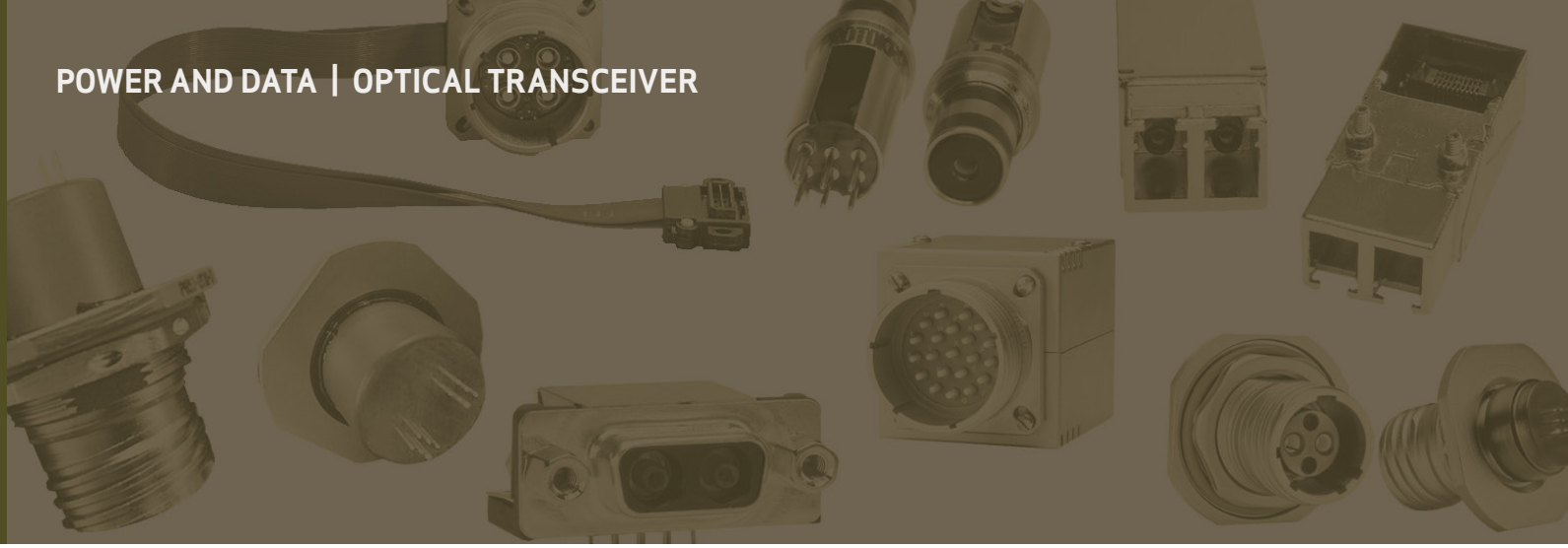

MAGNUM 801 SERIES

SIZE 8 CAVITY OPTICAL TRANSMITTER, PCB MOUNT, 850 NM - ARINC 664, 818, 801, 803 AND 804 COMPLIANT

Magnum 801 series optoelectronic size 8 cavity PCB insert transmitters consist of optoelectronic transmitter functions integrated into a printed circuit board mounted pin contact. The optical transmitters are 850 nm VCSEL lasers. The transmitter input lines are driven with differential CML signals applied to the transmitter (TX+ and TX-) lines. Dual loop, temperature compensated, VCSEL drivers convert the transmitter input signals to suitable VCSEL bias and modulation currents.

The optical mating interface to the Magnum series size 8 cavity insert optical transmitter is a 1.25 mm ceramic fiber optic receptacle per ARINC 801. The Magnum optical transmitter insert has an integrated 50 / 125 µm multimode optical fiber stub enabling it to interface to either 62.5 / 125 µm or 50 / 125 µm optical fiber cable.

The electrical interface to the Magnum 801 series size 8 cavity insert optical transmitter is a six position pin header suitable for through-hole soldering to a flexible or rigid printed circuit.

Magnum series size 8 cavity insert optical transmitters are vibration isolated, environmentally hardened components designed for use in harsh environment applications.

