Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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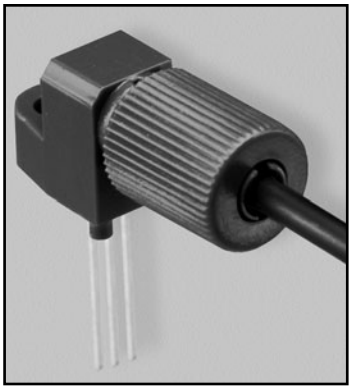


Applications

- Digital Data Links
- PC-to-Peripheral Links
- Process Control
- Digitized Audio
- Motor Controller Triggering
- Intra-System Links: Board-to-Board, Rack-to-Rack
- Medical Instruments
- Automotive Electronics
- Robotics Communications
- EMC/EMI Signal Isolation

Description

The IF-D96 is a medium-speed photologic detector housed in a "connector-less" style plastic fiber optic package. The detector contains an IC with a photodiode, linear amplifier and Schmitt trigger logic circuit. The IF-D96 features an inverted open-collector Schottky transistor (active low). The device can drive up to 5 TTL loads over output (pull-up) voltages ranging from 4.5 to 18 Volts. Optical response extends from 400 to 1100 nm, making it compatible with a wide range of LED and laser diode sources. The detector package features an internal micro-lens and a precision-molded PBT housing to ensure efficient optical coupling with standard 1000 µm core plastic fiber cable.

Application Highlights

The IF-D96 is suitable for digital data links at rates up to 5 Mbps. A Schmitt trigger improves noise immunity and TTL/CMOS logic compatibility greatly simplifies interfacing with existing digital circuits. The integrated design of the IF-D96 provides simple, cost-effective implementation in a variety of digital applications.

Features

- High Optical Sensitivity
- Mates with Standard 1000 µm Core Jacketed Plastic Fiber Optic Cable
- No Optical Design Required
- Inexpensive Plastic Connector Housing
- Internal Micro-Lens for Efficient Optical Coupling
- Connector-Less Fiber Termination
- Light-Tight Housing Provides Interference-Free Transmission
- Open Collector Output

Maximum Ratings

(T_A=25°C)

Operating and Storage Temperature Range (T_{OP}, T_{STG}).....-40° to 85°C

Soldering Temperature (2 mm from case bottom) (T_S) t≤5s .....240°C

Supply Voltage, (V_S).....-.5 to 7 V

Voltage at Output lead .....-.5 to 18 V

Sinking Current, DC (I_C) .....25 mA

Open Collector Power Dissipation (P_{TOT}) T_A=25°C .....40 mW

De-rate Above 25°C .....1.33 mW/°C

Characteristics (T_A=25°C)

Parameter	Symbol	Min	Typ	Max	Unit
Peak Sensitivity	λ_{PEAK}	–	850	–	nm
Spectral Sensitivity (S=10% of S_{MAX})	$\Delta\lambda$	400	–	1100	nm
Operating Voltage	V_{CC}	–	–	5.5	V
High Level Supply Current V_{CC}=5.25 V	I_{CCL}	–	3.5	6.3	mA
Low Level Supply Current V_{CC}=5.25 V	I_{CCL}	–	6.2	10	mA
Light Required to Trigger (V_{CC}=5 V, R_L=1 kΩ λ=660 nm)	Er (+)	– –	3.5 -24.5	–	µW dBm
High Level Output Current V_{OH}= 18 V)	I_{OH}	–	5	250	µA
Low Level Output Voltage (I_{OL}= 8 mA)	V_{OL}	–	0.4	.5	V
Propagation Delay, Low-High (f= 100.0 kHz, R_L= 5 TTL Loads)	t_{PLH}	–	65	–	ns
Propagation Delay, High-Low (f= 100.0 kHz, R= 5 TTL Loads)	t_{PHL}	–	49	–	ns

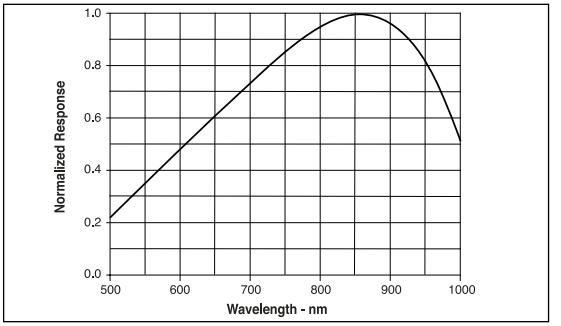


FIGURE 1. Typical detector response versus wavelength.

