

PRODUCT FEATURES

- Data-rate of 1.25Gbps operation
- 1310nm FP laser and PIN photo detector for 10KM transmission
- Compliant with SFP MSA and SFF-8472 with duplex LC receptacle
- Digital Diagnostic Monitoring:
- Internal Calibration or External Calibration
- Compatible with SONET OC-24-LR-1
- Compatible with RoHS
- +3.3V single power supply
- Operating case temperature:
Standard : 0 to +70°C
Extended : -20 to +85°C
Industrial : -40 to +85°C

APPLICATION

- Gigabit Ethernet
- Fiber Channel . Switch to Switch interface
- Switched backplane applications. Router / Server interfaced

STANDARD

- Compliant with SFP MSA (INF-8074i)
- Compliant with SFF-8472 v9.3
- Compliant with IEEE802.3z Gigabit Ethernet

SPECIFICATION

Digital Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-40 to 85	±3	°C	Internal
Voltage	0 to Vcc	±3%	V	Internal
Tx Bias Current	0 to 100	±10%	mA	Internal
Tx Output Power	-9 to -3	±3	dB	Internal
Rx Input Power	-20 to -3	±3	dB	Internal

Pin Definitions

Pin	Symbol	Name/Description	Ref
1	V _{EE}	Transmitter Ground (Common with Receiver Ground)	1
2	T _{FAULT}	Transmitter Fault	2
3	T _{DIS}	Transmitter Disable. Laser output disabled on high or open.	3
4	MOD_DEFQ2	Module Definition 2, Data line for Serial ID.	4
5	MOD_DEFQ1	Module Definition 1, Clock line for Serial ID.	4
6	MOD_DEFQ0	Module Definition 0, Grounded within the module.	4
7	Rate Select	No connection required.	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	5
9	V _{EE}	Receiver Ground (Common with Transmitter Ground)	1
10	V _{EE}	Receiver Ground (Common with Transmitter Ground)	1
11	V _{EE}	Receiver Ground (Common with Transmitter Ground)	1
12	RD+	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	V _{EE}	Receiver Ground (Common with Transmitter Ground)	1
15	V _{CC}	Receiver Power Supply	
16	V _{CC}	Transmitter Power Supply	
17	V _{EE}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-inverted DATA in. AC Coupled.	
19	TD+	Transmitter Inverted DATA in. AC Coupled.	
20	V _{EE}	Transmitter Ground (Common with Receiver Ground)	1

Optical and Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Ref
Transmitter						
Output Opt. Power (End of Life)	POUT	-9.0		-3.0	dBm	1
Optical Wavelength	λ	1270	1310	1355	nm	
Wavelength Temperature Dependence			0.06	0.125	nm/°C	
Spectral Width (-20dB)	σ			3.5	nm	
Optical Extinction Ratio	ER	10			dB	
Side-mode Suppression ratio	SSRmin	30			dB	
Optical Rise/Fall Time	R _r /F		100	100	ps	
RIN	RIN			-120	dB/Hz	
Transmitter Jitter (peak to peak)				100	ps	
Receiver						
Average Rx Sensitivity @ Gigabit Ethernet	RSEN3			-20	dBm	2
Maximum Input Power	PRMX	-3.0			dBm	
Optical Center Wavelength	λC	1260	1310	1020	nm	
LOS De-Assert	LOSD			-22	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis			1.0		dB	
Receiver Jitter Generation @ 1.25Gbps				150	ps	3

- Notes:
1. Class 1 Laser Safety per FDA/CDRH and IEC-605-1 regulations.
 2. With worst case extinction ratio. Measured with a @PRED=2*1.1 NRZ test pattern, @1.25Gb/s, BER=10⁻¹⁰.
 3. Jitter added by receiver (peak-to-peak). Measured at -18 (dBm) average Rx sensitivity, @PRED=2*1.1 NRZ test pattern.

Pin Diagram



Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Ref
Maximum Supply Voltage	V _{CC}	-0.5		3.3	V	
Storage Temperature	T _{STG}	-40		85	°C	
Relative Humidity (Non-storage)	RH	5		95	%	
Relative Humidity (Storage)	RH	5		95	%	

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Case Operating Temperature	T _{OP}	0		70	°C	(Commercial)
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V	(Industrial)
Transmission Distance	FD			10	km	Class B4F

