



SFP-SM01-20

1.25 Gb/s 20KM SFP Transceiver
Hot Pluggable, Duplex LC. +3.3V, 1310 nm,
FP-LD, Single Mode, DDM.

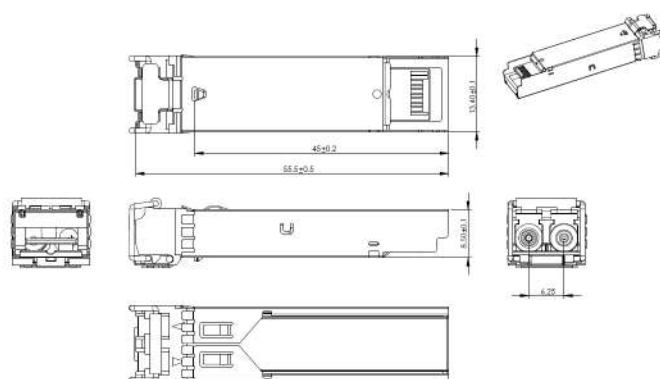
Applications:

- 1.25 Gb/s 1000Base-LX Ethernet
- 1.06 Gb/s Fibre Channel



Features

- SFP package with LC connector
- 1310 nm FP Laser and PIN photo detector
- Up to 20km transmission on SMF
- +3.3 V single power supply
- LVPECL compatible data input/output interface
- Low EMI and excellent ESD protection
- Laser safety standard IEC-60825 compliant
- Compatible with RoHS
- Digital Diagnostic SFF-8472 compliant
- Signal Ground Isolated to Case.



Absolute Maximum Ratings:

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	Vcc	0	+3.6	V
Storage Temperature	Ts	-40	85	°C
Relative Humidity	RH	5	95	%

Operation Enviroment:

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	Vcc	3.15	3.3	3.45	V
Operating Case Temperature	Tc	0		+70	°C
Power Dissipation				1	W
Data Rate			1.25		Gbps

Optical Characteristics:

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter Section					
Center Wavelength	λ_o	1260	1310	1360	nm
Spectral Width (RMS)	$\lambda \Delta$	-	-	4	nm
Average Output Power	Po	-9	-	-3	dBm
Extinction Ratio	Er	8	-		dB
Rise/Fall Time (20%-80%)	Tr/Tf			300	ps
Total Jitter	Tj			0.43	UI
Optical Eye Diagram	IEEE 802.3z and ANSI Fibre Channel Compatible				
Receiver Section					
Center Wavelength	λ_o	1260		1620	nm
Receiver Sensitivity	Rsen			-22	dBm
Receiver Overload	Rov	-3			dBm
Return Loss		12			dB
LOS Assert	LOS _A	-36			dBm
LOS Dessert	LOS _D			-23	dBm
LOS Hysteresis		0.5		5	

Electrical Characteristics:

(Ambient Operating Temperature 0°C to +70°C, Vcc = 3.3V)

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter Section					
Input Differential Impedence	Zin	90	100	110	Ohm
Data Input Swing Differential	Vin	500		2400	mV
TX Disable	Disable	2.0		Vcc	V
	Enable	0		0.8	V
TX Fault	Assert	2.0		Vcc	V
	De-assert	0		0.8	V
Receiver Section					
Output Differential Impedence	Zout		100		Ohm
Data Input Swing Differential	Vout	370		2000	mV
Rx_LOS	Assert	2.0		Vcc	V
	De-assert	0		0.8	V

EEPROM INFORMATION (A0):

Data Address	Size (Bytes)	Name of Field	Value (Hex)	Description of Field
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	MOD4
2	1	Connector	07	LC
3-10	8	Transceiver	00 00 00 02 12 00 0D 01	Transmitter Code
11	1	Encoding	01	8B10B
12	1	BR, Nominal	0D	1250M bps
13	1	Reserved	00	
14	1	Length (9μm, km)	14	20km
15	1	Length (9μm)	64/C8/FF	
16	1	Length (50μm)	00	
17	1	Length (62.5μm)	00	
18	1	Length (Copper)	00	
19	1	Reserved	00	
20 -35	16	Vendor name		
36	1	Reserved	00	
37-39	3	Vendor OUI	000000	
40-55	16	Vendor PN		
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	05 IE	1310nm
62	1	Reserved	00	
63	1	CC_BASE	XX	Check sum of byte 0-62
64-65	2	Options	001A	LOS, TX_DISABLE, TX_FAULT
66	1	BR, max	32	50%
67	1	BR, min	32	50%
68-83	16	Vendor SN	xx xx xx xx xx xx xx xx	Serial number (ASCII)
84-91	8	Date code	xx xx xx xx xx xx xx xx	Vendor's manufacturing date code
92-94	1	Reserved	00	
95	1	CC_EXT	xx	Check sum of byte 64-94
96-255	160	Vendor Specific		

Diagnostics:

Parameter	Range	Accuracy	Unit	Calibration
Temperature	0 - +70	±5	°C	Internal
Voltage	3.15 - 3.45	±0.1	V	Internal
Bias Current	10 - 80	±2	mA	Internal
TX Power	-9 - -3	±2	dBm	Internal
RX Power	-26 - -3	±3	dBm	Internal