

Transmitters for use with ESKA™ Products: MIC-L98
Description and Features

The MIC-L98 is a high-speed red LED housed in a connector-less style plastic fiber optic package. The output spectrum of the MIC-L98 is produced by a GaAlAs die which peaks at a wavelength of 650 nm, one of the optimum transmission windows of PMMA plastic core optical fiber. The device package features an internal micro-lens and a precision-molded PBT housing, ensuring efficient optical coupling with standard 1000 µm core plastic fiber cable.

Requires no optical design	Visible light output
Mates with standard 1000 µm core jacketed plastic fiber optic cable	Interference-free transmission from light-tight housing
Uses inexpensive plastic connector housing	Internal micro-lens makes for efficient optical coupling
Connector-less fiber termination and connection	Excellent linearity

Applications
Highlights

The fast transmission times of the MIC-L98 make it suitable for medium-speed analog and digital data links. When used with an MIC-L97 photologic detector and standard 1000 µm core plastic fiber, the MIC-L98 can achieve data rates up to 50 Mbps at link distances in excess of 75 m. The drive circuit design is simpler than that required for laser diodes, making this product a good low-cost alternative in a variety of analog and digital applications.

PC-to-peripheral data links	Medical instruments
Digitized video	Motor controller triggering
Automotive electronics	Robotics communications
Isolation from lightning and voltage transients	Electronic games
Local Area Networks (LANs)	

Characteristics (T_A = 25°C)

Parameters	Symbol	Min.	Typ.	Max.	Unit
Peak Wavelength	λ_{PEAK}	640	650	660	nm
Spectral Bandwidth 50% of I _{MAX}	$\Delta \lambda$	--	20	--	nm
Output Power Coupled into Plastic Fiber (1 mm core diameter) Distance of lens to fiber: ≤ 0.1 mm, 1 m SH4001 fiber, I _F =20 mA	Φ_{min}	275 - 5.6	350 - 4.6	425 - 3.7	µW dBm
Switching Times 10% to 90% and 90% to 10% R _L =47 Ω, I _F =30 mA	t _r , t _f	--	--	8	ns
Forward Voltage I _F =20mA	V _f	--	1.9	2.3	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
Reverse Voltage (V _R)	5V
Power Dissipation (P _{TOT}) T _A =25°C	100mW
Forward Current DC (I _F)	40mA
Surge Current (I _{FSM}) t _S ≤10 µsec	100 mA
De-rate above 25°C	1.75 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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Receivers for use with ESKA™ Products: **MIC-L98**

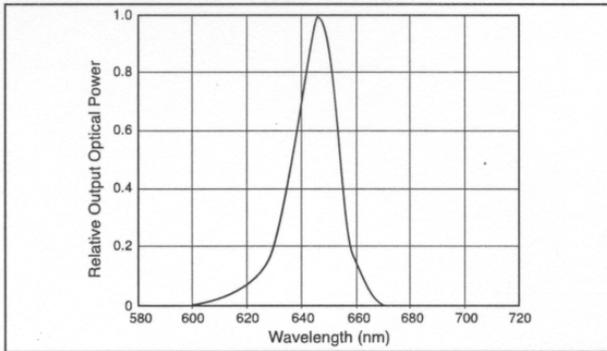


FIGURE 1. Typical spectral output versus wavelength.

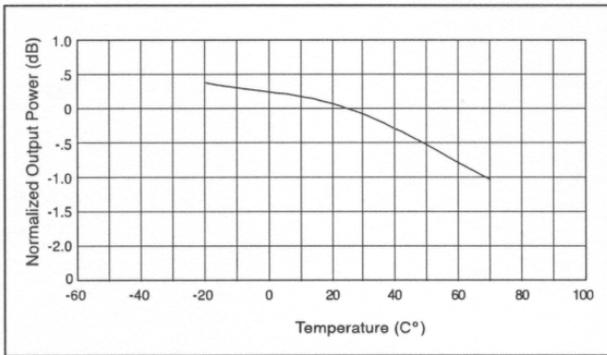


FIGURE 2. Output power versus temperature.

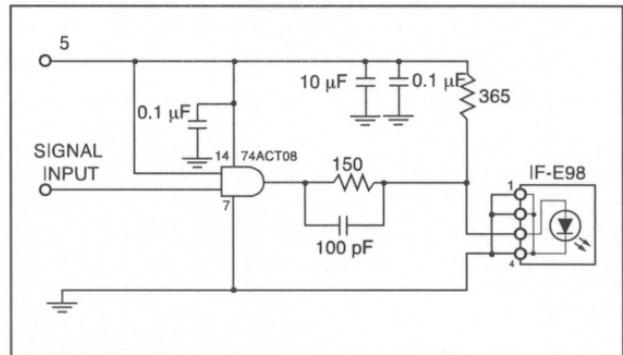


FIGURE 3. Typical interface circuit. (I_F = 30 mA)

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.

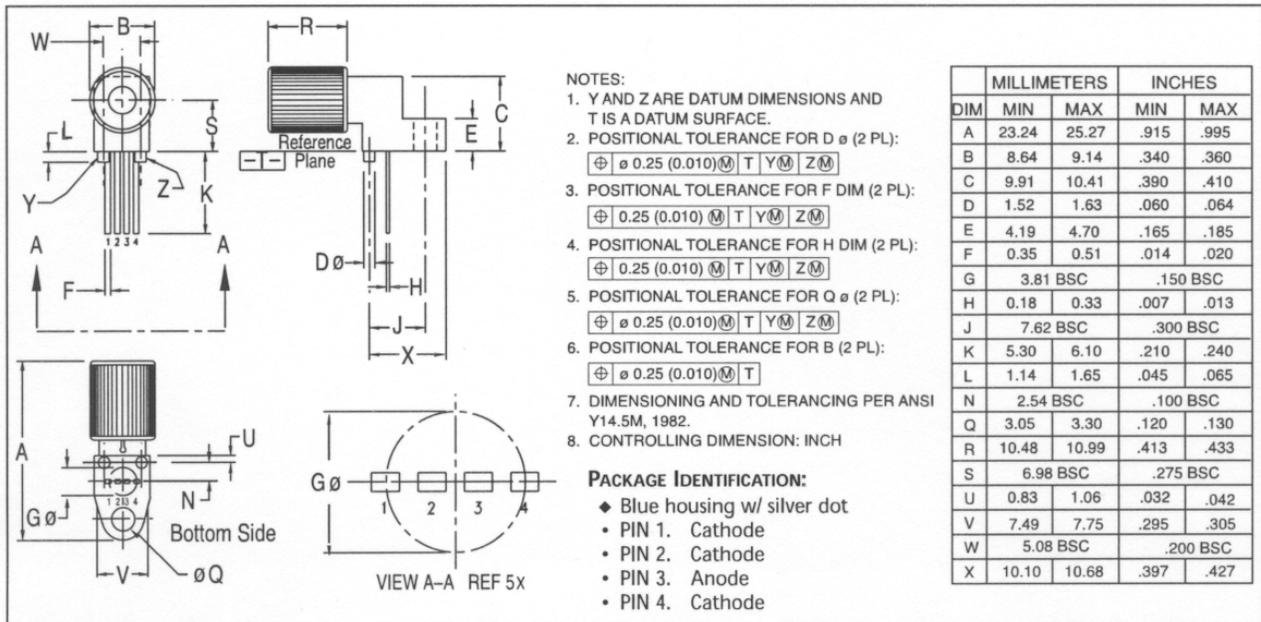


FIGURE 4. Case outline.

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