

Receivers for use with ESKA™ Products: MIC-D96

Description and Features	
The MIC-D96 is a medium-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 logic circuit. This device features an inverted open-collector Shcottky transistor (active low), and 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, ensuring efficient coupling with standard 1000µm core plastic fiber cable.	
High optical sensitivity	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	Open collector output

Applications	
Highlights	
This product is suitable for digital data links at rates up to 5 Mbps. A Schmitt trigger improves noise immunity, and TTL/CMOS logic compatability greatly simplifies interfacing with existing digital circuits. The MIC-D96's integrated design makes it a simple, cost-effective solution in a variety of analog and digital applications.	
Digital data links	Automotive electronics
Process control	Robotics communication
Motor controller triggering	EMC / EMI signal isolation
Intra-system links: Board-to-board, rack-to-rack	Electronic games
	Medical instruments
PC-to-Peripheral links	

Characteristics (T _A = 25°C)						
Parameters	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} =5.25V	I _{CCL}	--	3.5	6.3	mA	
Low Level Supply Current V _{CC} =5.25V	I _{CCL}	--	6.2	10	mA	
Light Required to Trigger V _{CC} =5V, R _L =1 kΩ, λ=660nm	E _r (+)	--	3.5 -24.5	--	µW dBm	
High Level Output Current V _{OH} =18V	I _{OH}	--	5	250	µA	
Low Level Output Current I _{OL} =8 mA	V _{OL}	--	0.4	.5	V	
Propagation Delay F=100.0 kHz, R=5 TTL loads	Low-High	t _{PHL}	--	65	--	ns
	High-Low		--	49	--	ns

Maximum Ratings (T_A = 25°C)

Temperature Range for Operation and for Storage (T _{OP} , 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
Voltage at Output Lead	.5 -- 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



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-D96**

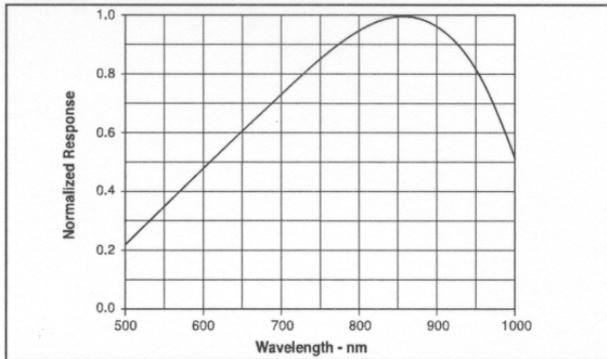


FIGURE 1. Typical detector response versus wavelength.

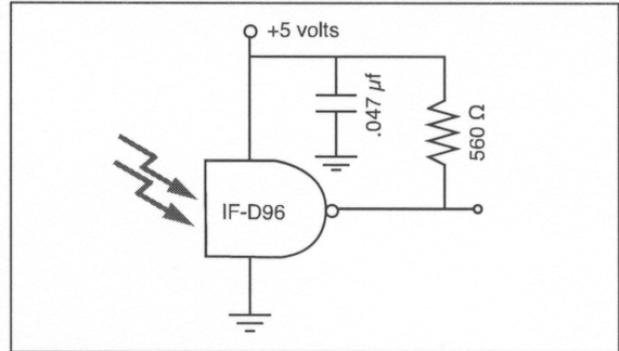


FIGURE 3. Typical operating circuit.

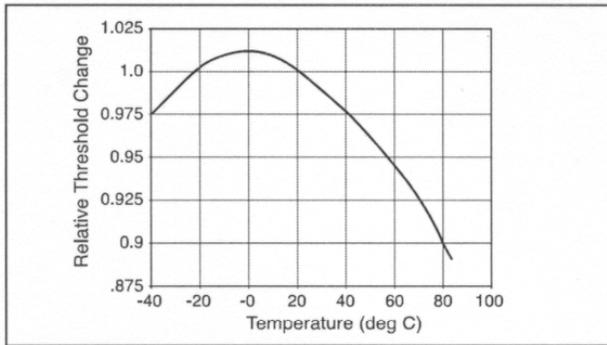


FIGURE 2. Normalized threshold irradiance vs. amb. temp.

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.

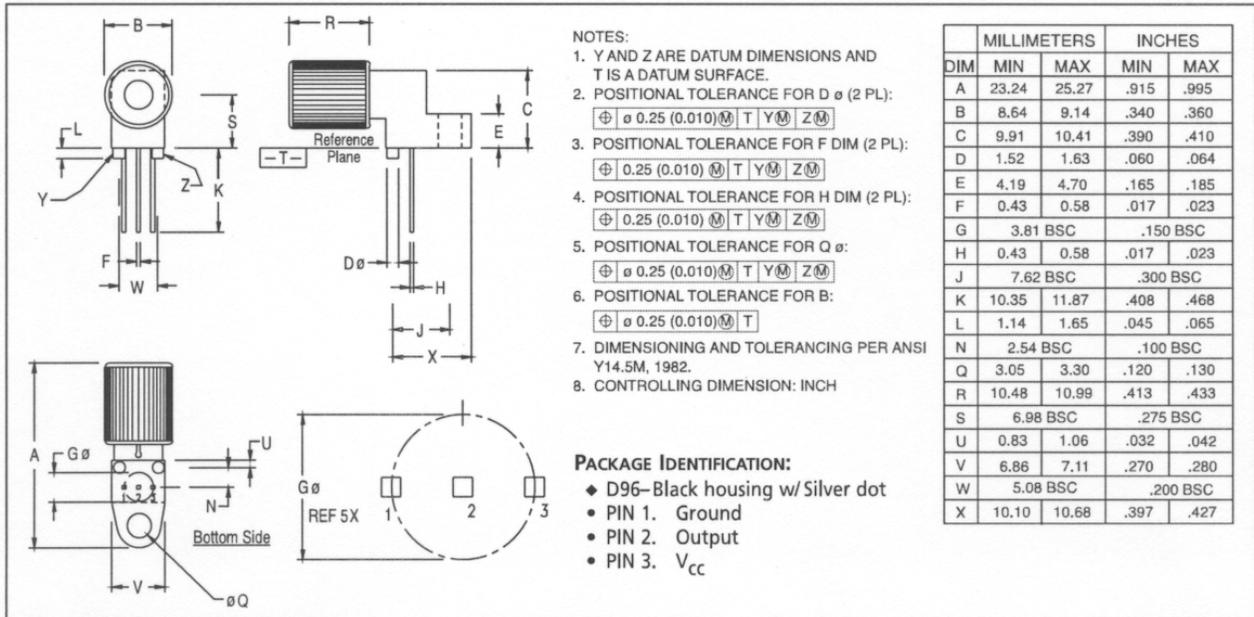


FIGURE 4. Case outline.

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