

Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 80km on 9/125µm SMF
- 1470nm~1610nm DFB laser transmitter
- PIN Receiver
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- 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-ZX Ethernet
- 1×Fibre Channel
- CWDM Networks

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	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 Section:						
Input differential impedance	R _{in}	90	100	110	Ohm	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 _{dessert}			10	us	
Parameter	Symbol	Min	Typ	Max	Unit	Note
Receiver Section:						
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 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

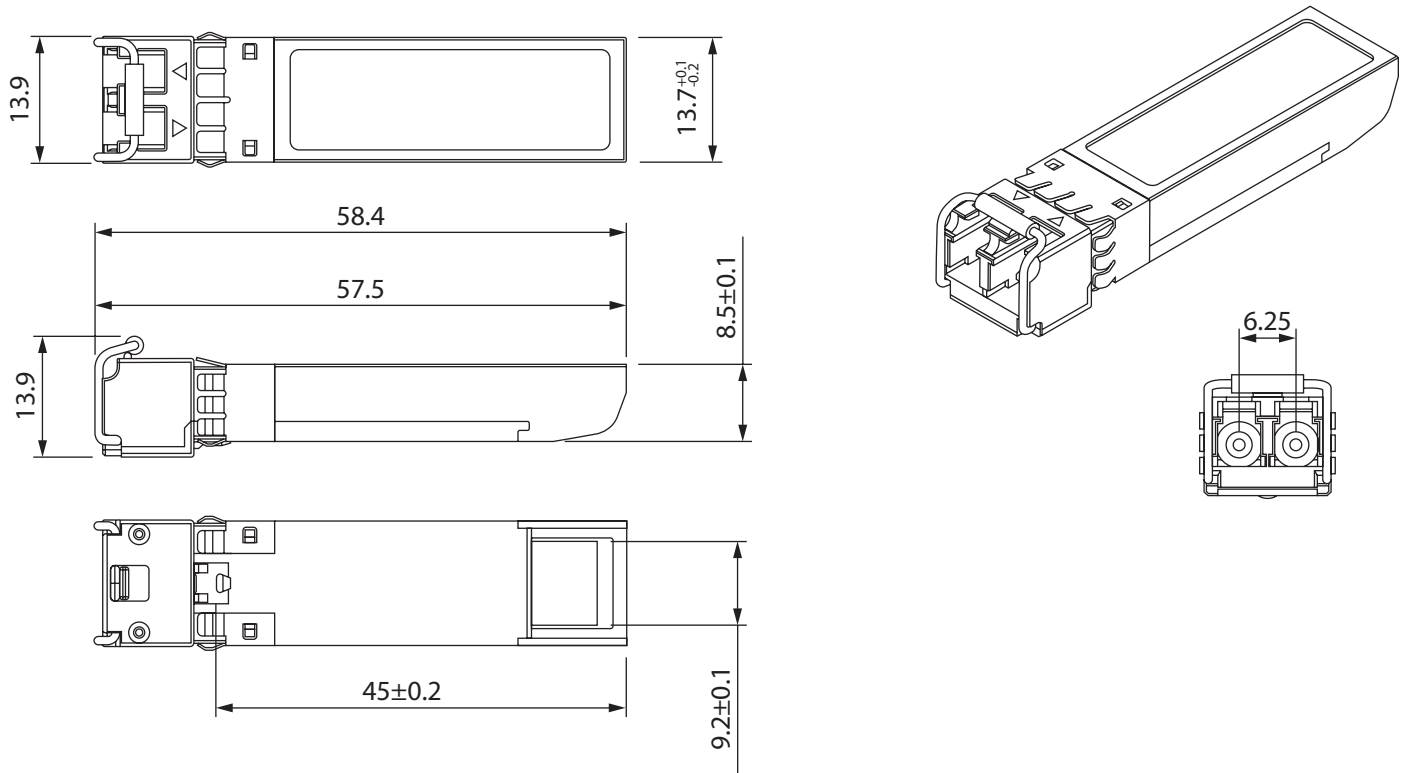
(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter Section:						
Center Wavelength	λ_c	$\lambda-3$	λ	$\lambda+3$	nm	
Spectral Width	σ			1	nm	
Side Mode Supression Ratio	SSRmin	30			dB	
Optical Output Power	Pout	-5		0	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 Section:						
Optical Input Wavelength	λ_c	1270		1610	nm	
Receiver Overload	Pol	-7			dBm	4
RX Sensitivity	Sen			-26	dBm	4
RX_LOS Assert	LOS A	-40			dBm	
RX_LOS De-assert	LOS D			-27	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	
General Specifications:						
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	19			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 2⁷⁻¹ at 10⁻¹² BER

