

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

1. Product Features

- Operating data rate up to 1.25Gbps
- Up to 80km (PIN) transmission distance
- DWDM EML Laser and PIN receiver
- LC duplex connector
- Hot pluggable 20pin connector
- Low power consumption
 - Commercial <1.5W
 - Industrial <1.8W
- Single +3.3V±5% power supply
- Compliant with SFF-8472
- Fully RoHS Compliant
- Case operating temperature
 - Commercial: 0°C to +70°C
 - Industrial: -40°C to +85°C

Application

- 1.25GBASE-DWDM
- Compliant with MSA SFF-8472
- Other optical links

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

2. Description

The 1.25G SFP DWDM 80km Transceiver is intended for 80km (PIN) reach service 1.25G DWDM D18~D61 single mode high-speed communications equipment where low-cost, extraordinary performance and reliability are essential. It consumes low power, operates base on 3.3V DC power supply and is offered in the industrial temperature range. They are compliant with SFP MSA, SFF-8431 and SFF-8432.

The low jitter and low bit error rate optical assembly features a D18~D61 EML laser transmitter and PIN receiver. The differential AC coupled Tx and Rx data interfaces are CML compatible. The device is Class I laser safety compliant.

2.1 Product Name And Series Number(s)

JPC PN	Laser(nm)	Distance	Fiber Type	Connector	Tem.
P58**0ARIZ80xx	DWDM	80km	SMF	LC	I
P58**0ARCZ80xx	DWDM	80km	SMF	LC	C

Note-1: ** Indicates the customer code.

Note-2: xx Refer to the following table for wavelength.

1.25G SFP DWDM 80km is the channel number

Channel	Wavelength (nm)	Frequency (THZ)	Channel	Wavelength (nm)	Frequency (THZ)
D18	1563.05	191.8	D40	1545.32	194
DH18	1562.64	191.85	DH40	1544.92	194.05
D19	1562.23	191.9	D41	1544.53	194.1
DH19	1561.83	191.95	DH41	1544.13	194.15
D20	1561.42	192	D42	1543.73	194.2
DH20	1561.01	192.05	DH42	1543.33	194.25
D21	1560.61	192.1	D43	1542.94	194.3
DH21	1560.2	192.15	DH43	1542.54	194.35
D22	1559.79	192.2	D44	1542.14	194.4
DH22	1559.39	192.25	DH44	1541.75	194.45
D23	1558.98	192.3	D45	1541.35	194.5
DH23	1558.58	192.35	DH45	1540.95	194.55
D24	1558.17	192.4	D46	1540.56	194.6

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

DH24	1557.77	192.45	DH46	1540.16	194.65
D25	1557.36	192.5	D47	1539.77	194.7
DH25	1556.96	192.55	DH47	1539.37	194.75
D26	1556.55	192.6	D48	1538.98	194.8
DH26	1556.15	192.65	DH48	1538.58	194.85
D27	1555.75	192.7	D49	1538.19	194.9
DH27	1555.34	192.75	DH49	1537.79	194.95
D28	1554.94	192.8	D50	1537.4	195
DH28	1554.54	192.85	DH50	1537	195.05
D29	1554.13	192.9	D51	1536.61	195.1
DH29	1553.73	192.95	DH51	1536.22	195.15
D30	1553.33	193	D52	1535.82	195.2
DH30	1552.93	193.05	DH52	1535.43	195.25
D31	1552.52	193.1	D53	1535.04	195.3
DH31	1552.12	193.15	DH53	1534.64	195.35
D32	1551.72	193.2	D54	1534.25	195.4
DH32	1551.32	193.25	DH54	1533.86	195.45
D33	1550.92	193.3	D55	1533.47	195.5
DH33	1550.52	193.35	DH55	1533.07	195.55
D34	1550.12	193.4	D56	1532.68	195.6
DH34	1549.72	193.45	DH56	1532.29	195.65
D35	1549.32	193.5	D57	1531.9	195.7
DH35	1548.91	193.55	DH57	1531.51	195.75
D36	1548.51	193.6	D58	1531.12	195.8
DH36	1548.11	193.65	DH58	1530.72	195.85
D37	1547.72	193.7	D59	1530.33	195.9
DH37	1547.32	193.75	DH59	1529.94	195.95
D38	1546.92	193.8	D60	1529.55	196
DH38	1546.52	193.85	DH60	1529.16	196.05
D39	1546.12	193.9	D61	1528.77	196.1
DH39	1545.72	193.95			

