



- SFP+ with 25 Gb/s data rate
- Tx/Rx Wavelength: 850 nm. / 850 nm
- Media Type: Multi-Mode Fiber (MMF)
- Optical Budget: 2.6 dB
- Distance: Standard 100m
- Data Rate: 8.5-25.78 Gbps
- Extended 0-70 °C Temperature Ranges
- Compliant to MSA SFP+ Specification SFF-8431
- CE and RoHS compliant

Overview

The SFP-MOM4850E-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 2.6 dB, which in most cases is enough to reach 100m over OM4 multimode fiber, or 70 m over OM3 multimode fiber. SFP-MOM4850E-25G uses a top quality VSCSEL (Vertical Cavity Surface Emitting Laser) transmitter and 25Gb/s PIN photodiode receiver. SFP-MOM4850E-25G supports DDM/DOM optical diagnostics that provide real-time diagnostic information about the present operating conditions. The SFP-MOM4850E-25G transceiver operates in the extended 0°C – +70°C temperature range and has a dual LC interface. SFP-MOM4850E-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-MOM4850E-25G transceiver is CE/RoHS certified and is compliant with product safety standards. SFP-MOM4850E-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.



SPECIFICATIONS

850 25 Gbps SFP+ Transceiver

SFP-MOM4850E-25G

Electrical Specification

Absolute Maximum Ratings

Parameters	Symbol	Min	Typ	Max	Units	Notes
Storage Temperature Range	T_s	- 40	-	+ 85	°C	-
Optical Budget	-	2.6	-	-	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	-	-	-	1.0	W	-
Power Supply Current	I_{CC}	-	-	300	mA	-
Baud Rate	BR	8.5	-	28.1	Gb/s	-
Transmission Distance (OM4)	TD	-	100	-	m	70 m (OM3)

Transmitter Characteristics

Parameters	Symbol	Min	Typ	Max	Units	Notes
Center Wavelength	λ_{DC}	840	850	860	nm	-
Average Optical Power	P_{out}	-8.4	-	2.4	dBm	-
Spectral Width (RMS)	-	-	-	0.6	nm	-
Extinction Ratio	ER	2	-	-	dB	-
Relative Intensity Noise	-	-	-128	-	dB/Hz	-
Input differential impedance	Z_{IN}	-	-	100	Ohm	-
Single ended data input swing	-	100	-	700	mV	-
Transmit Disable Voltage	-	$V_{CC}-1.3$	-	V_{CC}	V	-
Transmit Enable Voltage	TD	V_{EE}	-	$V_{EE}+0.8$	V	-

Notes

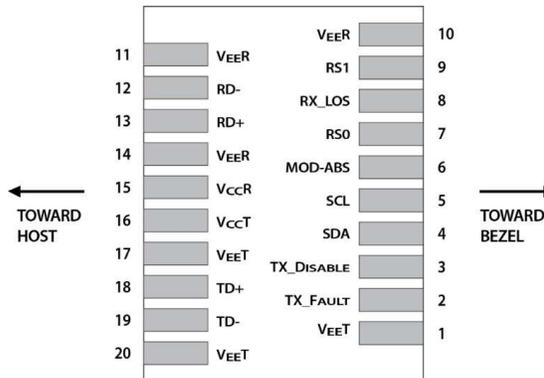
Receiver Characteristics

Parameters	Symbol	Min	Typ	Max	Units	Notes
Center Wavelength	λ	840	850	860	nm	-
Receiver Sensitivity (Average)	P_{min}	-	-11.0	-	dBm	-
Receiver Overload	P_{max}	-	2.4	-	dBm	-
LOS Assert	LOS_A	-30	-	-	dBm	-
LOS De-Assert	LOS_D	--	-	-13	dBm	-
LOS Hysteresis	LOS_H	0.5	-	-	dB	-
Differential data output swing	-	300	-	850	mV	-
LOS Fault	LOS_F	-	-	$V_{CC}-1.3$	V	-
LOS Normal	-	$V_{CC}HOST$	-	V_{EE}	V	-

