25G SFP28 Active Optical Cable

TSSP-8525G-xxxC

Features



- Hot-pluggable SFP28 form-factor connectors
- 850nm VCSEL laser and PIN photo-detector
- Internal CDR circuits on both receiver and
- transmitter channels
- Compliant with SFP28 MSA and IEEE 802.3by 25GBASE-SR
- Data rate up to 25.78Gbps
- 3.3V power supply voltage
- Maximum link length of 70m on OM3 MMF and 100m on OM4 MMF
- RoHS compliant

Applications

- 25GBASE SR Ethernet
- Infiniband transmission

Description

T&S SSP-8525G-XXXC Active Optical Cables are direct-attach fiber assemblies with SFP28 connectors. They are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. The module is a Single-Channel, Pluggable, Fiber-Optic SFP28 for 25 Gigabit Ethernet and Infiniband EDR Applications.

This module is designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 20 contact edge type connector.

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Absolute maximum ratings

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	VCC	-0.5	+3.6	V
Storage Temperature	Tc	-40	+85	°C
Relative Humidity	RH	0	85	%

Recommended operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	VCC	3.15	3.3	3.45	V
Supply current per end	Icc	-	-	290	mA
Operating Case Temperature (Standard)	Tca	0	-	70	°C
Operating Case Temperature (Industrial)	Tca	-40	-	85	°C
Baud Rate Per Lane	DR	-	25.78125	-	Gbps

Notes:

1. Supply current is shared between VCCTX and VCCRX.

2. In-rush is defined as current level above steady state current requirements.

Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Center wavelength	λc	840	850	860	nm
Differential Input Impedance	Zin	90	100	110	Ohm
Differential Input Voltage	Vin	300	-	1100	mVp-p
Center wavelength	λc	840	850	860	nm

Receiver Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Center wavelength	λc	840	850	860	nm
Differential Output Impedance	Zout	90	100	110	Ohm
Differential Output Voltage	Vout	500	-	800	mVp-p
Bit Error Rate	BER	-	-	10-12	-

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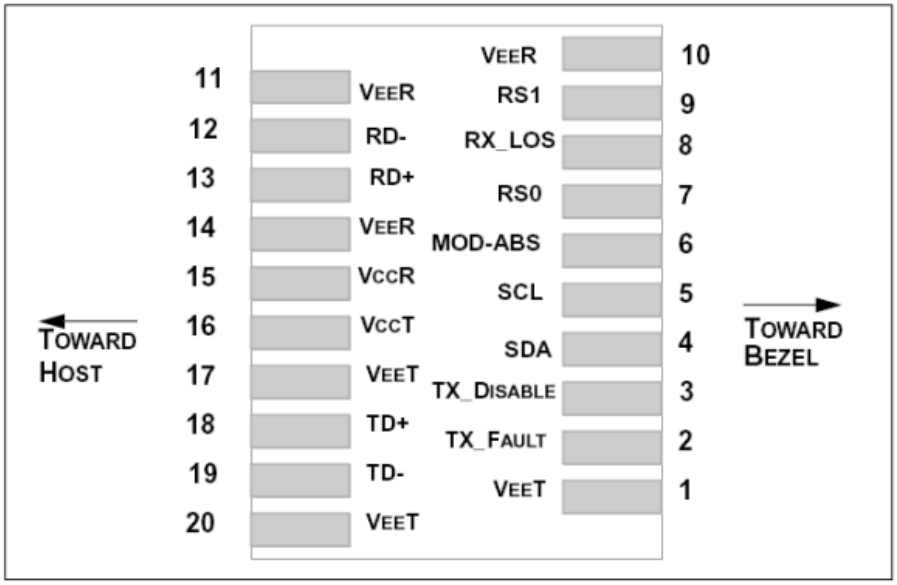
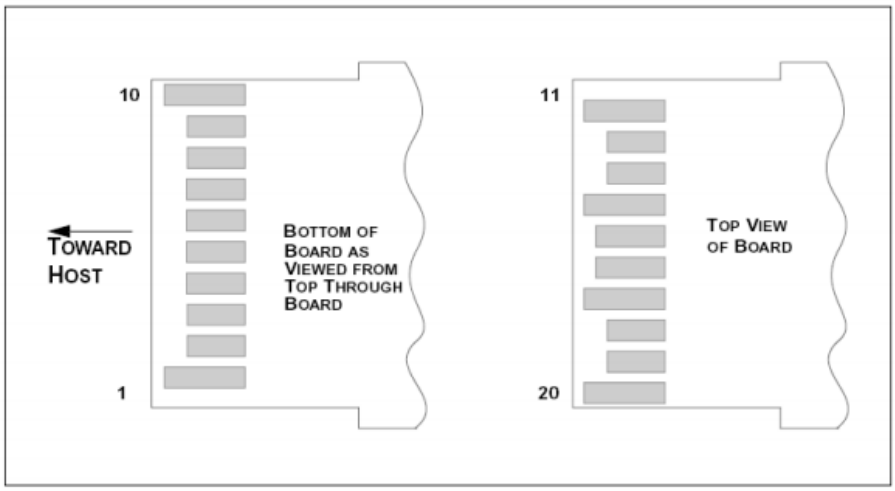
Electrical Pad Layout





Pin definition

Pin	Symbol	Name/Description
1	VEET [1]	Transmitter Ground
2	Tx_FAULT [2]	Transmitter Fault
3	Tx_DIS [3]	Transmitter Disable. Laser output disabled on high or open
4	SDA [2]	2-wire Serial Interface Data Line
5	SCL [2]	2-wire Serial Interface Clock Line
6	MOD_ABS [4]	Module Absent. Grounded within the module
7	RS0 [5]	Rate Select 0

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8	RX_LOS [2]	Loss of Signal indication. Logic 0 indicates normal operation
9	RS1 [5]	Rate Select 1
10	VEER [1]	Receiver Ground
11	VEER [1]	Receiver Ground
12	RD-	Receiver Inverted DATA out. AC Coupled
13	RD+	Receiver DATA out. AC Coupled
14	VEER [1]	Receiver Ground
15	VCCR	Receiver Power Supply
16	VCCT	Transmitter Power Supply
17	VEET [1]	Transmitter Ground
18	TD+	Transmitter DATA in. AC Coupled
19	TD-	Transmitter Inverted DATA in. AC Coupled
20	VEET [1]	Transmitter Ground

Notes:

[1] Module circuit ground is isolated from module chassis ground within the module.

[2] Should be pulled up with 4.7k – 10k ohms on host board to a voltage between 3.15Vand 3.6V.

[3] Tx_Disable is an input contact with a 4.7 kΩ to 10 kΩ pullup to VccT inside the module.

[4] Mod_ABS is connected to VeeT or VeeR in the SFP28 module. The host may pull this contact up to VCC _Host with a resistor in the range 4.7 kΩ to10 kΩ.Mod_ABS is asserted “High” when the SFP28 module is physically absent from a host slot.

[5] RS0 and RS1 are module inputs and are pulled low to VeeT with > 30 kΩ resistors in the module.

Ordering information

Part Number	Product Description
TSSP-8525G-xxxC	SFP28 25G AOC 0°C ~ +70°C
XXX :001~070,1~70 Length in meters on OM3 MMF XXX :001~100,1~100 Length in meters on OM4 MMF	

Important Notice

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