850nm, Fiber Optic LED Transmitter

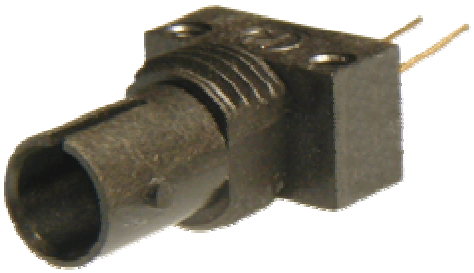
OPTEK TECHNOLOGY, INC.

OPF692-1
OPF692-2

Technical Data

Features

- Low Cost 850 nm LED technology
- High thermal stability
- Up to 155 Mbaud
- Recommended for multimode fiber applications
- High optical coupling to multimode fiber
- Low profile plastic ST* style receptacle
- Industrial temperature range



Description

The OPF692 series fiber optic transmitters are high performance 850nm LED packaged for data communication links. Two power ranges are offered which allows the designer to select a device best suited for the application.

This product's combination of features including high speed and efficient coupled power makes it an ideal transmitter for integration into all types of data communications equipment.

Applications include:

- Industrial Ethernet
- Copper-to-fiber media conversion
- Intra-system links

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

Storage Temperature	-55° C to +100° C
Operating Temperature	-40° C to +85° C
Soldering Lead Temperature(1)	260° C for 10 Seconds
Continuous Forward Current(2)	100 mA
Maximum Reverse Voltage	1.0 V

Typical Coupled Power
I_F = 100mA, 25°C

Fiber Size	Type	N.A.	OPF692-1	OPF692-2
50/125 µm	Graded Index	0.20	-19dBm	-16dBm
62.5/125 µm	Graded Index	0.28	-15dBm	-12dBm
100/140 µm	Graded Index	0.29	-11dBm	-8dBm
200/300 µm	Step Index	0.41	-5dBm	-2dBm

* - ST is a registered trademark of Fitel USA Corp.

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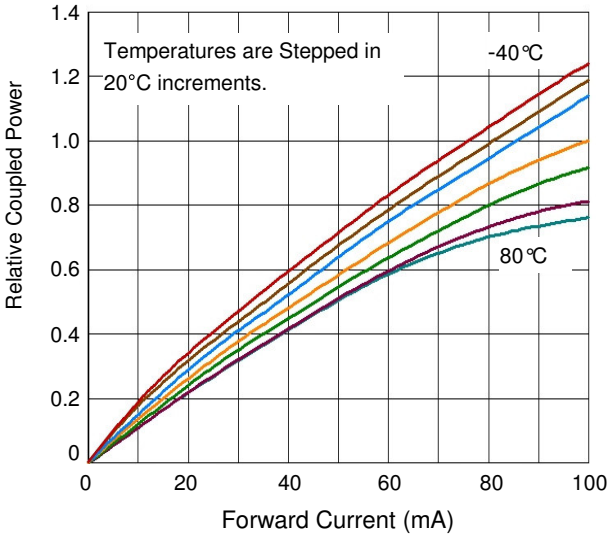
OPF692 Series Technical Data

Electrical/Optical Characteristics (at 25 °C unless otherwise specified)

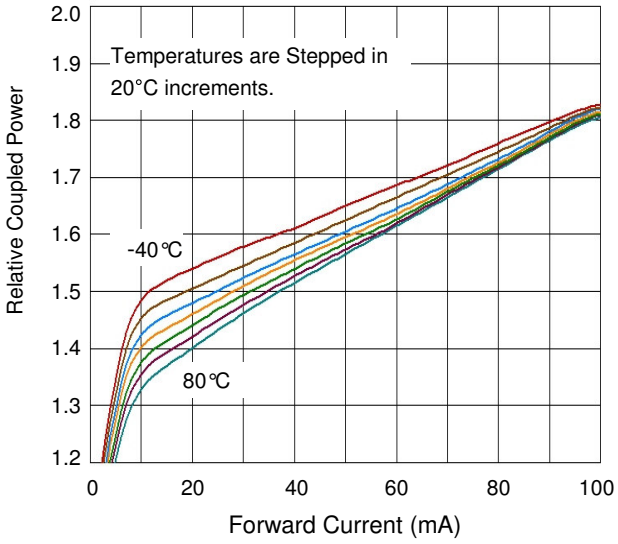
SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
P_{T50}	Total Coupled Power	OPF692-1	-19		-14	dBm	I_F = 100 mA
	50/125 µm Fiber	OPF692-2	-16		-11	dBm	I_F = 100 mA
V_F	Forward Voltage		1.5		2.1	V	I_F = 100 mA
V_R	Reverse Voltage		1.8			V	I_R = 100 µA
λ	Wavelength		830	850	870	nm	I_F = 50 mA
Δλ	Optical Bandwidth			35		nm	I_F = 50 mA
t_r,t_f	Rise and Fall Time			4.5	6.5	ns	I_F = 100 mA; 10% to 90%[3]

NOTES:
1. RMA flux is recommended. Duration can be extended to 10 seconds when flow soldering.
2. De-rate linearly at 1.0mA /°C above 25°C .
3. No Pre-bias.
4. All Optek fiber optic LED products are subjected to 100% burn-in as part of its quality control process. The burn-in conditions are 96 hours at 100mA drive current and 25°C ambient temperature.