5. Mechanical Diagram



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
Adtran	1000SFP1530CWD-M80R2-ADN	Cisco	GES-C35-80-CSC
Adtran	1000SFP1490CWD-M80R2-ADN	Cisco	GES-C43-80-CSC
Adtran	1000SFP1530CWD-M80R2-ADN	Cisco	GES-C45-80-CSC
Adtran	1000SFP1550CWD-M80R2-ADN	Cisco	GES-C49-80-CSC
Adtran	1000SFP1570CWD-M80R2-ADN	Cisco	GES-C51-80-CSC
Adtran	1000SFP1610CWD-M80R2-ADN	Cisco	GES-C53-80-CSC
Alcatel	3HE05936CW27-A	Cisco	GES-C55-80-CSC

Alcatel	3HE05936CW29-A	Cisco	GES-C57-80-CSC
Alcatel	3HE05936CW31-A	Cisco	GES-C59-80-CSC
Alcatel	3HE05936CW33-A	Cisco	GES-C61-80-CSC
Alcatel	3HE05936CW35-A	Cyan	280-0067-00-A
Alcatel	3HE05936CW37-A	Cyan	280-0068-00-A
Alcatel	3HE05936CW39-A	Cyan	280-0069-00-A
Alcatel	3HE05936CW41-A	Cyan	280-0070-00-A
Alcatel	3HE05936CW43-A	Cyan	280-0071-00-A
Alcatel	3HE05936CW45-A	Cyan	280-0072-00-A
Alcatel	3HE05936CW47-A	Cyan	280-0073-00-A
Alcatel	3HE05936CW49-A	Cyan	280-0074-00-A
Alcatel	3HE05936CW51-A	Cyan	280-0471-00-A
Alcatel	3HE05936CW53-A	Cyan	280-0472-00-A
Alcatel	3HE05936CW55-A	Cyan	280-0473-00-A
Alcatel	3HE05936CW57-A	Cyan	280-0474-00-A
Alcatel	3HE05936CW59-A	Cyan	280-0475-00-A
Alcatel	3HE05936CW61-A	Cyan	280-0476-00-A
Arista	SFP-1G-CZ-1270-A	Cyan	280-0477-00-A
Arista	SFP-1G-CZ-1290-A	Cyan	280-0478-00-A
Arista	SFP-1G-CZ-1310-A	Extreme	1G-SFP-CWDM-1270-A
Arista	SFP-1G-CZ-1330-A	Extreme	1G-SFP-CWDM-1290-A
Arista	SFP-1G-CZ-1350-A	Extreme	1G-SFP-CWDM-1310-A
Arista	SFP-1G-CZ-1370-A	Extreme	1G-SFP-CWDM-1330-A
Arista	SFP-1G-CZ-1390-A	Extreme	1G-SFP-CWDM-1350-A
Arista	SFP-1G-CZ-1410-A	Extreme	1G-SFP-CWDM-1370-A
Arista	SFP-1G-CZ-1430-A	Extreme	1G-SFP-CWDM-1390-A
Arista	SFP-1G-CZ-1450-A	Extreme	1G-SFP-CWDM-1410-A
Arista	SFP-1G-CZ-1470-A	Extreme	1G-SFP-CWDM-1430-A
Arista	SFP-1G-CZ-1490-A	Extreme	1G-SFP-CWDM-1450-A
Arista	SFP-1G-CZ-1510-A	Extreme	1G-SFP-CWDM-1470-A
Arista	SFP-1G-CZ-1530-A	Extreme	1G-SFP-CWDM-1490-A
Arista	SFP-1G-CZ-1550-A	Extreme	1G-SFP-CWDM-1510-A
Arista	SFP-1G-CZ-1570-A	Extreme	1G-SFP-CWDM-1530-A
Arista	SFP-1G-CZ-1590-A	Extreme	1G-SFP-CWDM-1550-A
Arista	SFP-1G-CZ-1610-A	Extreme	1G-SFP-CWDM-1570-A
Arista	SFP-1G-CZ-1470-C1	Extreme	1G-SFP-CWDM-1590-A
Arista	SFP-1G-CZ-1490-C1	Extreme	1G-SFP-CWDM-1610-A

