

## Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 550m on 50/125µm MMF
- 850nm VCSEL laser transmitter
- Single +3.3V Power Supply
- Low power dissipation <1W typically
- Available operating temperature ranges:
  - Industrial: -40°C to 85°C
  - Extended: -5°C to 85°C
  - Commercial: 0°C to 70°C
- RoHS compliant and Lead Free



## Applications

- 1.25 Gb/s 1000Base-SX Ethernet
- Metro/Access Networks
- 1x 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	Units
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	Commercial	0		70	°C
	Industrial	-40		85	°C
	Extended	-10		85	°C

Supply Voltage	VCC	3.135		3.465	V
Supply Current	Icc			300	mA
Inrush Current	I <sub>surge</sub>			I <sub>cc</sub> +30	mA
Maximum Power	P <sub>max</sub>			1	W

### 3. Electrical Characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Note
<b>Transmitter</b>						
Input differential impedance	R <sub>in</sub>	90	100	110		1
Single ended data input swing	V <sub>in PP</sub>	250		800	mVpp	
Transmit Disable Voltage	VD	V <sub>cc</sub> -1.3		V <sub>cc</sub>	V	2
Transmit Enable Voltage	VEN	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V	
Transmit Disable Assert Time	T <sub>dessert</sub>			10	us	
<b>Receiver</b>						
Single ended data output swing	V <sub>out,pp</sub>	250		800	mv	3
LOS Fault	V <sub>losfault</sub>	V <sub>cc</sub> -0.5		V <sub>CC_host</sub>	V	5
LOS Normal	V <sub>los-norm</sub>	V <sub>ee</sub>		V <sub>ee</sub> +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 detected.
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

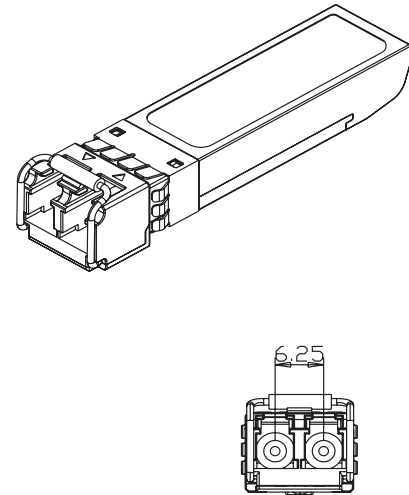
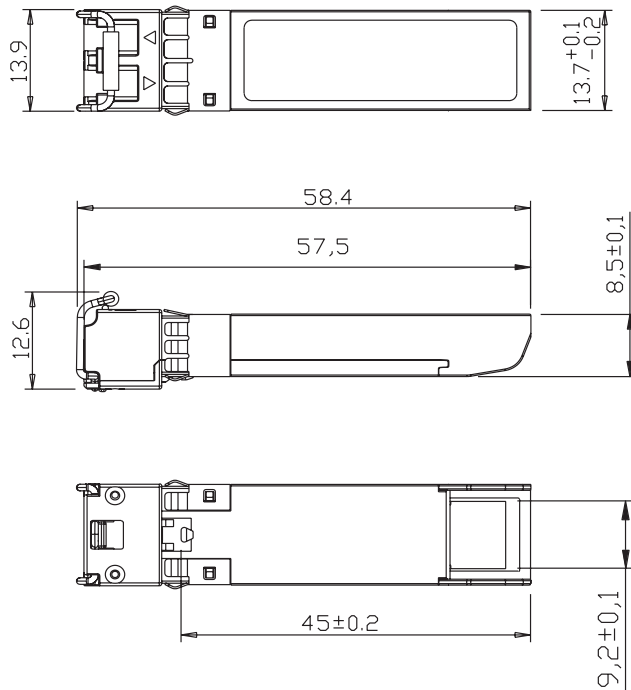
(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	$\lambda_c$	840	850	860	nm	
Spectral Width	$\sigma$			0.85	nm	
Optical Output Power	Pout	-9		-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)					
<b>Receiver</b>						
Optical Input Wavelength	$\lambda_c$	770		860	nm	
Receiver Overload	Pol	0			dBm	4
RX Sensitivity	Sen			-17	dBm	4
RX_LOS Assert	LOS A	-35			dBm	
RX_LOS De-assert	LOS D			-18	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	
<b>General</b>						
Data Rate	BR		1.25		Gb/s	
Bit Error Rate	BER			$10^{-12}$		
Max. Supported Link Length on 9/125 $\mu$ m SMF@1.25Gb/s	LMAX		550		m	
Total System Budget	LB	8			dB	

### Notes:

1. The optical power is launched into SMF.
2. 20-80%.
3. Jitter measurements taken using Agilent OMNIBERT 718 in accordance with GR-253.
4. Measured with PRBS 2<sup>7-1</sup> at 10<sup>-12</sup> BER