Relative Coupled Power vs. Forward Current



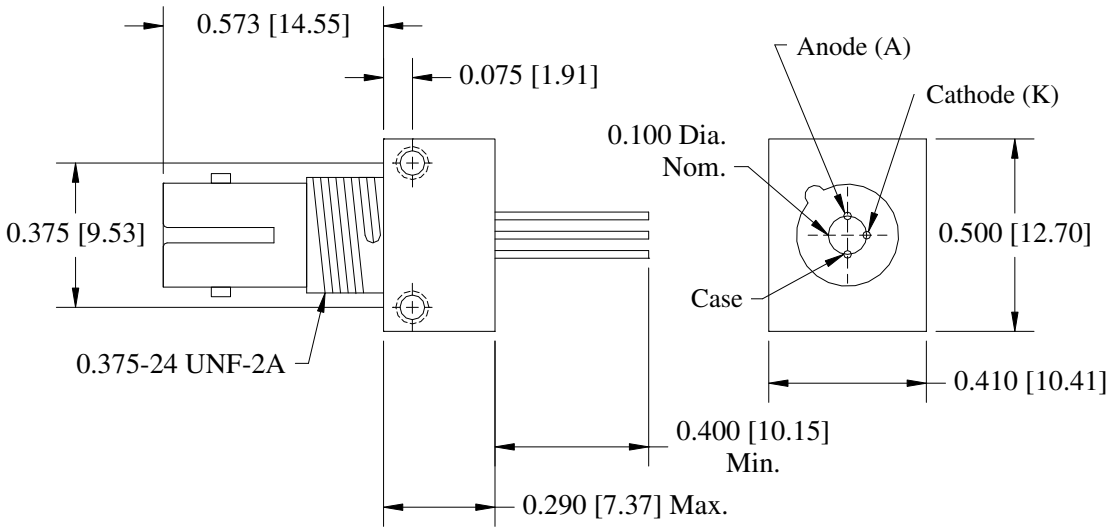
Typical Forward Voltage vs. Forward Current



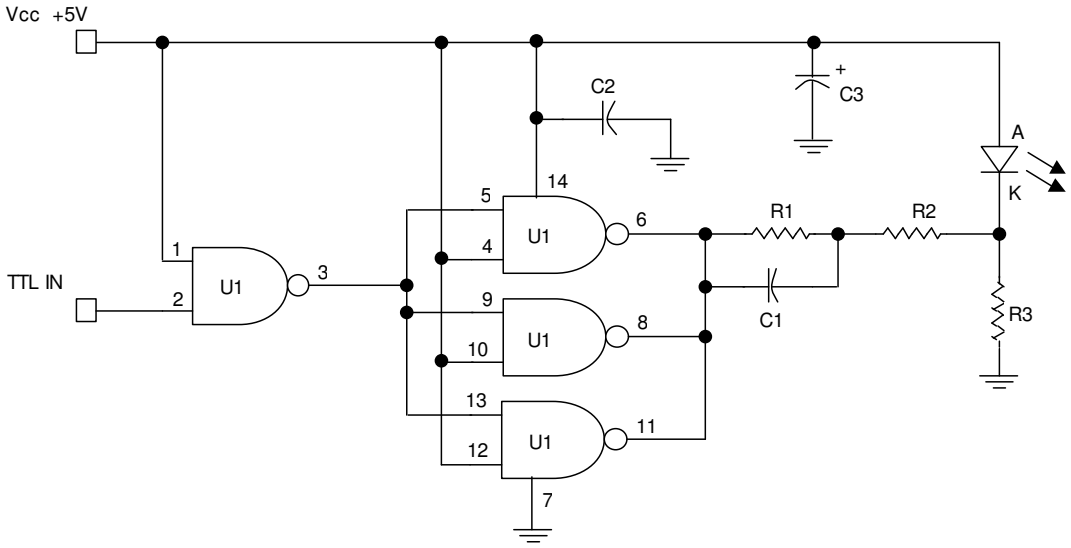
Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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Application Circuit: 155Mbps TTL Drive Circuit



Part	Description	Value/ Type	Symbol	Tol.
C1	Capacitor	75	pF	20%
C2	Capacitor	100	pF	20%
C3	Capacitor	10	µF	20%
R1	Resistor	33	Ω	5%
R2	Resistor	33	Ω	5%
R3	Resistor	270	Ω	5%
U1	IC, Quad NAND	74ACTQ00	-	-

Refer to Application Bulletin 220 for complete details.

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