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MAGNUM SERIES, 1.25 MM FERRULE, SIZE 8 CAVITY INSERT, OPTICAL TRANSMITTER, MULTIMODE, 850 NM, ARINC 664, 818, 801, 803 AND 804 COMPLIANT

Front Release Optical Transmitter Insert
ARINC 801 / 1.25 mm Ferrule / PCB Mounted

FEATURES

- Compliant with ARINC 664, 818, 803 and 804
- Suitable for 10 Gigabit Ethernet, 2x / 4x Fibre Channel and sFPDP applications up to 10.3125 Gbps
- Maximum optical channel bit error rate less than $1x10^{-12}$
- Operating temperature range from -40° to +85° C
- Designed to perform when subjected to shock and vibration per RTCA / DO-160E
- Arcap contact insert material meets stringent EMI / RFI / ESD and EMP performance specifications
- Six pin PCB footprint with TX_Fault and TX_Dis functions
- ARINC 801 1.25 mm ceramic ferrule interface
- Compatible with ARINC 600 and MIL-DTL-83527 size 8 (Quadrax) insert cavities

APPLICATIONS

Magnum 801 series printed circuit board mounted optical receivers enable high speed network communications over long distances in harsh environments.

- 10 Gigabit Ethernet switches and peripheral
- sFPDP data links
- Video displays

This size 8Q optoelectronic cavity insert provides a rugged optical interface that is compliant with ARINC 801 1.25 mm ceramic optical ferrules.

The multimode optical fiber interface supports applications where copper cable link distance, bandwidth, weight or bulk make the use of twisted pair, twinax orquadrax copper conductors unacceptable.

US Pat. # 7,690,849

ORDERING INFORMATION

Application	Part Number
Transmitter operation 2.0 to 10.3125 Gbps	P44F-TS1H-LK

MAGNUM SERIES, 1.25 MM FERRULE, SIZE 8 CAVITY INSERT, OPTICAL TRANSMITTER, MULTIMODE, 850 NM, ARINC 664, 818, 801, 803 AND 804 COMPLIANT

ABSOLUTE MAXIMUM RATINGS

Absolute maximum limits mean that no catastrophic damage will occur if the product is subjected to these ratings for short periods, provided each limiting parameter is in isolation and all other parameters have values within the performance specification. It should not be assumed that limiting values of more than one parameter can be applied to the product at the same time.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Storage Temperature	T_S	-55		+100	°C
Supply Voltage	V_{CC}	-0.3		+3.8	V

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Temperature	T_A	-40		+85	°C
Power Supply Voltage	V_{CC}	+3.135		+3.465	V
Power Supply Noise (p-p)	N_P			200	mV

DESIGNED TO PERFORM UNDER THE FOLLOWING CONDITIONS

Requirement	Feature	Condition	Notes
RTCA / D0-160E	ESD	Class II	2200 V
ARINC 801	Mating Durability	500 Cycles	< 0.5 dB Change
FDA / CDRH / IEC-825-1	Eye Safety	Class 1	No Safety Interlocks Required

MATERIALS

Item	Detail	Notes
Insert	Arcap	
Solder Pins	Brass	
Solder Pin Plating	Gold	
Ferrule	Ceramic	
Printed Circuits	Polyimide / FR-4	