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

2.2 Dimensions, Materials, Platings And Marking

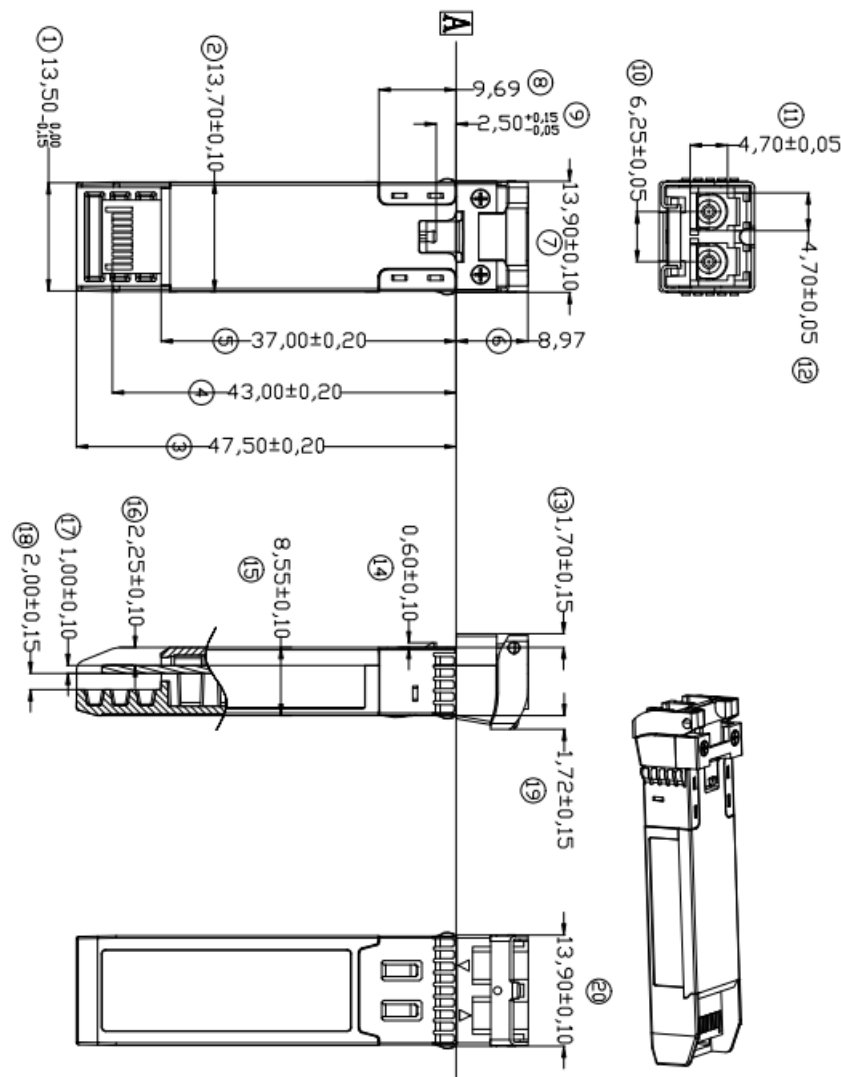


Figure 3. Module Mechanical Dimensions

3. Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T _s	°C	-40	85
Relative Humidity	RH	%	0	95
Maximum Supply Voltage	V _{cc}	V	-0.5	4.0

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

4. Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Power Supply Voltage	V _{CC}	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s		1.25	
Bit Error Ratio	BER				1*10 ⁻¹²

5. Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	V _{CC}	V	3.14	3.3	3.46	
Transmitter						
Input Differential Impedance	R _{IN}	Ω		100		
Single-ended Data Input Swing	V _{IN}	mVp-p	90		450	
Transmit Disable Voltage	V _{DIS}	V	2		V _{CCHOST}	
Transmit Enable Voltage	V _{EN}	V	V _{EE}		V _{EE} +0.8	
Transmit Fault Assert Voltage	V _{FA}	V	2		V _{CCHOST}	
Transmit Fault De-Assert Voltage	V _{FDA}	V	V _{EE}		V _{EE} +0.4	
Receiver						
Single-ended Data Output Swing	V _{OD}	mVp-p	200		450	
LOS Fault	V _{LOSFT}	V	2		V _{CCHOST}	
LOS Normal	V _{LOSNR}	V	V _{EE}		V _{EE} +0.4	

