



Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 40km on 9/125µm SMF
- 1310nm DFB laser transmitter
- Single +3.3V Power Supply
- Low power dissipation <1W typically
- Industrial operating temperature range: -40°C to 85°C
- RoHS compliant and Lead Free

Applications

- Metro/Access Networks
- 1.25 Gb/s 1000Base-EX Ethernet
- 1×Fibre Channel
- Other Optical Links

1. Absolute Maximum Ratings

Operation in excess of any absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Typ	Max	Unit
Storage Temperature	TS	-40		+85	°C
Power Supply Voltage	VCC	-0.5		4	V
Relative Humidity	RH	0		85	%

2. Recommended Operating Environment

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature	Industrial	TC	-40	85	°C
Supply Voltage	VCC	3.135		3.465	V
Supply Current	Icc			300	mA

Inrush Current	I _{surge}			I _{cc+30}	mA
Maximum Power	P _{max}			1	W

3. Electrical Characteristics

(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Input differential impedance	R _{in}	90	100	110		1
Single ended data input swing	V _{in PP}	250		1200	mVpp	
Transmit Disable Voltage	VD	V _{cc} -1.3		V _{cc}	V	2
Transmit Enable Voltage	VEN	V _{ee}		V _{ee} +0.8	V	
Transmit Disable Assert Time	T _{dassert}			10	us	
Receiver						
Single ended data output swing	V _{out,pp}	250		800	mv	3
LOS Fault	V _{losfault}	V _{cc} -0.5		V _{CC_host}	V	5
LOS Normal	V _{losnorm}	V _{ee}		V _{ee} +0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes:

1. AC coupled.
2. Or open circuit.
3. Into 100 ohm differential termination.
4. 20 – 80 %
5. LOS is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal
6. All transceiver specifications are compliant with a power supply sinusoidal modulation of 20 Hz to 1.5MHz up to specified value applied through the power supply filtering network shown on page 23 of the Small Form-factor Pluggable (SFP) Transceiver Multi-Source Agreement (MSA), September 14, 2000.

4. Optical Parameters

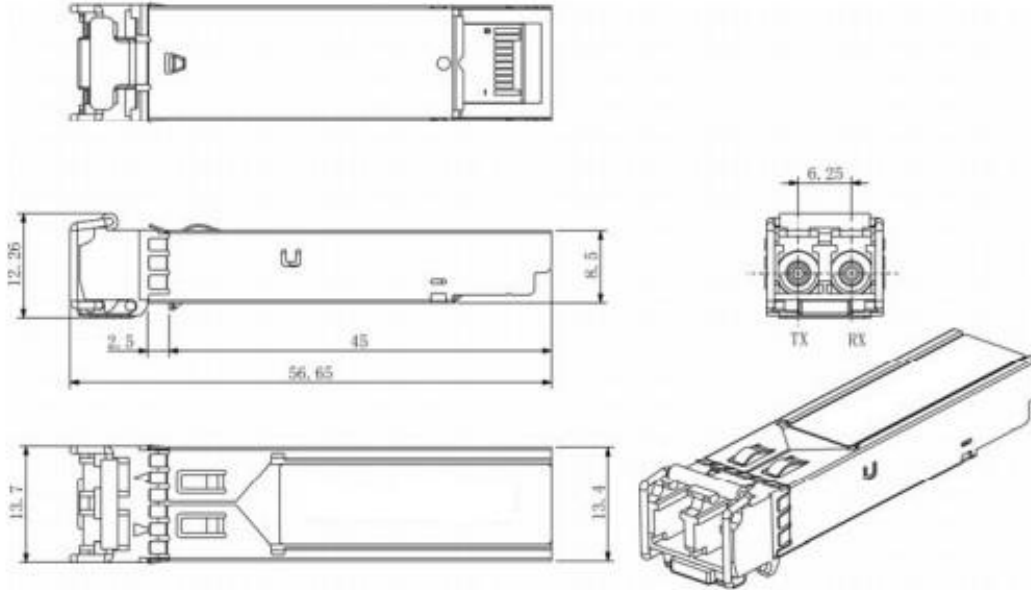
(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Center Wavelength	λ_c	1270	1310	1360	nm	
Spectral Width	σ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Output Power	P _{out}	-2		+3	dBm	1
Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time	tr / tf			260	ps	2
Relative Intensity Noise	RIN			-120	dB/Hz	
Output Eye Mask	Compliant with IEEE802.3 z (class 1 laser safety)					
Receiver						
Optical Input Wavelength	λ_c	1260		1360	nm	
Receiver Overload	P _{ol}	-3			dBm	4
RX Sensitivity	Sen			-24	dBm	4
RX_LOS Assert	LOS A	-40			dBm	
RX_LOS De-assert	LOS D			-25	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	
General						
Data Rate	BR		1.25		Gb/s	
Bit Error Rate	BER			10-12		
Max. Supported Link Length on 9/125 μ m SMF@1.25Gb/s	LMAX		40		km	
Total System Budget	LB	22			dB	

Notes:

1. The optical power is launched into SMF. 20-80%.
2. Jitter measurements taken using Agilent OMNIBERT 718 in accordance with GR-253.
3. Measured with PRBS 27-1 at 10-12 BER

5. Mechanical Diagrams



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
Alcatel	3HE00867AA-A	Brocade	E1MG-EX-OM-40KM-A
Cisco	GLC-EX-SMD-A	Juniper	SFP-GE40KM-A
MSA Generic	AN-SFP-EX-I	MSA OnePort	OP-SFP-EXD
MSA Champion ONE	SFP-EXD-FN	MSA Champion ONE	1000SFP40R2-H

7. Contact Information

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