OPTICAL TRANSMITTERS T_A = OPERATING TEMPERATURE RANGE, V_{CC} = 3.135 V TO 3.465 V

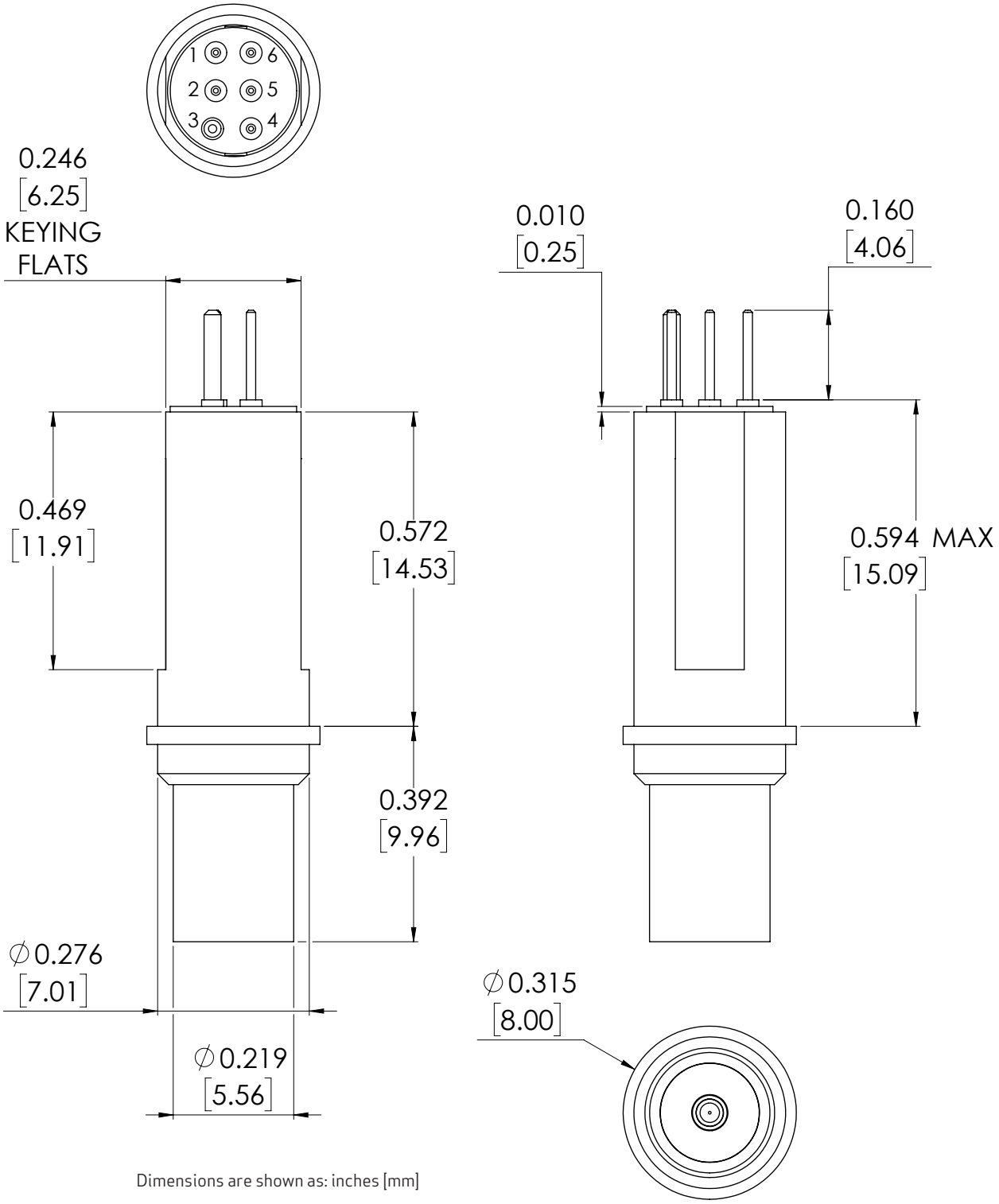
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Optical Output Power (BER < 10^{-12})	P_I	-5.0		-1.0	dBm
Optical Wavelength	λ_{OUT}	840	850	860	nm
Extinction Ratio	ER	3.0	5.5		dB

POWER SUPPLY CURRENT T_A = OPERATING TEMPERATURE RANGE, V_{CC} = 3.135 V TO 3.465 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Supply Current Per Transmitter	I_{CCT}		60	75	mA

MAGNUM SERIES, 1.25 MM FERRULE, SIZE 8 CAVITY INSERT, OPTICAL TRANSMITTER, MULTIMODE, 850 NM, ARINC 664, 818, 801, 803 AND 804 COMPLIANT

OUTLINE DRAWING



Dimensions are shown as: inches [mm]

MAGNUM SERIES, 1.25 MM FERRULE, SIZE 8 CAVITY INSERT, OPTICAL TRANSMITTER, MULTIMODE, 850 NM, ARINC 664, 818, 801, 803 AND 804 COMPLIANT

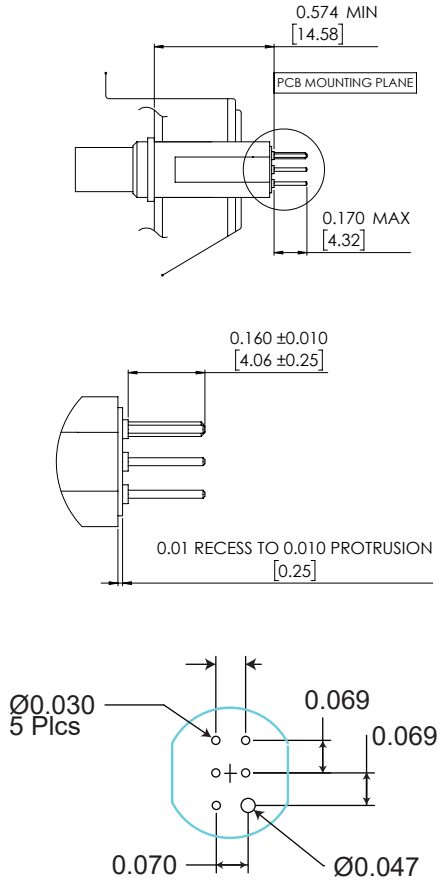
ELECTRICAL PIN ASSIGNMENTS - MAGNUM SIZE 8 CAVITY INSERT

Pin Number	Symbol	Description	Logic Family
1	TX_DIS	Transmit Disable - Input Logic 1: Disable Optical Output Logic 0: Enable Optical Output	CMOS Internal 50 K Ω pull-up
2	V_{CC}	Power Supply - Input	N/A
3	GND	Signal Ground	Open Drain CMOS
4*	TX-Fault	Internal TX Fault Indicator - Output Satisfactory Optical: Logic "0" Output Internal Fault: Logic "1" Output	General Purpose Output - 3.3 V / 5 mA
5	TX-	Transmitter Data - Output	CML
6	TX+	Transmitter Data - Output	CML

*Can not be pulled low for proper operation.

