



- SFP+ with 25 Gb/s data rate
- Tx/Rx Wavelength: 850 nm. / 850 nm
- Media Type: Multi-Mode Fiber (MMF)
- Optical Budget: 5.3 dB
- Distance: Long Range 300-400m
- Data Rate: 8.5-25.78 Gbps
- Extended 0 to 70 °C Temperature Range
- Compliant to MSA SFP+ Specification SFF-8431
- CE and RoHS compliant

Overview

The SFP-MOM4850LE-25G is a 25GBASE-SR Industrial MSA Compatible SFP28 (Small Form-Factor Pluggable 28) Transceiver, operating over dual Fiber Multi-Mode Fiber (MMF) optical cable. It has a minimum guaranteed optical budget of 5.3 dB, which in most cases is enough to reach 400m over multimode fiber. SFP-MOM4850LE-25G uses a top quality VSCSEL (Vertical Cavity Surface Emitting Laser) transmitter and 25Gb/s PIN photodiode receiver. SFP-MOM4850LE-25G supports DDM/DOM optical diagnostics that provide real-time diagnostic information about the present operating conditions. The SFP-MOM4850LE-25G transceiver operates in Industrial 0°C to +70°C temperature range and has a dual LC interface. SFP-MOM4850LE-25G supports 8.5-25.78 Gbps data rate and is designed for 25G Ethernet (25.78 Gbps) and 10G Ethernet (10.31 Gbps) applications.

The SFP-MOM4850LE-25G transceiver is CE/RoHS certified and is compliant with product safety standards. SFP-MOM4850LE-25G is fully compliant to SFF-8431 and SFF-8472 Multi Source Agreement (MSA), IEEE 802.3by 25 Gb/s specification. Consequently, compliance to above standards guarantees that module is compatible and works with majority of networking equipment.

The module is available in Extended (0° - 70°C) or Xtemp(-20° - 85°C) and Industrial (-45 - 85 °C) operating temps and in Standard (70-100m) or Long Range (300-400m) distances.



Electrical Specification

Absolute Maximum Ratings

Parameters	Symbol	Min	Typ	Max	Units	Notes
Storage Temperature Range	T_s	- 40	-	+ 85	°C	-
Optical Budget	-	5.3	-	-	dB	-
Supply Voltage Range	V_{CC}	3.14	3.3	+ 3.46	V	-
Operating Relative Humidity	RH	0	-	85	%	-

Recommended Operating Conditions

Parameters	Symbol	Min	Typ	Max	Units	Notes
Operating Temperature	T_O	0	-	+ 70	°C	-
Power Supply Voltage	V_{CC}	3.14	3.3	3.46	V	-
Power Consumption		-	-	0.3	W	-
Power Supply Current	I_{CC}	-	-	300	mA	-
Baud Rate	BR	8.5	-	25.78	Gb/s	-
Transmission Distance (OM4)	TD	-	400	-	m	-

Transmitter Characteristics

Parameters	Symbol	Min	Typ	Max	Units	Notes
Center Wavelength	λ_{DC}	840	850	860	nm	-
Average Optical Power	P_{out}	-5.0	-	2.4	dBm	-
Spectral Width (RMS)		-	-	0.6	nm	-
Extinction Ratio	ER	3	-	-	dB	-

Notes

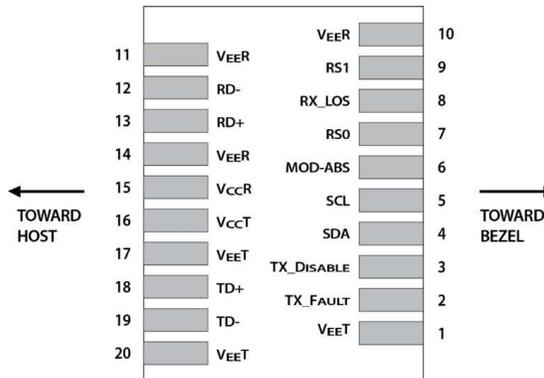
Receiver Characteristics

Parameters	Symbol	Min	Typ	Max	Units	Notes
Center Wavelength	λ	840	850	860	nm	-
Receiver Sensitivity (Average)	P_{min}	-10.3	-	2.4	dBm	-
Receiver Overload	P_{max}	-	-	3.4	dBm	-

