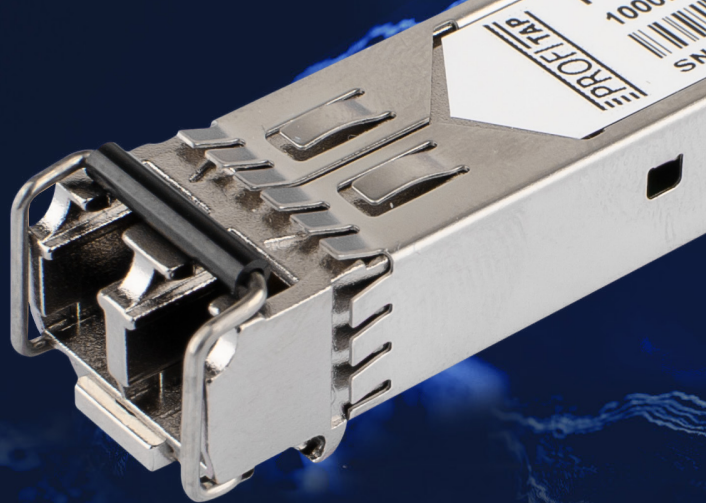


PT-1G-SX-85

DATASHEET



1. PRODUCT FEATURES

- ▶ Up to 1.25 Gb/s bi-directional data links
- ▶ Hot-pluggable SFP footprint
- ▶ SFP MSA (Multi-Source Agreement) Compliance
- ▶ 850nm Vcsel laser transmitter
- ▶ Duplex LC connector
- ▶ Low power dissipation
- ▶ Metal enclosure, for lower EMI
- ▶ Single 3.3V power supply
- ▶ Class 1 Laser Product EN 60825-1 Compliance
- ▶ SFP MSA (Multi-Source Agreement Compliance)
- ▶ IEEE 802.3z

APPLICATIONS

- ▶ 1.0625Gb/s Fibre Channel
- ▶ 1.25Gb/s Gigabit Ethernet

2. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Supply Voltage	VCC	3.15	3.3	3.6	V	
Supply Current	ICC		160	200	mA	

TRANSMITTER

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Input differential impedance	Rin		100		Ω	1
Single ended data input swing	Vin,pp	250		1200	mV	
Transmit Disable Voltage	VD	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	2
Transmit Disable Assert Time				10	us	

RECEIVER

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Single ended data output swing	Vout,pp	250		800	mV	3
Data output rise time	tr		100	175	ps	4
Data output fall time	tf		100	175	ps	4
LOS Fault	VLOS fault	Vcc-0.5		VccHOST	V	5
LOS Normal	VLOS norm	Vee		Vee+0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

NOTE

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Into 100 ohms differential termination.
4. 20 – 80 %
5. Loss Of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value applied through the recommended power supply filtering network.

3. OPTICAL CHARACTERISTICS (TOP = 0 TO 70°C, VCC = 3.15 TO 3.60 VOLTS)

TRANSMITTER

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Output Opt. Pwr (End of Life)	POUT	-9.0		-3.0	dBm	1
Optical Wavelength	λ	820	850	860	nm	
Wavelength Temperature Dependence			0.08	0.125	nm/°C	
Spectral Width (-20dB)	σ			3.0	nm	
Optical Extinction Ratio	ER	8			dB	
Sidemode Supression ratio	SSRmin	30			dB	
Optical Rise/Fall Time	tr/ tf		100	160	ps	
RIN	RIN			-120	dB/Hz	
Transmitter Jitter (peak to peak)				100	ps	

RECEIVER

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Average Rx Sensitivity @ Gigabit Ethernet	RSENS3			-18.0	dBm	2
Maximum Input Power	PMAX	-3.0			dBm	
Optical Center Wavelength	λ_C	770	850	870	nm	
LOS De -Assert	LOSD			-22	dBm	
LOS Assert	LOSA	-25			dBm	
LOS Hysteresis			1.0		dBm	
Receiver Jitter Generation @1.25Gbps				160	ps	3

NOTE

1. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
2. With worst-case extinction ratio. Measured with a PRBS $2^7 - 1$ test pattern, @1.25Gb/s, BER < 10^{-12}
3. Jitter added by receiver (peak to peak). Measured at -18.0dBm average Rx sensitivity, PRBS $2^7 - 1$ test pattern.