Brocade	E1MG-CWDM80-1470-C1	Juniper	SFP-GE80KCW1270-A
Brocade	E1MG-CWDM80-1490-C1	Juniper	SFP-GE80KCW1290-A
Calix	100-0378X27-A	Juniper	SFP-GE80KCW1310-A
Calix	100-0378X29-A	Juniper	SFP-GE80KCW1330-A
Calix	100-0378X31-A	Juniper	SFP-GE80KCW1350-A
Calix	100-0378X33-A	Juniper	SFP-GE80KCW1370-A
Calix	100-0378X35-A	Juniper	SFP-GE80KCW1390-A
Calix	100-0378X37-A	Juniper	SFP-GE80KCW1410-A
Calix	100-0378X39-A	Juniper	SFP-GE80KCW1430-A
Calix	100-0378X41-A	Juniper	SFP-GE80KCW1450-A
Calix	100-0378X43-A	Juniper	SFP-GE80KCW1470-A
Calix	100-0378X45-A	Juniper	SFP-GE80KCW1490-A
Calix	100-0378X47-A	Juniper	SFP-GE80KCW1510-A
Calix	100-0378X49-A	Juniper	SFP-GE80KCW1530-A
Calix	100-0378X51-A	Juniper	SFP-GE80KCW1550-A
Calix	100-0378X53-A	Juniper	SFP-GE80KCW1570-A
Calix	100-0378X55-A	Juniper	SFP-GE80KCW1590-A
Calix	100-0378X57-A	Juniper	SFP-GE80KCW1610-A
Calix	100-0378X59-A	Juniper	EX-SFP-GE80KCW1450-C1
Calix	100-0378X61-A	Juniper	EX-SFP-GE80KCW1470-C1
Calix	1000SFP55CW80R2-CLX	Juniper	EX-SFP-GE80KCW1490-C1
Calix	1000SFP49CW80R2-CLX	MSA Generic	CWDM-SFP-80-I-27-A
Calix	1000SFP55CW80R2-CLX	MSA Generic	CWDM-SFP-80-I-29-A
Ciena	XCVR-A80D27-A	MSA Generic	CWDM-SFP-80-I-31-A
Ciena	XCVR-A80D29-A	MSA Generic	CWDM-SFP-80-I-33-A
Ciena	XCVR-A80D31-A	MSA Generic	CWDM-SFP-80-I-35-A
Ciena	XCVR-A80D33-A	MSA Generic	CWDM-SFP-80-I-37-A
Ciena	XCVR-A80D35-A	MSA Generic	CWDM-SFP-80-I-39-A
Ciena	XCVR-A80D37-A	MSA Generic	CWDM-SFP-80-I-41-A
Ciena	XCVR-A80D39-A	MSA Generic	CWDM-SFP-80-I-43-A
Ciena	XCVR-A80D41-A	MSA Generic	CWDM-SFP-80-I-45-A
Ciena	XCVR-A80D43-A	MSA Generic	CWDM-SFP-80-I-47-A
Ciena	XCVR-A80D45-A	MSA Generic	CWDM-SFP-80-I-49-A
Ciena	XCVR-A80D47-A	MSA Generic	CWDM-SFP-80-I-51-A
Ciena	XCVR-A80D49-A	MSA Generic	CWDM-SFP-80-I-53-A
Ciena	XCVR-A80D51-A	MSA Generic	CWDM-SFP-80-I-55-A
Ciena	XCVR-A80D53-A	MSA Generic	CWDM-SFP-80-I-57-A