Notes

Device Characteristics

Parameter	
Media Type	Multi-Mode Fiber (MMF)
Supported Front Haul Applications	CPRI options 10 (24.33 Gbps), 7 (9.830 Gbps), 8 (10.138 Gbps), 9 (12.165 Gbps)
DDM/DOM	Supported
CDR (Clock Data Recovery)	Supported
Forward Error Correction (FEC)	Host FEC Supported
Connectors	Dual LC
Transmitter Type	VSCEL Laser
Receiver Type	PIN Photodiode
MTBF	1,000,000 Hours
Chipset	Macom, Oclaro, Renesas Electronics, II-VI, Neo, Maxim, Sumitomo, Semtech
Compliance	SFP+ MSA, SFF-8402, SFF-8472, SFF-8431, SFF-8432, IEEE 802.3by, CE, RoHS-6, Class 1 FDA and IEC60825-1 Laser Safety Compliant

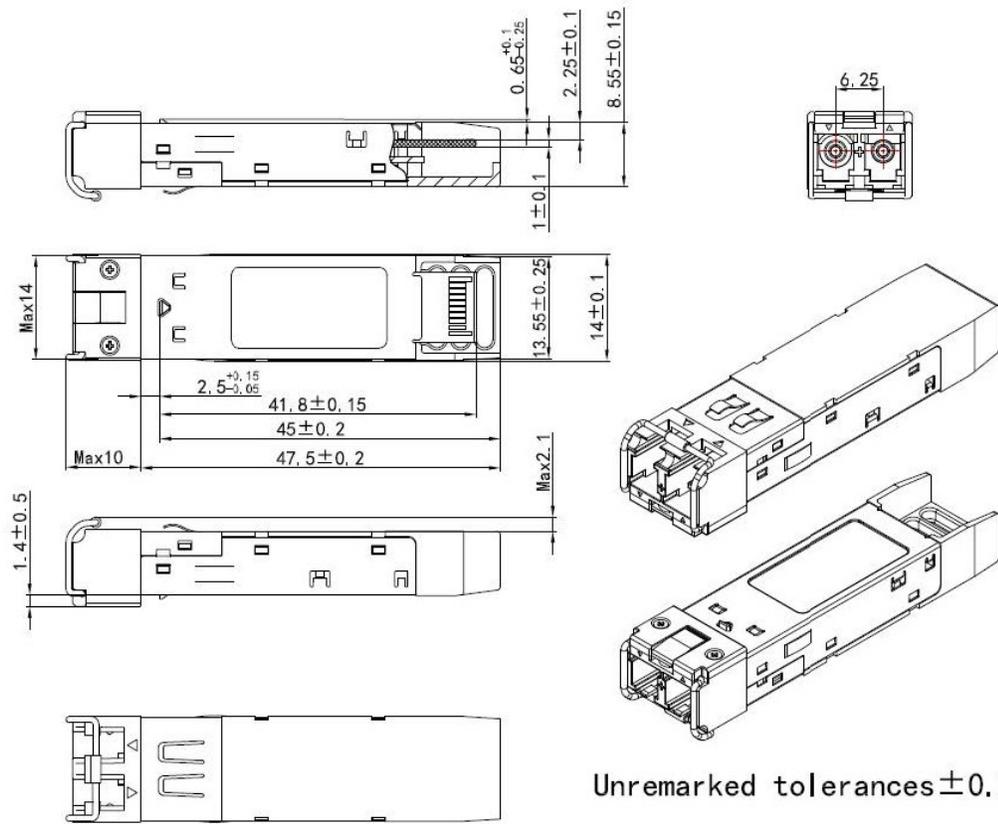


Connector Pin-out

Electrical Pin Definition

PIN	Logic	Name / Description	Notes
1	VEET	Module Transmitter Ground	1
2	TX_Fault	Module Transmitter Fault	2
3	TX_Disable	Transmitter Disable; Turns off transmitter laser output	4
4	SDA	2-Wire Serial Interface Data Line	2-wire Seril Interface Data Line
5	SCL	2-Wire Serial Interface Clock	2-wire Serial Interface Clock
6	MOD-ABS	Module Definition, Grounded in the module	5
7	RS0	RX Rate Select (LVTTTL)	No Function Implemented
8	RX_LOS	Receiver Loss of Signal Indication	3
9	RS1	TX Rate Select (LVTTTL)	No Function Implemented
10	VEER	Module Receiver Ground	1
11	VEER	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	6
13	RD+	Receiver Non-Inverted Data Output	7
14	VEER	Module Receiver Ground	1
15	VccR	Module Receiver Power Supply 3.3V ±5%	7
16	VccT	Module Transmitter Power Supply 3.3V Supply ±5%	7
17	VEET	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	8
19	TD-	Transmitter Inverted Data Input	8
20	VEET	Module Transmitter Ground	1

- Notes**
- ¹Module ground pins GND should be isolated from the module case.
 - ²Tx_Fault is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on Host board.