6. Optical Characteristics ((T_c=0 to 70 °C or -40 to 85 °C and V_{CC}= 3.14 to 3.46V)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Nominal Wavelength	λ _C	nm	1567.13~1572.89			
Center Wavelength Spacing		GHz	100			
Wavelength Tolerance		nm	-0.4		0.4	
Average Output Power	P _{av}	dBm	-2		5	
Spectral Width (-20dB)	σ	nm			1	
Extinction Ratio	ER	dB	6			

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

Side Mode Suppression Ratio	SMSR	dB	30			
Transmitter and Dispersion Penalty	TDP	dB			4	
Average Launch Power of OFF Transmitter	P _{OFF}	dBm			-30	
Relative Intensity Noise	R _{IN}	dB/Hz			-128	
Receiver (PIN/TIA)						
Center Wavelength	λ_c	nm	1260		1620	
Receiver Sensitivity(OMA)	RSENSE	dBm			-18	1
Receiver Overload (OMA)	Pmax	dBm	2			
Optical Return Loss		dB			-26	
LOS Assert	LOSA	dBm	-35			
LOS De-Assert LOS	LOSD	dBm			-19	
LOS Hysteresis		dB	0.5			

Note1:

Measured at 1.25Gb/s, ER>=6dBm, PRBS 2³¹-1 and BER better than or equal to 1E-12;

7. PIN Assignment

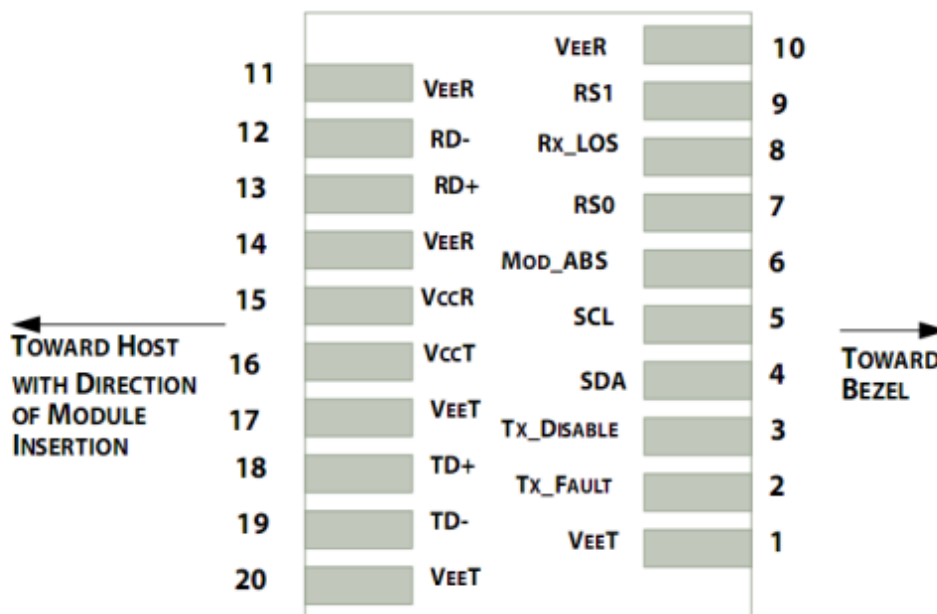


Figure 1. Pin function definitions

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

Table 1: Transceiver pin descriptions

Pin Number	Symbol	Name	Description
1,17,20	VeeT	Transmitter Signal Ground	Connected to signal ground on the host board.
2	TX Fault	Transmitter Fault Out (OC)	Module transmitter fault output.
3	TX Disable	Transmitter Disable In (LVTTL)	Module transmitter disable control.
4	SDA	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
5	SCL		
6	MOD-ABS		
7	RS0	Receiver Rate Select (LVTTL) Transmitter Rate Select (LVTTL)	NA
9	RS1		
8	LOS	Loss of Signal Out (OC)	Receiver loss of signal.
10,11,14	VeeR	Receiver Signal Ground	Connected to signal ground on the host board.
12	RD-	Receiver Negative DATA Out (CML)	Receiver inverted data output, internally AC coupled and terminated
13	RD+	Receiver Positive DATA Out (CML)	Receiver non-inverted data output, internally AC coupled and terminated.
15	VccR	Receiver Power Supply	Receiver Power 3.3V Supply.
16	VccT	Transmitter Power Supply	Transmitter Power 3.3V Supply.
18	TD+	Transmitter Positive DATA In (CML)	Transmitter non-inverted data input, internally AC coupled and terminated.
19	TD-	Transmitter Negative DATA In (CML)	Transmitter inverted data Input, internally AC coupled and terminated.

