

Receivers for use with ESKA™ Products: MIC-D97

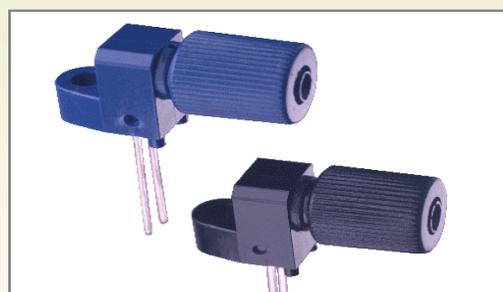
Description and Features	
The MIC-D97 is a high-speed photologic detector housed in a connector-less style plastic fiber optic package. It contains an IC with a photodiode, linear amplifier and Schmitt trigger featuring an ACT logic compatible totem pole output. Optical response extends from 400 to 1050 nm, making it compatible with a wide range of visible, IR LED and laser diode sources. The detector package features an internal micro-lens and a precision-molded PBT housing, ensuring efficient coupling with standard 1000µm core plastic fiber cable.	
Totally integrated solution	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
Connector-less fiber termination and connection	Totem-pole output
Low-current stand-by models may be special-ordered	

Applications	
Highlights	
This product's fast transition times make it suitable for medium-speed digital data links. Link distances in excess of 75 meters at data rates of 50 Mbps are possible using standard 1000 µm core plastic fiber and an MIC-L98 LED. The MIC-D97's integrated design makes it a simple, cost-effective solution in a variety of digital applications.	
PC-to-Peripheral links	Automotive electronics
Process control	Robotics communication
Motor controller triggering	Local Area Networks
Reduction of lightning and voltage-transient susceptibility	Electronic games
	Medical instruments
Digitized video	

Characteristics (T _A = 25°C)					
Parameters	Symbol	Min.	Typ.	Max.	Unit
Peak Sensitivity	λ_{PEAK}	--	800	--	nm
Spectral Sensitivity S=10% of S _{MAX}	$\Delta \lambda$	400	--	1050	nm
Operating Voltage	V _{CC}	4.75	5	5.25	V
Light Required to Trigger ¹ V _{CC} =5V, λ =660nm	E _r (+)	17 -17	--	--	µW dBm
High Level Output Voltage I _{OH} =-2.0µA	V _{OH}	2	--	--	V
Low Level Output Voltage I _{OL} =.6 mA	V _{OL}	--	--	1	V
Output Rise and Fall Times F=10.0 kHz, R _L = 10 TTL loads	t _r , t _f	--	--	7	ns
Propagation Delay	t _p	--	12	--	ns
Supply Current	I _{CC}	--	--	40	mA

¹ Output is the "L" level (inverted logic) when light is input

Maximum Ratings (T _A = 25°C)	
Temperature Range for Operation (T _{OP})	-10° to 70°C
Temperature Range Storage (T _{STG})	-40° to 85°C
Soldering Temperature (2mm from case bottom) (T _S) t _S ≤5s	240°C
Supply Voltage (V _S)	.5 -- 7 V
Power Dissipation (P _{TOT}) T _A =25°C	100 mW
De-rate above 25°C	1.7 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

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Transmitters for use with ESKA™ Products: **MIC-D97**

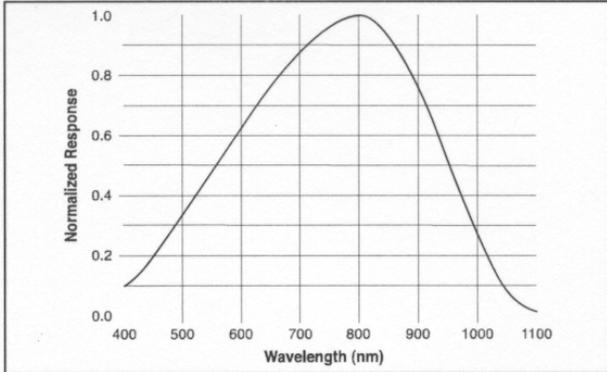


FIGURE 1. Typical detector response versus wavelength.

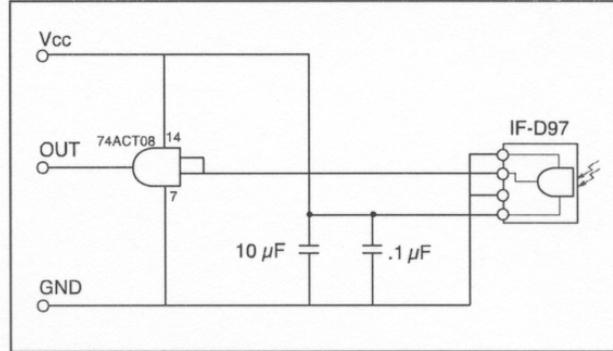


FIGURE 3. Typical interface circuit.



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

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.

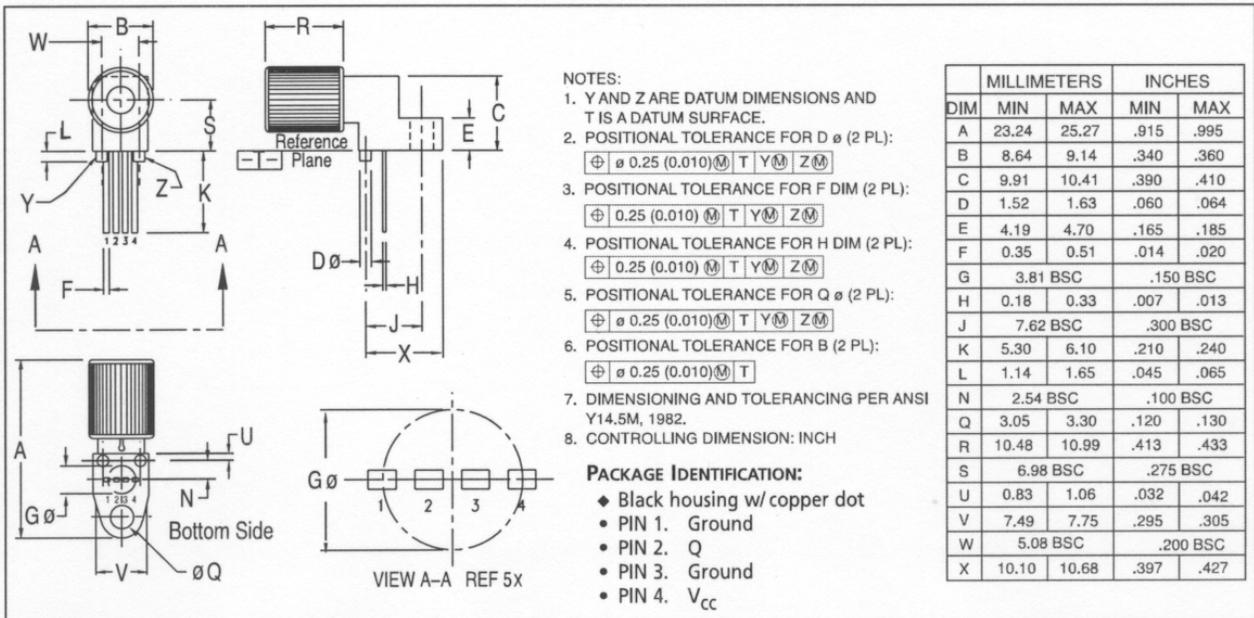


FIGURE 4. Case outline.

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