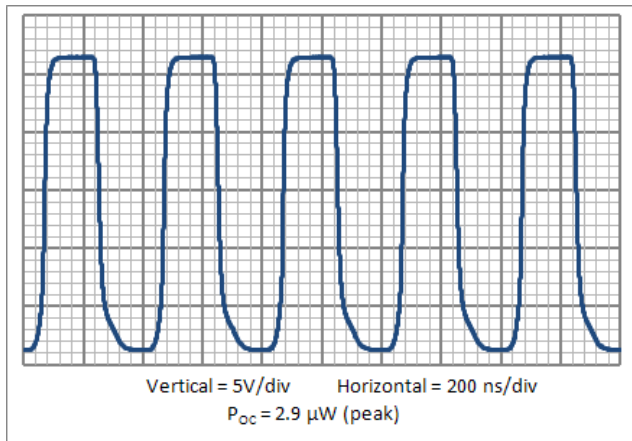
Typical Performance
Switching Characteristics
(See Recommended Test Circuit)



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Typical 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)



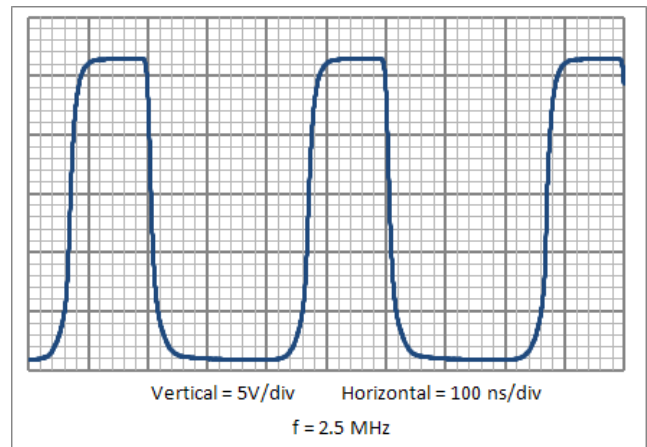
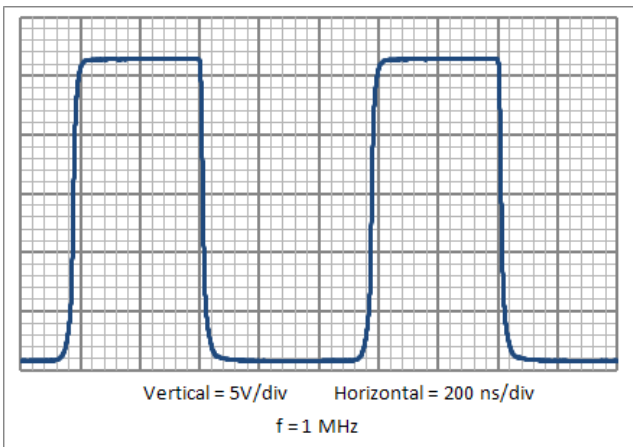
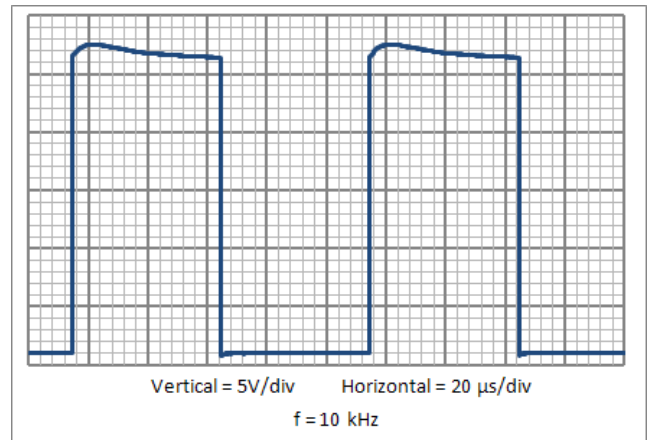
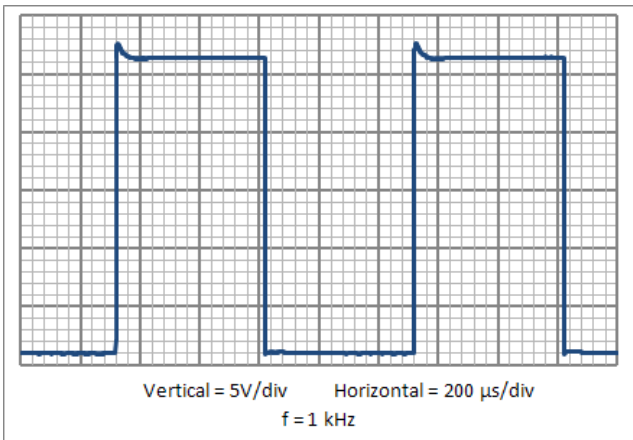
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Typical Performance Various Frequencies