## 5. Mechanical Diagram



Units in mm

**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
Accedian	7SM-100-A	Enterasys	MGBIC-LC01-A
Adtran	1200480L1-A	Ericsson	RDH90120/42009-A
Adtran	1200480E1-A	Extreme	10051H-A
Adtran	1200482G1-A	F5 Networks	F5-UPG-SFP-R-A
Adtran	1184561PG3-A	Finisar	FTLF8519P2BTL-A
Adtran	1184561P3-A	Finisar	FTLF8519P2XNL-A
Adtran	12004800-A	Finisar	FTRJ-8519-7D-2.5-A
ADVA	0061004008-A	Finisar	FTLF8519P2BNL-A
ADVA	1061705854-01-A	Finisar	FTRJ8519P1BNLMC-A
ADVA	0061705844-03-A	Fortinet	FG-TRAN-SX-A
ADVA	61004008-A	Fortinet	FN-TRAN-SX-A
Alcatel	109570606-A	Fortinet	FR-TRAN-SX-A
Alcatel-Lucent	SFP-GIG-SX-A	Fortinet	FN-TRAN-SX-C1
Alcatel-Lucent	3HE00027AA-A	Gigamon	SFP-502-A
Alcatel-Lucent	3HE00027CA-A	HP	J4858B-A

Alcatel-Lucent	3FE25773AA-A	HP	J4858C-A
Alcatel-Lucent	3FE25773AA-C1	HP	J4858D-A
Alcatel-Lucent	3HE00028CA-C1	Extreme	GESFP-SX-EXN
Allied Telesis	SPSX-A	Extreme	10051H-C1
Arista	SFP-1G-SX-A	HP	JW088A-A
Aruba	SFP-SX-A	HP	Q8N53A-A
Avago	AFBR-5710PZ-C1	HP	GESFP-SX-HP
Avaya	108873241-A	HP	GESFP-SXL-HP
Avaya	AA1419048-E6-A	HP	J4858D-C1
Apcon	1000SFP055-APC	Huawei	LS-SFP-SX-A
Brocade-Foundry	E1MG-SX-OM-A	Huawei	ESFP-GE-SX-MM850-A
Brocade-Foundry	E1MG-SX-A	Infinera	TOM-1G-SX-A-A
Brocade-Foundry	E1MTG-SX-A	JDSU	AC-SFP-1000SX-A
Brocade-Foundry	E1MG-SX-OM-T-A	Juniper	EX-SFP-1GE-SX-A
BTI	BP3AD1SS-A	Juniper	SRX-SFP-1GE-SX-A
Calix	100-01660-A	Juniper	SFP-1GE-SX-A
Calix	1000SFP055-CLX	Juniper	EX-SFP-1GE-SX-ET-A
Check Point	CPAC-TR-1SX-A	Juniper	QFX-SFP-1GE-SX-A
Ciena	NTTP01AF-A	Juniper	EX-SFP-1GE-SX-C1
Ciena	XCVR-B00G85-A	Juniper	SFP-1GE-SX-C1
Ciena	B-700-1016-001-A	Linksys	MGBSX1-A
Ciena	XCVR-A00G85-A	Meraki	SFP-1GB-SX-A
Ciena	XCVR-A00G85-C1	Meraki	MA-SFP-1GB-SX-A
Ciena	GESFP-SX-CIE	Mikrotik	S-85DLC05D-C1
Ciena	GESFP-SXI-CIE	MRV	SFP-DGD-SX-A
Ciena	GESFP-SX-O-CIE	MSA	AN-SFP-SX
Cisco	GLC-SX-MM-A	MSA	AN-SFP-SX-I
Cisco	ONS-GX-2FC-MMI-A	MSA	AN-SFP-SX-RGD
Cisco	GLC-SX-MM-RGD-A	MSA Champion ONE	1000SFP055
Cisco	GESFP-SX-CSC	MSA Champion ONE	1000SFP055-H
Cisco	GESFP-SXI-CSC	MSA Champion ONE	1000SFP055-H-TAA
Cisco	GLC-SX-MMD-A	Netgear	AGM731F-A
Cisco	GLC-SX-MMD-C1	Nortel	AA1419013-E5-A
Cisco	GESFP-SX-9KV	Nortel	AA1419014-E5-A
Cyan	280-0045-00-A	OnePort	OP-SFP-SXD
Cyan	280-0182-00-A	Palo Alto	PAN-SFP-SX-A
D-Link	DEM-311GT-A	Palo Alto	GESFP-SX-PAN

Dell	331-5308-A	Palo Alto	PAN-SFP-SX-C1
Dell	320-2881-A	Samsung	SLS-BB1150EGEX-A
Dell	407-BBOR-A	Tellabs	0410-0447-A
Dell	GESFP-SX-DLL	Transition Networks	TN-SFP-SXD-A
Dell	407-BBOR-C1	Ubiquiti Networks	UF-MM-1G-A
Edgecore	ET4201-SX-A	Zhone	SFP-GE-SX-850-DLC-A

## 7. Contact Information

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