

PART NUMBER*	DESCRIPTION
RX003 - SFF	3 Gbps Small Form Factor Dual Fiber Optic Receiver

DESCRIPTION

RX003 - SFF is a dual channel fiber optic receiver specially developed for aviation and can be used for military high data rate communication applications. This is accomplished using High Reliability Industrial Parts (HRIP). This product complies with the 2x5 standard package defined by the Small Form Factor (SFF) Multi-Source Agreement (MSA). In addition to the common properties offered by existing commercial products, RX003 - SFF provides the following three unique features which are particularly adapted for high performance utilization:

1. Extended operational temperature range from -40°C to +95°C;
2. MIL standard conformal coating for moisture resistance; and
3. Able to withstand shock and vibration testing for harsh environmental usage.

FEATURES

- Dual channel fiber optic receiver operating up to 3.1 GBPS
- GaAs PIN photodetector with transimpedance amplifier integrated in the optical head
- MSA-compliant 2 x 5 pin SFF footprint adaptable to customer's special application
- Receiver Loss-Of-Signal monitor
- Single 3.3 V power supply and low nominal power consumption
- Standard multi-mode LC receptacle and hot pluggable
- All-metal housing for superior EMI performance
- Enhanced enclosure structure for superior shock and vibration performance per RTCA/DO-160E
- MIL-I-46058C, Parylene type C conformal coating for protection against contamination, corrosion, deterioration and physical damage
- Operating temperature range from -40°C to +95°C



BETTER THAN INDUSTRY STANDARDS

1. Extended operational temperature range from -40°C to +95°C;
2. MIL standard conformal coating for moisture resistance; and
3. Withstands shock and vibration testing for harsh environmental usage.

CUSTOMIZABLE OPTIONS

- Higher Data Rates
- Form Factor, Size, and Interface
- Hermetic
- Pigtail Connector
- Screening and Testing

**RECEIVER ELECTRICAL / OPTICAL
 SPECIFICATIONS**

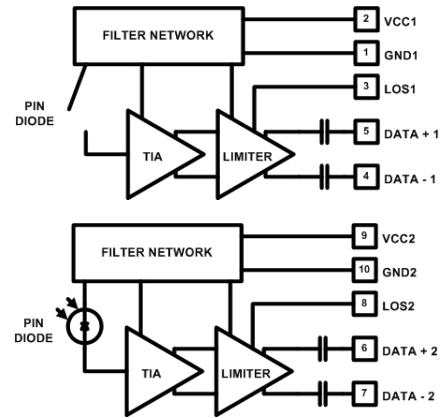
Parameters	Symbol	Min	Typ	Max	Units	Notes
Operating Temperature	T _{op}	-40		+95	°C	
Supply Voltage	V _{cc}	3.0	3.3	3.6	V	
Supply Current (per channel)	I _{cc}		85		mA	
Data Rate	BR	0.05		4.25	GBPS	
Single Ended Data Output Swing	V _{out, PP}		375		mV	1
Signal Detect Assert	LOS		-17.5		dBm	
Signal Detect De-Assert	LOS		-19.5		V	
Bit Error Rate	BER			10 ⁻¹²		2
Receiver Sensitivity	R _{Sens}		-17.5		dBm	2, 4
Total Jitter Contribution	RX ΔDJ		30		ps	3, 5

NOTES

- AC coupled.
- Tested with PRBS 2⁷ - 1 test pattern
- If measured with DJ-free data input signal, 10⁻¹² BER. In actual application, output TJ will be given by:

$$TJ_{out} = DJ_{in} + \Delta DJ + \sqrt{[(TJ_{in} - DJ_{in})^2 + (\Delta TJ - \Delta DJ)^2]}$$
- Specifications are for standard 50 micrometer or 62.5 micrometer fiber multimode fiber
- @ 3.1 Gbps

**FIGURE 1:
 RECEIVER BLOCK DIAGRAM**

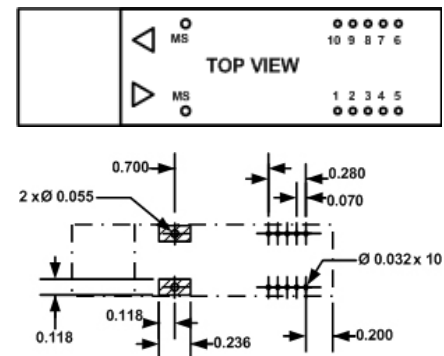


**RECEIVER MECHANICAL
 SPECIFICATIONS**

Pin	Description	Notes
MS	Mounting Studs are for mechanical attachment.	
1	Receiver 1 Ground	
2	Receiver 1 Vcc	
3	Receiver 1 LOS (Loss of Signal monitor)	
4	Receiver 1 DATA NOT output.	(AC coupled)
5	Receiver 1 DATA output.	(AC coupled)
6	Receiver 2 DATA output.	(AC coupled)
7	Receiver 2 DATA NOT output.	(AC coupled)
8	Receiver 2 LOS (Loss of Signal monitor)	
9	Receiver 2 Vcc	
10	Receiver 1 Ground	

**FIGURE 2:
 MECHANICAL CONFIGURATION**

RX - SFF DUAL RECEIVER COMPLIES WITH THE STANDARD DIMENSIONS DEFINED BY THE SMALL FORM FACTOR MULTI-SOURCE AGREEMENT (MSA)



NOTES

- RECOMMENDED CIRCUIT BOARD LAYOUT.
- SHADED AREAS ARE RESERVED FOR MOUNTING STUDS.
- UNITS ARE IN INCHES.

ABSOLUTE MINIMUM AND MAXIMUM RATINGS

Parameters	Symbol	Min	Max	Units
Supply Voltage	V _{cc}	- 0.5	4.0	V
Total Module Power Dissipation	P _{diss}		1.0	W
Relative Humidity	RH	0	90	%
Storage Temperature	T _s	-45	+ 110	°C
Lead Soldering Temperature / Time	T _h		260/10	°C / s