PRINTED CIRCUIT BOARD FOOTPRINT

PCB Hole Pattern
Mounting Side View



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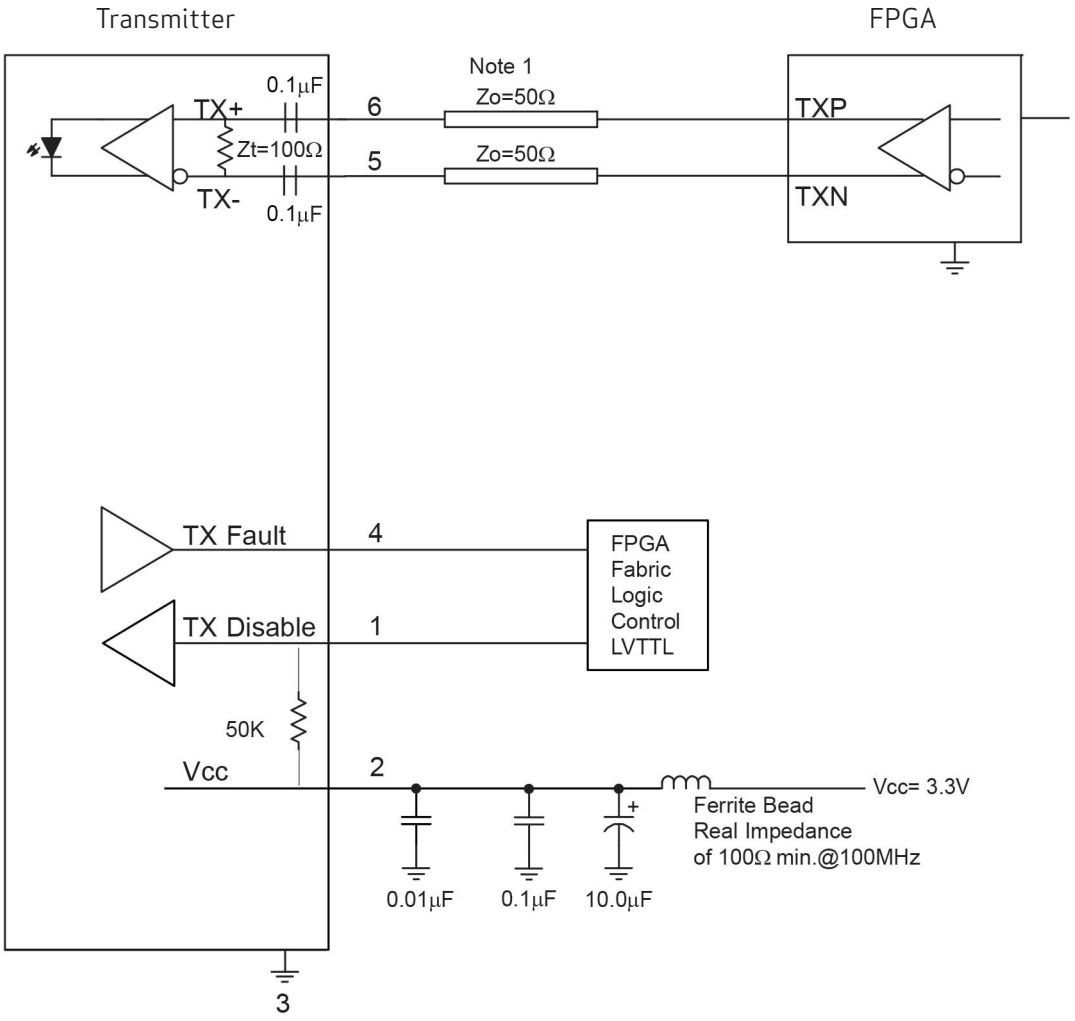
MAGNUM SERIES, 1.25 MM FERRULE, SIZE 8 CAVITY INSERT, OPTICAL TRANSMITTER, MULTIMODE, 850 NM, ARINC 664, 818, 801, 803 AND 804 COMPLIANT

APPLICATION SCHEMATIC - FOR I/O INTERFACES



Typical application schematic shown. For alternate applications or termination techniques, please consult the factory.

Notes:

1. 50 Ohm impedance termination shown. For alternate impedance requirements, please consult the factory.

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