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



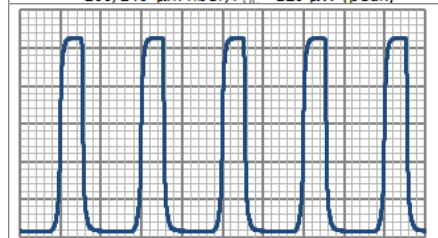
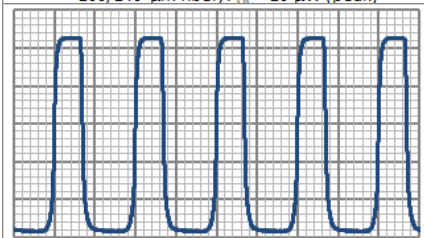
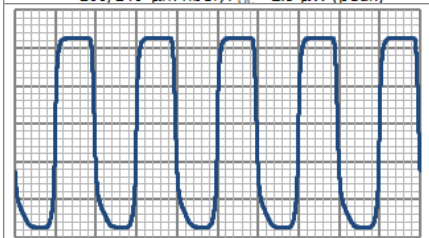
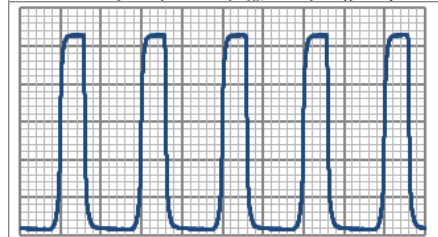
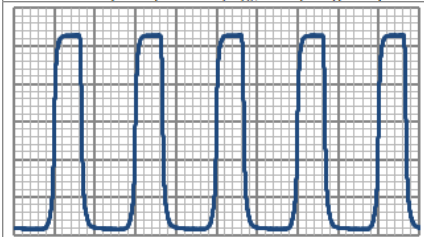
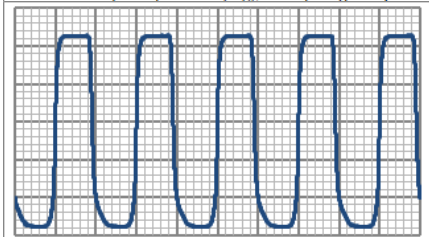
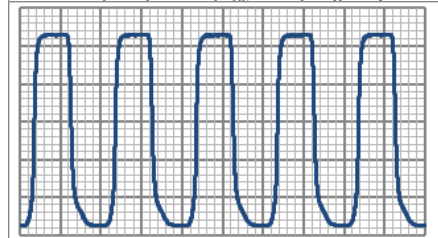
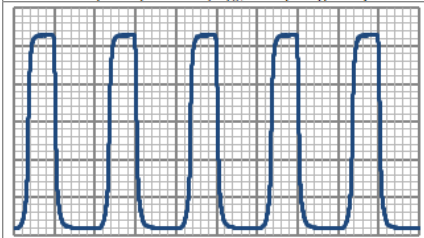
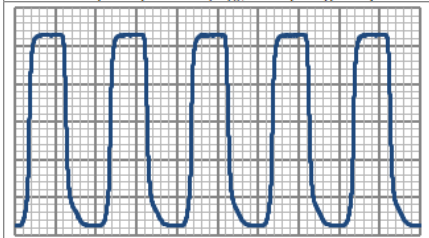
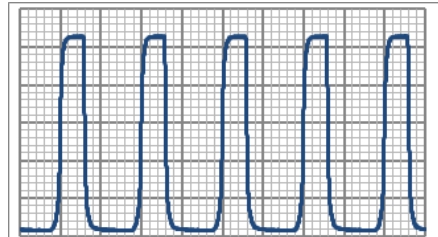
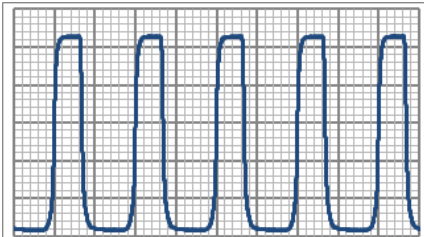
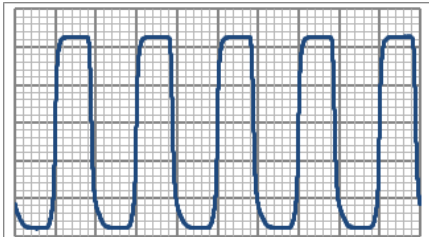
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Typical Performance Typical Waveforms for Various Fiber Cables and Input Powers

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



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