Notes



Device Characteristics	
Parameter	
Media Type	Multi-Mode Fiber (MMF)
Supported Applications	25G Ethernet (25.78 Gbps), 10G Ethernet (10.31 Gbps)
Modulation Format	NRZ
DDM/DOM	Supported
CDR (Clock Data Recovery)	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 (LVTTL)	No Function Implemented
8	RX_LOS	Receiver Loss of Signal Indication	3
9	RS1	TX Rate Select (LVTTL)	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	VCC T	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

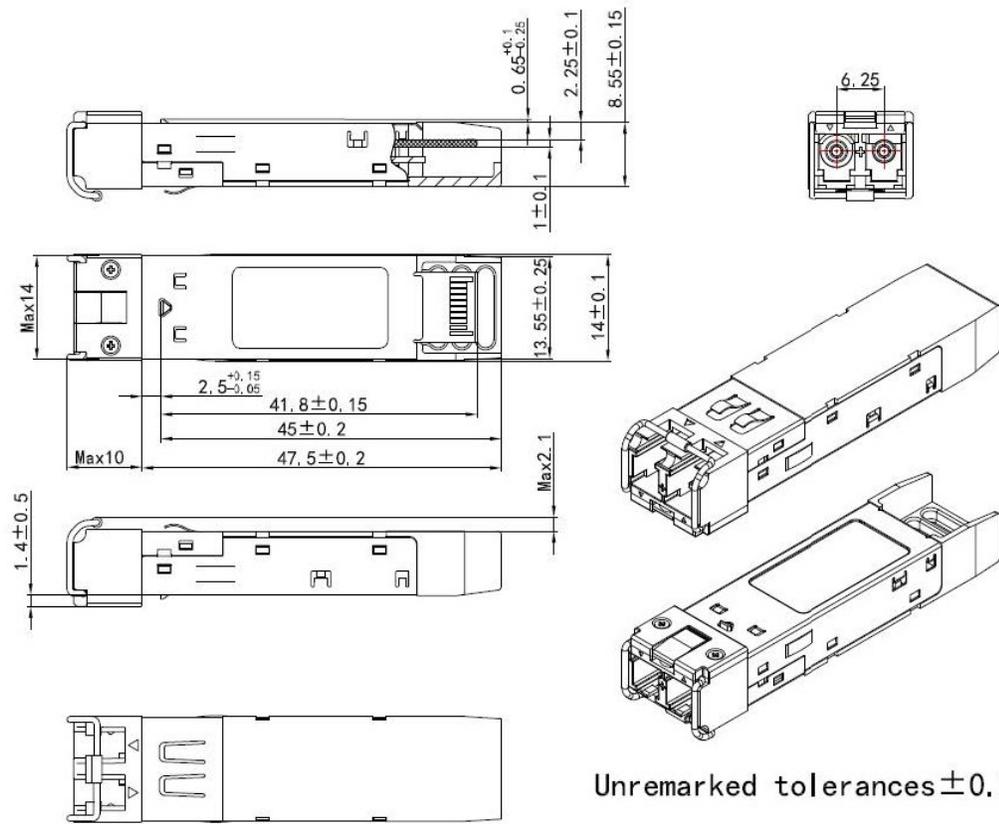
- Notes**
- ¹Module ground pins GND should be isolated from the module case.
 - ²Tx_Fault is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on Host board.
 - ³LOS is open collector output. Should be pulled up with 4.7k–10kohms on host board to a voltage between 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.



SPECIFICATIONS

850 25 Gbps SFP+ Transceiver

SFP-MOM4850E-25G



SFP Module Outline Drawing

Unremarked tolerances ± 0.2 mm



STANDARDS & CERTIFICATIONS

850 25 Gbps SFP+ Transceiver

SFP-MOM4850E-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.

