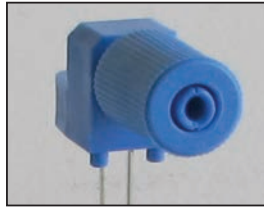


Plastic Fiber Optic IF LEDs

IF E91A



Description

The IF-E91A is a high-output medium-speed infrared LED in a "connector-less" style plastic fiber optic package. The output spectrum peaks at 930 nm for the IF-E91A. The device package features an internal micro-lens, and a precision-molded PBT housing ensures efficient optical coupling with standard 1000 μm plastic fiber cable.

Applications

- Low Cost Analog and Digital Data Links
- Digitized Audio
- Optical Sensors
- Medical Instruments
- Robotics Communications
- Motor Controller Triggering
- EMC/EMI Signal Isolation
- Electronic Games
- Intra-System Links: Board-to-Board, Rack-to-Rack

Maximum Ratings

(T_A = 25°C)

Operating and Storage Temperature Range (TOP, TSTG)-40° to 85°C
Junction Temperature (TJ)85°C
Soldering Temperature (2mm from case bottom) (TS)t ≤ 5 s260°C
Reverse Voltage (VR)5 V
Power Dissipation (PTOT) TA = 25°C80 mW
De-rate Above 25°C1.33 mW/°C
Forward Current, DC (IF)50 mA
Surge Current (IFSM) t ≤ 10 μsec duty cycle < 11.2 A

Characteristics (TA = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Wavelength	λ _{PEAK}	-	930	-	nm
Spectral Bandwidth (FWHM)	Δλ	-	50	-	nm
Output Power Coupled into Plastic Fiber (1 mm core diameter). Distance Lens to Fiber ≤ 0.1 mm, 1m SH4001 fiber, I _F =20 mA	P _O	50 -13	70 -11.6	95 -10.2	μW dBm
Switching Times (10% to 90% and 90% to 10%) (Figure 3)	t _r , t _f	-	0.7	-	μs
Capacitance (F=1 MHz)	C ₀	-	20	-	pF
Forward Voltage (I _F =20 mA) (I _F =50 mA)	V _f	-	1.2 1.27	1.6 1.6	V

CAUTION: The IF E91A is ESD sensitive. To minimize risk of damage observe appropriate precautions during handling and processing.

Plastic Fiber Optic IF LEDs

IF E91A

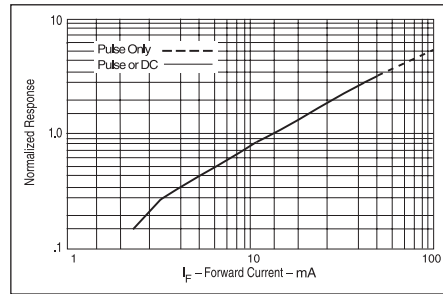


Figure 1.
Normalized power launched versus forward current

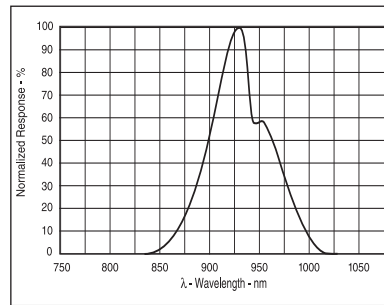


Figure 2.
Typical spectral output versus wavelength.

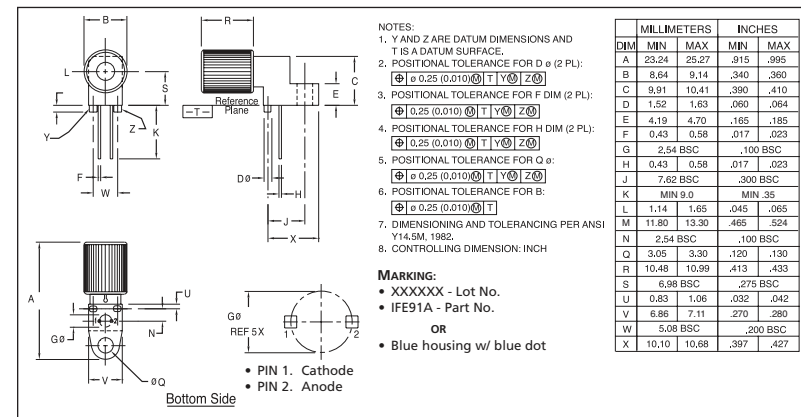


Figure 4. Specifications are believed to be accurate but are subject to change. Industrial Fiber Optics assumes no responsibility for the consequences of using the information provided beyond replacement warranty for products not meeting stated specifications. Industrial Fiber Optics products are not authorized for use in life support applications without written approval from the President of Industrial Fiber Optics Corporation.

Caution:

- To avoid degraded device life due to package stress, do not bend or form leads outside the orientation shown on drawing.
- Ensure that solder flux does not migrate into the device and block the optical path, degrading the performance.
- If washing the device, liquid may become trapped in the part cavity. Ensure that all potentially corrosive materials are flushed out of the device.

12 0055 Rev A

EXPERIMENTER'S KIT

- TECHNICAL DATA -

CONTENTS

Part Number	Description
IF-D92	Fiber Optic Phototransistor
IF-E91A	Fiber Optic Infrared LED
IF-C-E1000	1000 μm core jacketed optical fiber

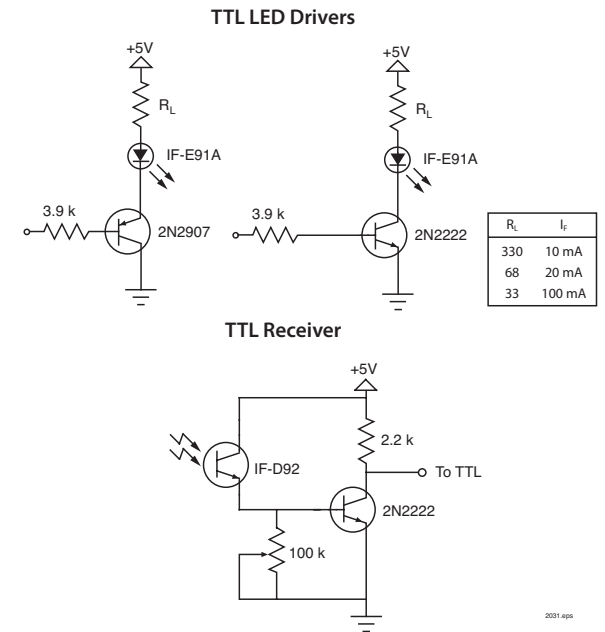
Missing Parts Claims

Industrial Fiber Optics products are warranted against missing parts and defects in material for 90 days. Since soldering and incorrect assembly can damage electrical components, no warranty can be made after assembly has begun. If any parts become damaged, replacements may be obtained from the distributor from whom you purchased this kit.

Introduction

The purpose of this kit is to provide you with an introduction to components, simple circuits and to begin applying basic fiber optic technology. This kit contains the innovative IF-E91A infrared LED and IF-D92 phototransistor, both utilizing integrated connectors which connect to 1000 μm plastic fiber with no additional components needed. Listed below are circuits and applications to try.

Digital Data Transmission



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