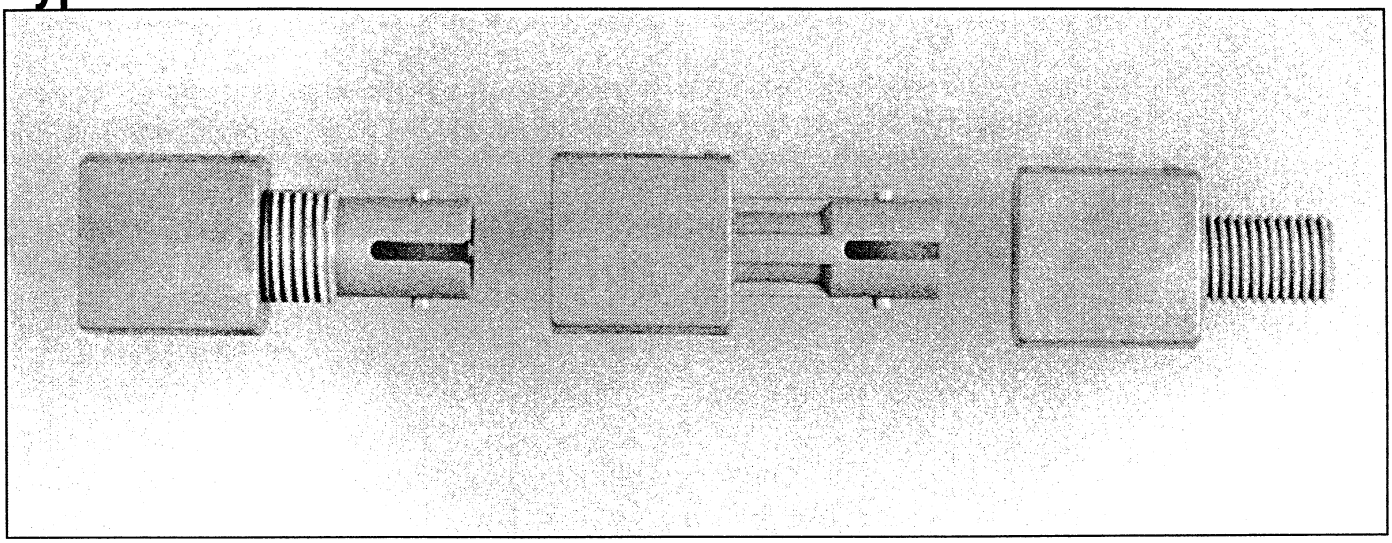
High Speed Fiber Optic Transmitter
Types OPF14X2/14X4 Series



Features

- Low Cost
- High Speed
- No Mounting Hardware Required
- Wide Temperature Range
- 100% LED Burn-In (96 hours)
- SMA or ST* Style Ports
- Wave Solderable

Description

The OPF14XX series fiber optic transmitters contain a high speed 840 nm GaAlAs LED. This LED in conjunction with the package lensing is designed to efficiently couple light into optical fibers ranging in size from 50/125 µm up to 200 µm PCS. These devices were designed to work together with the Optek OPF24XX series receivers to make-up a complete high speed fiber optic link.

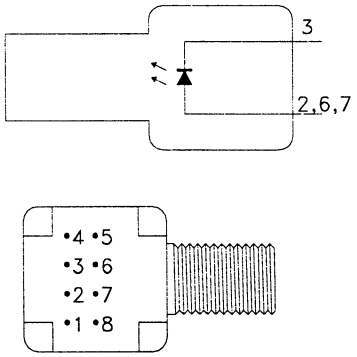
The high coupling efficiency of the LED and lensing allows the devices to be used at low current drive levels thus decreasing the power consumption and increasing system reliability. The consistency of coupling varies by less than 5 dB from part to part which reduces the dynamic range requirements of the receiver.

The high power (-16.5 dBm into 50/125 µm) OPF14X4 was designed for small fiber applications or where there are large fixed losses such as in systems that contain star couplers or in line connectors. The OPF14X2 (-11.5 dBm optical power) is ideal for 100/140 µm fiber applications.

*ST is a registered trademark of AT&T.

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

Storage Temperature	-55° C to +85° C
Operating Temperature	-40° C to +85° C
Lead Soldering Temperature	260° C(10 sec)
Forward Input Current	Peak 200 mA
	DC 100 mA
Reverse Input Voltage	1.8 V



Bottom View

PIN	FUNCTION
1	N.C.
2	Anode
3	Cathode
4	N.C.
5	N.C.
6	Anode
7	Anode
8	N.C.

See Mechanical Dimensions page 8-19 for Mechanical Drawings.
Available in Panel Mount ST package; add "T" suffix to part number.

This component is susceptible to damage from electrostatic discharge (ESD). Normal static precautions should be taken in handling and assembly of this component to prevent ESD damage or degradation.

Types OPF14X2/14X4 Series

Electrical Characteristics (T_A = -40° C to +85° C unless otherwise noted) Typ. values are at 25° C.

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	TEST CONDITION
V_F	Forward Voltage	1.48	1.70	2.09	V	I_F = 60 mA
			1.84			I_F = 100 mA
V_F/T	Forward Voltage Temperature Coefficient		-0.20		mV/° C	I_F = 60 mA
V_{BR}	Reverse Input Voltage	1.8	3.8		V	I_R = 100 µA
λ_P	Peak Emission Wavelength	820	840	865	nm	I_F = 60 mA
C_T	Diode Capacitance		55		pF	V = 0 f = 1 MHz
P_T/T	Optical Power Temperature Coeffiecient		-.008		dB/° C	I = 60 mA
			-.020			I = 100 mA

Peak Output Optical Power

SYMBOL	PARAMETER	1412/1402			1414/1404			UNIT	TEST CONDITION
		MIN	TYP	MAX	MIN	TYP	MAX		
P_{T100}	100/140 µm Fiber Cable N.A. = 0.30	-15.0	-12.0	-10.0	-9.5	-6.5	-4.5	dBm	I_F = 60 mA, T_A = 25° C
		-16.0		-9.0	-10.5		-3.5		
		-13.5	-10.0	-7.6	-8.0	-4.5	-2.1		I_F = 100 mA, T_A = 25° C
		-15.1		-7.0	-9.6		-1.5		
P_{T62}	62.5/125 µm Fiber Cable N.A. = 0.275	-19.0	-16.0	-14.0	-15.0	-12.0	-10.0	dBm	I_F = 60 mA, T_A = 25° C
		-20.0		-13.0	-16.0		-9.0		
		-17.5	-14.0	-11.6	-13.5	-10.0	-7.6		I_F = 100 mA, T_A = 25° C
		-19.1		-11.0	-15.1		-7.0		
P_{T50}	50/125 µm Fiber Cable N.A. = 0.20	-21.8	-18.8	-16.8	-18.8	-15.8	-13.8	dBm	I_F = 60 mA, T_A = 25° C
		-22.8		-15.8	-19.8		-12.8		
		-20.3	-16.8	-14.4	-17.3	-13.8	-11.4		I_F = 100 mA, I_F = 25° C
		-21.9		-13.8	-18.9		-10.8		

Dynamic Characteristics

SYMBOL	PARAMETER	1412/1402			1414/1404			UNIT	TEST CONDITION
		MIN	TYP	MAX	MIN	TYP	MAX		
t_r, t_f	Rise Time, Fall Time (10% to 90%)		4.0	6.5		4.0	6.5	ns	I_F = 60 mA, No pre-bias

FIBER OPTIC COMPONENTS