

Features:

- Operating Data Rate up to 1.25Gbps
- 18-Wavelength CWDM DFB LD Transmitter from 1270nm to 1610nm with step 20nm
- Single 3.3V Power Supply and TTL Logic Interface
- Hot-Pluggable SFP Footprint Duplex LC Connector Interface
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- Operating Temperature:
 Standard: 0°C ~ +70°C
 Extended: -20°C ~ +85°C
 Industrial: -40°C ~ +85°C
- Compliant with MSA SFP Specification
- Compliant with SFF-8472
- ROHS 2.0 compatible



Applications:

- Gigabit Ethernet Switches and Routers
- Fiber Channel Switch Infrastructure

1. Absolute Maximum Ratings

Exceeding any one of these values may destroy the device immediately.

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Maximum Supply Voltage	VCC	-0.5	3.6	V
Operating Relative Humidity			95	%

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	Tc	0		+70	°C
Power Supply Voltage	Vcc	3.15	3.3	3.45	V
Power Supply Current	Icc			300	mA
Data Rate	GBE		1.25		Gbps
	FC		1.063		

3. Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
LVPECL Inputs (Differential)	Vin	400		2000	mVpp	AC Coupled Inputs* ^{Note1}
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
TX_Dis	Disable	2		Vcc+0.3	V	
	Enable	0		0.8		
TX_FAULT	Fault	2		Vcc+0.3	V	
	Normal	0		0.8		
Receiver						
LVPECL Outputs (Differential)	Vout	400		2000	mVpp	AC Coupled Inputs* ^{Note1}
Output Impedance (Differential)	Zout	85	100	115	ohms	
TX_Disable Assert Time	t_off			10	us	
RX_LOS	LOS	2		Vcc+0.3	V	
	Normal	0		0.8		
MOD_DEF (0.2)	VoH	2.5			V	With Serial ID
	VoL	0		0.5		

Notes:

1. LVPECL logic, internally AC coupled

4. Optical and Electrical Characteristics

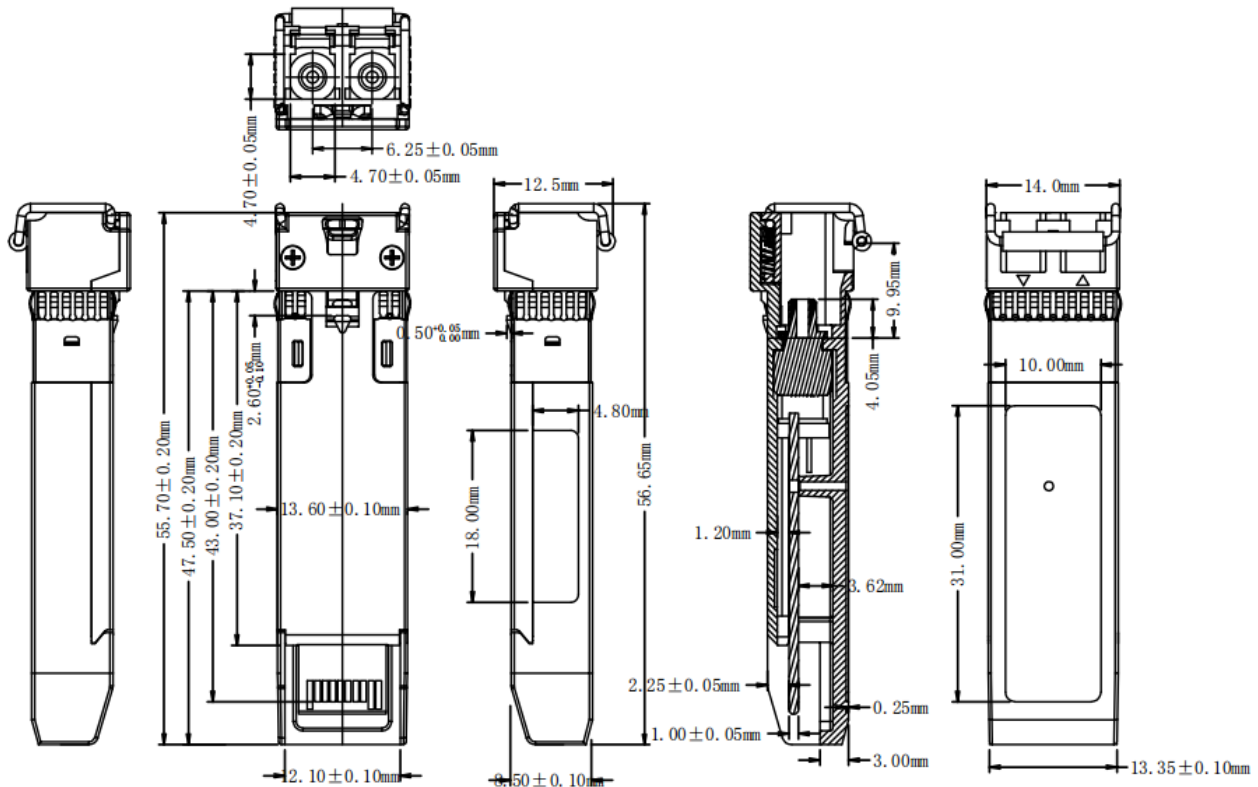
Parameter	Symbol	Min.	Typ.	Max.	Unit	Note	
Link Budget		32			dB		
Data Rate			1.25		Gbps		
Transmitter							
Center Wavelength	λ_C	λ_C-6	λ_C	$\lambda_C+7.5$	nm		
Spectral Width (RMS)	$\Delta\lambda$			1	nm		
Average Output Power	Pout	0		5	dBm	2	
Side Mode Suppression Ratio	SMSR	30			dB		
Extinction Ratio	ER	8.2			dB		
Rise/Fall Time (20% ~ 80%)	tr/tf			0.26	ns		
Total Jitter	TJ			0.43	UI	3	
Output Optical Eye	Compliant with IEEE 802.3						3