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

8. Recommended Interface Circuit

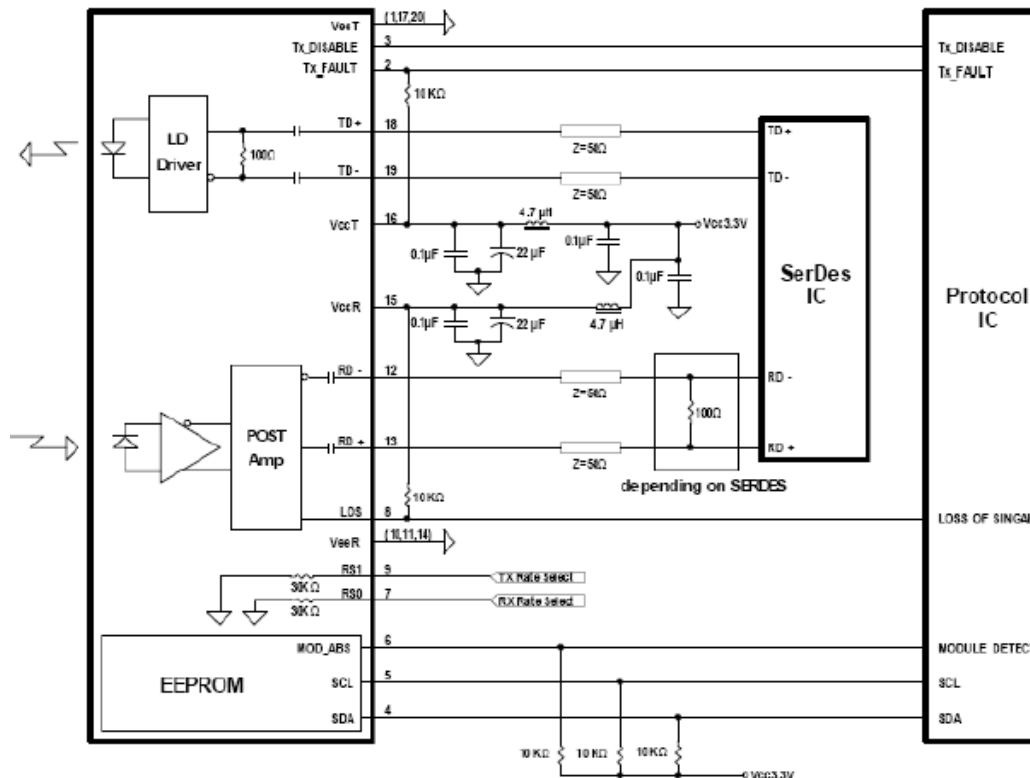


Figure 2. Typical application circuit

9. Digital Diagnostics Functions

As defined by the SFF-8472, Our SFP transceivers provide digital diagnostic functions via a 2-wire serial interface, which allows real-time access to the following operating parameters:

- Transceiver temperature
- Laser bias current
- Transmitted optical power
- Received optical power
- Transceiver supply voltage

It also provides a sophisticated system of alarm and warning flags, which may be used to alert end-users when particular operating parameters are outside of a factory-set normal range. The operating and diagnostics information is monitored and reported by a Digital Diagnostics Transceiver Controller (DDTC) inside the transceiver, which is accessed through the 2-wire serial interface. The memories are organized as a series of 8-bit data words that can be addressed individually or sequentially. The 2-wire serial interface

TITLE 1.25G SFP DWDM 80km	DOC No. : 20260806100-001	
	REVISION : 01	AUTHORIZED BY : Eric Chen
	DATE : 2026,08,06	CLASSIFICATION : Optical Transceivers

provides sequential or random access to the 8 bit parameters, addressed from 0x00h to the maximum address of the memory. For more detailed information, including memory map definitions, please refer the SFF-8472 documentation.

10. Digital Diagnostic Monitor Accuracy

The following characteristics are defined over recommended operating conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

11. Modification History

Rev.	Comments	Date	Originator	Approval
1	Initial	2026,08,06	Eric Chen	Mike Sun