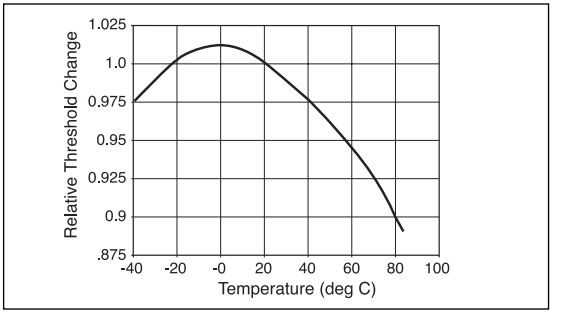


FIGURE 2. Normalized threshold irradiance vs. amb. temp.

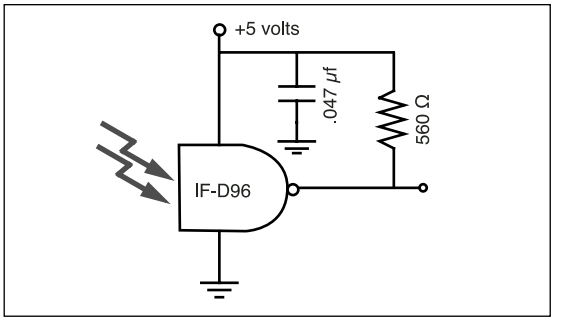
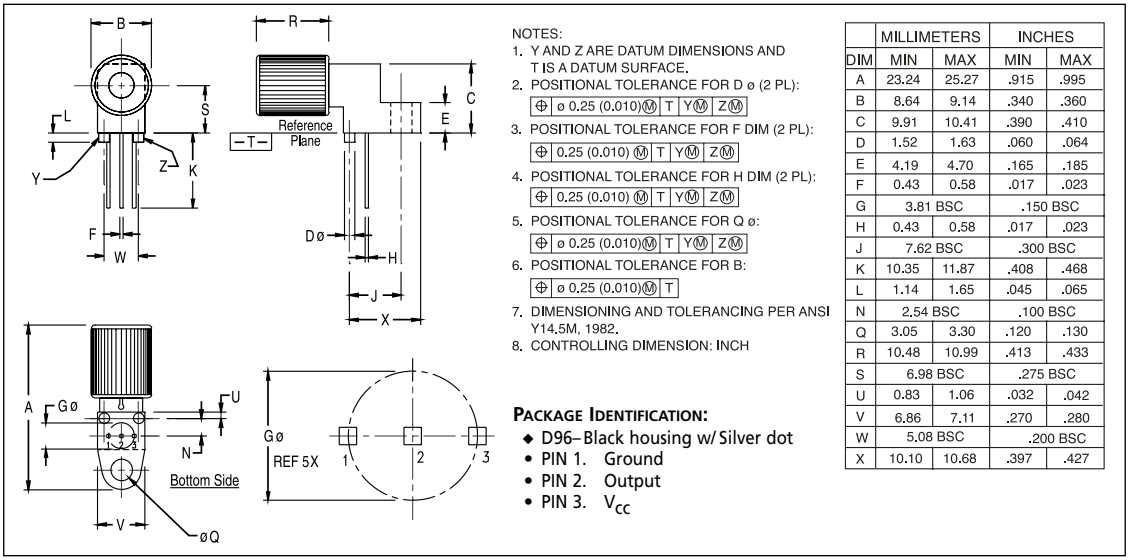


FIGURE 3. Typical operating circuit.

FIBER TERMINATION INSTRUCTIONS

1. Cut off the ends of the optical fiber with a single-edge razor blade or sharp knife. Try to obtain a precise 90-degree angle (square).
2. Insert the fiber through the locking nut and into the connector until the core tip seats against the internal micro-lens.
3. Screw the connector locking nut down to a snug fit, locking the fiber in place.



	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	23.24	25.27	.915	.995
B	8.64	9.14	.340	.360
C	9.91	10.41	.390	.410
D	1.52	1.63	.060	.064
E	4.19	4.70	.165	.185
F	0.43	0.58	.017	.023
G	3.81 BSC		.150 BSC	
H	0.43	0.58	.017	.023
J	7.62 BSC		.300 BSC	
K	10.35	11.87	.408	.468
L	1.14	1.65	.045	.065
N	2.54 BSC		.100 BSC	
Q	3.05	3.30	.120	.130
R	10.48	10.99	.413	.433
S	6.98 BSC		.275 BSC	
U	0.83	1.06	.032	.042
V	6.86	7.11	.270	.280
W	5.08 BSC		.200 BSC	
X	10.10	10.68	.397	.427

FIGURE 4. Case outline.