

Datasheet SFP module 100-32SM-LR20

100-32SM-LR20 - 1G SFP Optical Module SM LC 1310nm, 20km, DDM

The 100-32SM-LR20 is the high performance and cost-effective module for optical data communication applications specified for multi modes of 1Gb/s. It operates with +3.3V power supply. The module is intended for single-mode fiber, operates at a nominal wavelength of 1310nm and complies with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP). Each module consists of a transmitter optical subassembly, a receiver optical subassembly and an electrical subassembly. All of them are housed in a metal package and the combination produces a reliable component.

The module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications.

Product Features

- ◆ Up to 1.25Gb/s Data Links
- ◆ Hot-pluggable SFP footprint
- ◆ 1310nm Fabry-Perot laser transmitter
- ◆ Duplex LC connector
- ◆ Low power dissipation
- ◆ Metal enclosure, for lower EMI
- ◆ Up to 20km on 9/125 μ m SMF
- ◆ Single 3.3V power supply
- ◆ Operating temperature range: 0°C to 70°C
- ◆ Digital Diagnostic Monitoring Optional

Applications

- ◆ 1.25Gb/s Gigabit Ethernet
- ◆ 1.0625Gb/s Fiber Channel

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Maximum Supply Voltage	Vcc	-0.5		4.7	V	
Storage Temperature	TS	-40		85	°C	
Case Operating Temperature	TOP	0		70	°C	

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Supply Voltage	Vcc	3.15	3.3	3.6	V	
Supply Current	Icc		185	250	mA	
Transmitter						
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	

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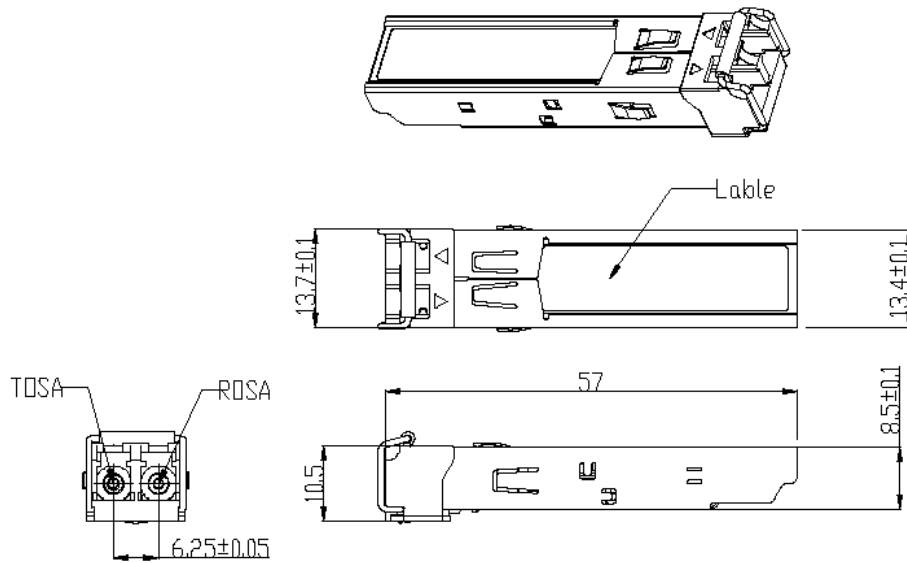
Receiver						
Single ended data output swing	Vout,pp	250		800	mV	3
Data output rise time	tr		100	175	ps	4
Data output fall time	tf		100	175	ps	4
LOS Fault	VLOS fault	Vcc-0.5		VccHOST	V	5
LOS Normal	VLOS norm	Vee		Vee+0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Transmitter						
Output Opt. Pwr (End of Life)	POUT	-9.0		-3.0	dBm	1
Optical Wavelength	λ	1270	1310	1360	nm	
Wavelength Temperature Dependence			0.08	0.125	nm/°C	
Spectral Width (-20dB)	σ			3.0	nm	
Optical Extinction Ratio	ER	10			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						
Average Rx Sensitivity @ Gigabit Ethernet	RSSENS3			-23.0	dBm	2
Maximum Input Power	PMAX	-3.0			dBm	
Optical Center Wavelength	λ_C	1265	1310	1620	nm	
LOS De -Assert	LOSD			-25	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis			1.0		dB	
Receiver Jitter Generation @1.25Gbps				160	ps	3

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Mechanical Specification



Regulatory Compliance

Feature	Reference	Performance
Electrostatic discharge (ESD)	IEC/EN 61000-4-2	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN 55022 Class B (CISPR 22A)	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10, 1040.11 IEC/EN 60825-1, 2	Class 1 laser product
Component Recognition	IEC/EN 60950, UL	Compatible with standards
ROHS	2002/95/EC	Compatible with standards
EMC	EN61000-3	Compatible with standards