

Receivers for use with ESKA™ Products: MIC-D91
Description and Features

The MIC-D91 is a high-speed photodiode detector housed in a connector-less style plastic fiber optic package. Its optical response extends from 400nm to 1100nm, making it compatible with a wide range of visible and near-infrared LED and laser diode sources. These include 650 nm visible-red LEDs used for optimum transmission with PMMA plastic optical fiber. The detector package features an internal micro-lens and a precision-molded PBT housing, ensuring efficient coupling with standard 1000µm core plastic fiber cable.

Fast rise and fall times	Requires no optical design
Mates with standard 1000 µm core jacketed plastic fiber optic cable	Light-tight housing provides interference-free transmission
Uses inexpensive plastic connector housing	Internal micro-lens makes for efficient optical coupling

Fiber termination is connector-less, thus less expensive

Applications
Highlights

Fast response times make this device suitable for high-speed digital data links. Used with an appropriate LED or laser diode source, it is capable of data rates up to 100 Mbps. It can also be used in analog video links with bandwidths of up to 70 MHz. Its integrated design provides a simple, cost-effective implementation in a variety of analog and digital applications.

High-speed digital data links	Automotive electronics
Local Area Networks	Robotics communications
Motor controller triggering	EMC / EMI signal isolation
Video links	Fiber optic modems
Medical instruments	

Characteristics (T_A = 25°C)

Parameters	Symbol	Min.	Typ.	Max.	Unit
Wavelength for Maximum Photosensitivity	λ_{PEAK}	---	880	---	nm
Spectral Bandwidth S=10% of S _{MAX}	$\Delta \lambda$	400	---	1100	nm
Rise and Fall Times (10% to 90% and 90% to 10% R _L =50Ω, V _R =20V and λ=850nm)	t _r , t _f	---	5	---	ns
Total Capacitance (V _R =20V, E _E =0 and f=1.0 MHz)	C _T	---	4	---	pF
Responsivity Minimum @ 880nm	R	---	.4	---	µA/ µW
Responsivity Minimum at @ 632nm			.2		
Reverse Dark Current V _R =30V, E _E =0	I _D	---	---	60	nA
Reverse Breakdown Voltage	V _{(BR)R}	60	---	---	V
Forward Voltage	V _f	---	1.2	---	V

Maximum Ratings (T_A = 25°C)

Temperature Range for Operation and for Storage (T _{OP} , T _{STG})	-40° to 85°C
Junction Temperature (T _J)	85°C
Soldering Temperature (2mm from case bottom) (T _S) t _S ≤5s	240°C
Power Dissipation (P _{TOT}) T _A = 25°C	100mW
De-rate above 25°C	1.33 mW/°C



The information contained herein is presented as a guide to product selection. It is subject to change without notice, and should not be regarded as a representation, warranty or guarantee with regard to the quality, characteristics or use of this product

Please visit www.fiberopticpof.com to locate a sales representative near you

Transmitters for use with ESKA™ Products: **MIC-D91**

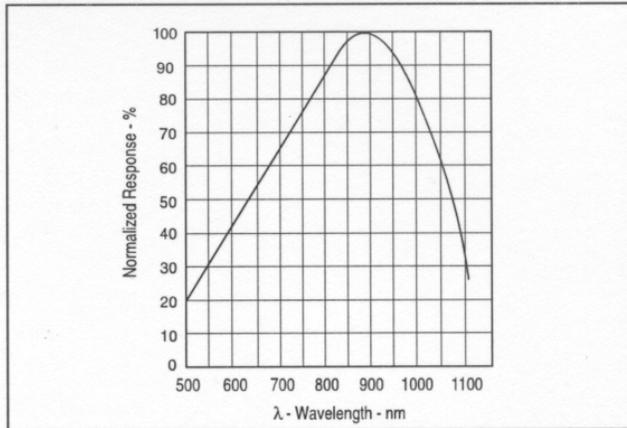


FIGURE 1. Typical detector response versus wavelength.