Ciena	XCVR-A80D55-A	MSA Generic	CWDM-SFP-80-I-59-A
Ciena	XCVR-A80D57-A	MSA Generic	CWDM-SFP-80-I-61-A
Ciena	XCVR-A80D59-A	MSA OnePort	OP-CWDM-SFP-80-27
Ciena	XCVR-A80D61-A	MSA OnePort	OP-CWDM-SFP-80-29
Ciena	XCVR-A80D45-C1	MSA OnePort	OP-CWDM-SFP-80-31
Ciena	GES-C47-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-33
Ciena	GES-C49-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-35
Ciena	GES-C51-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-37
Ciena	GES-C53-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-39
Ciena	GES-C55-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-41
Ciena	GES-C57-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-43
Ciena	GES-C59-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-45
Ciena	GES-C61-80I-CIE	MSA OnePort	OP-CWDM-SFP-80-47
Cisco	CWDM-SFP-1270-A	MSA OnePort	OP-CWDM-SFP-80-49
Cisco	CWDM-SFP-1290-A	MSA OnePort	OP-CWDM-SFP-80-51
Cisco	CWDM-SFP-1310-A	MSA OnePort	OP-CWDM-SFP-80-53
Cisco	CWDM-SFP-1330-A	MSA OnePort	OP-CWDM-SFP-80-55
Cisco	CWDM-SFP-1350-A	MSA OnePort	OP-CWDM-SFP-80-57
Cisco	CWDM-SFP-1370-A	MSA OnePort	OP-CWDM-SFP-80-59
Cisco	CWDM-SFP-1390-A	MSA OnePort	OP-CWDM-SFP-80-61
Cisco	CWDM-SFP-1410-A	MSA Champion ONE	1000SFP1XX0CWDM80R2
Cisco	CWDM-SFP-1430-A	MSA Champion ONE	1000SFP1490CWDM80R2
Cisco	CWDM-SFP-1450-A	MSA Champion ONE	1000SFP1510CWDM80R2
Cisco	CWDM-SFP-1470-A	MSA Champion ONE	1000SFP1550CWDM80R2
Cisco	CWDM-SFP-1490-A	MSA Champion ONE	1000SFP1610CWDM80R2
Cisco	CWDM-SFP-1510-A	MSA Champion ONE	1000SFP1470CWDM80
Cisco	CWDM-SFP-1530-A	MSA Champion ONE	1000SFP1470CWDM80R2
Cisco	CWDM-SFP-1550-A	MSA Champion ONE	1000SFP1470CWDM80R2-H
Cisco	CWDM-SFP-1570-A	MSA Champion ONE	1000SFP1490CWDM80
Cisco	CWDM-SFP-1290-C1	MSA Champion ONE	1000SFP1490CWDM80R2-H
Cisco	CWDM-SFP-1470-C1	MSA Champion ONE	1000SFP1510CWDM80
Cisco	CWDM-SFP-1470-I-C1	MSA Champion ONE	1000SFP1510CWDM80R2-H
Cisco	CWDM-SFP-1490-C1	MSA Champion ONE	1000SFP1530CWDM80
Cisco	CWDM-SFP-1490-I-C1	MSA Champion ONE	1000SFP1530CWDM80R2
Cisco	CWDM-SFP-1510-C1	MSA Champion ONE	1000SFP1530CWDM80R2-H
Cisco	CWDM-SFP-1510-I-C1	MSA Champion ONE	1000SFP1550CWDM80
Cisco	CWDM-SFP-1530-C1	MSA Champion ONE	1000SFP1550CWDM80R2-H

Cisco	CWDM-SFP-1550-C1	MSA Champion ONE	1000SFP1570CWDM80
Cisco	CWDM-SFP-1570-C1	MSA Champion ONE	1000SFP1570CWDM80R2
Cisco	CWDM-SFP-1590-C1	MSA Champion ONE	1000SFP1570CWDM80R2-H
Cisco	CWDM-SFP-1610-C1	MSA Champion ONE	1000SFP1590CWDM80
Cisco	CWDM-SFP-1590-A	MSA Champion ONE	1000SFP1590CWDM80R2
Cisco	CWDM-SFP-1610-A	MSA Champion ONE	1000SFP1590CWDM80R2-H
Cisco	GES-C31-80-CSC	MSA Champion ONE	1000SFP1610CWDM80
Cisco	GES-C33-80-CSC	MSA Champion ONE	1000SFP1610CWDM80R2-H

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