Pout@TX Disable Asserted	Pout			-45	dBm	
Receiver						
Center Wavelength	λ C	1260		1630	nm	
Receiver Sensitivity	Pmin			-32	dBm	4
Receiver Overload	Pmax	-10			dBm	
LOS De-Assert	LOSD			-35	dBm	
LOS Assert	LOSA	-45			dBm	
LOS Hysteresis		0.5			dB	

Notes:

- Output power is measured by coupling into a 9/125 mm multi-mode fiber.
- Filtered, measured with a PRBS 27-1 test pattern @1250Mbps.
- Minimum average optical power is measured at BER less than 1E-12, with 27-1 PRBS and ER=9 dB

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
Ciena	GES-C47-120I-CIE	Nokia (Alcatel)	3HE00070CF-A
Cisco	CWDM-SFP-1470-120-A	Nokia (Alcatel)	3HE00070CG-A
Cisco	CWDM-SFP-1490-120-A	Nokia (Alcatel)	3HE00070CH-A
Cisco	CWDM-SFP-1490-120-C1	MSA Generic	CWDM-SFP-120-47-A
Cisco	CWDM-SFP-1510-120-A	MSA Generic	CWDM-SFP-120-49-A
Cisco	CWDM-SFP-1530-120-A	MSA Generic	CWDM-SFP-120-51-A
Cisco	CWDM-SFP-1550-120-A	MSA Generic	CWDM-SFP-120-53-A
Cisco	CWDM-SFP-1570-120-A	MSA Generic	CWDM-SFP-120-55-A
Cisco	CWDM-SFP-1590-120-A	MSA Generic	CWDM-SFP-120-57-A
Cisco	CWDM-SFP-1610-120-A	MSA Generic	CWDM-SFP-120-59-A
Cisco	GES-C47-120-CSC	MSA Generic	CWDM-SFP-120-61-A
Cisco	GES-C47-120I-CIE	MSA Champion ONE	1000SFP1470CWDM120R2
Cisco	GES-C49-120-CSC	MSA Champion ONE	1000SFP1490CWDM120R2
Cisco	GES-C51-120-CSC	MSA Champion ONE	1000SFP1510CWDM120R2
Cisco	GES-C59-120I-CIE	MSA Champion ONE	1000SFP1530CWDM120R2
Cisco	1000SFP1610CWDM120R2	MSA Champion ONE	1000SFP1530CWDM120R2-H
Juniper	SFP-GE120KCW1470-A	MSA Champion ONE	1000SFP1550CWDM120R2
Juniper	SFP-GE120KCW1490-A	MSA Champion ONE	1000SFP1570CWDM120R2
Juniper	SFP-GE120KCW1510-A	MSA Champion ONE	1000SFP1590CWDM120R2
Juniper	SFP-GE120KCW1530-A	MSA Champion ONE	1000SFP1610CWDM120R2
Juniper	SFP-GE120KCW1550-A	MSA Champion ONE	1000SFP1XXCWDM120R2
Juniper	SFP-GE120KCW1570-A	MSA OnePort	OP-CWDM-SFP-120-47
Juniper	SFP-GE120KCW1590-A	MSA OnePort	OP-CWDM-SFP-120-49
Juniper	SFP-GE120KCW1610-A	MSA OnePort	OP-CWDM-SFP-120-51
Nokia (Alcatel)	3HE00070CA-A	MSA OnePort	OP-CWDM-SFP-120-53
Nokia (Alcatel)	3HE00070CB-A	MSA OnePort	OP-CWDM-SFP-120-55
Nokia (Alcatel)	3HE00070CC-A	MSA OnePort	OP-CWDM-SFP-120-57
Nokia (Alcatel)	3HE00070CD-A	MSA OnePort	OP-CWDM-SFP-120-59
Nokia (Alcatel)	3HE00070CE-A	MSA OnePort	OP-CWDM-SFP-120-61

7. Contact Information

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