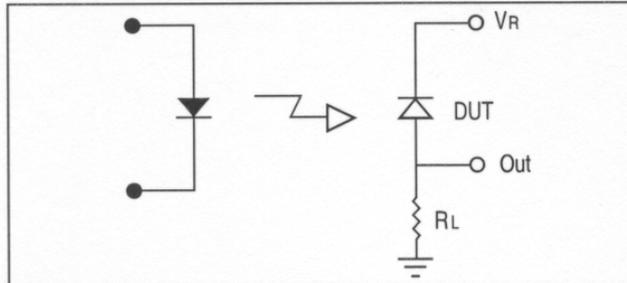


FIGURE 2. Circuit diagram for measuring rise and fall times.

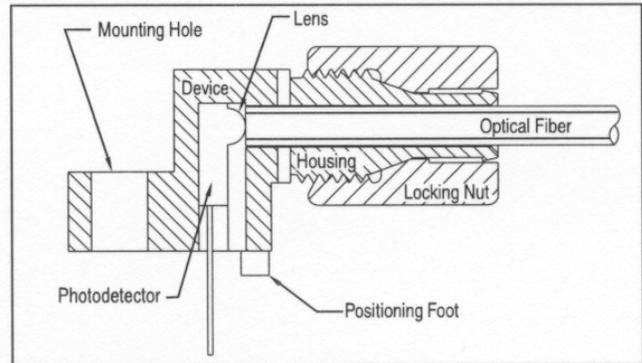


FIGURE 3. Cross-section of fiber optic device.

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.

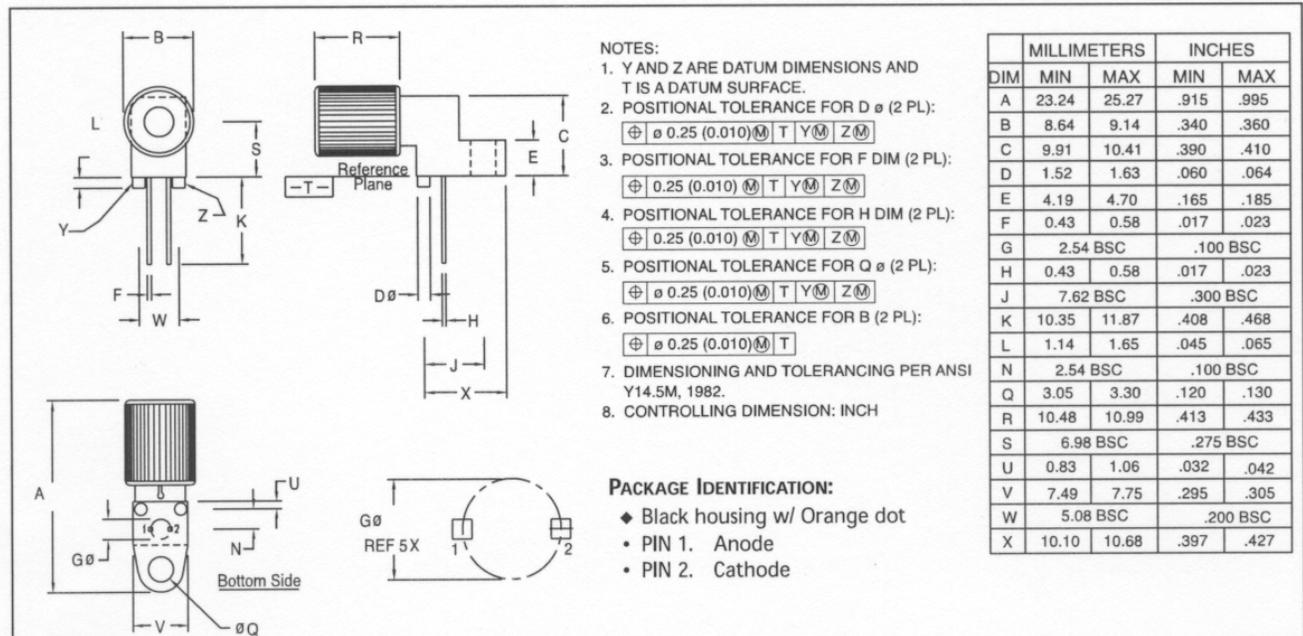


FIGURE 4. Case outline.