 - ³LOS is open collector output. Should be pulled up with 4.7k–10kohms on host board to a voltage between 2.0V and VCCT/R+0.3V.
 - ⁴The TX disable is used to shut down the transmitter optical output. It is pulled up inthe module with a 4.7K – 10 K resistor.
 - ⁶RD-/+ : These are the differential receiver outputs. They are AC coupled 100 differential lines which should be terminated with 100 (differential) at the user SERDES.
 - ⁷VccR and VccT are the receiver and transmitter power supplies.
 - ⁸TD-/+ : These are the differential transmitter inputs.



SFP Module Outline Drawing



STANDARDS & CERTIFICATIONS

850 25 Gbps SFP+ Transceiver

SFP-MOM4850LE-25G

Parts & Accessories

SFP-MOM4850-25G	25Gbps 850nm SFP+ OM4 Multi-Mode Fiber (MMF) Transceiver, Duplex SFP+, RoHS Compliant Transceiver supports up to 100m, Operating Temp -40°C to +85°C (Industrial)
SFP-MOM4850E-25G	25Gbps 850nm SFP+ OM4 Multi-Mode Fiber (MMF) Transceiver, Duplex SFP+, RoHS Compliant Transceiver supports up to 100m, Operating Temp 0°C to +70°C (Extended)
SFP-MOM4850L-25G	25Gbps 850nm SFP+ OM4 Multi-Mode Fiber (MMF) Transceiver, Duplex SFP+, RoHS Compliant Transceiver supports up to 400m, Operating Temp -40°C to +85°C (Long Range, Industrial)
SFP-MOM4850LE-25G	25Gbps 850nm SFP+ OM4 Multi-Mode Fiber (MMF) Transceiver, Duplex SFP+, RoHS Compliant Transceiver supports up to 400m, Operating Temp 0°C to +70°C (Long Range, Extended)

Standards & Compliance

Safety	21 CFR 1040.10, 1040.11, and Meets Class 1 Laser Safety Requirements IEC 60825-1.
Emission	FCC Part 15, Class B, EN 55022 Class B, CISPR 22, EIA/JESD22-A114-B, MIL-STD 883C Method 3015.7
Immunity	IEC 61000-4-2

Certifications

All transceivers are Class 1 Laser products per FDA/CDRH and IEC-60825 standards. They must be operated under specified operating conditions.

This product complies with 21 CFR 1040.10 and 1040.11 Meets Class 1 Laser Safety Requirements IEC 60825-1.

