10G SFP+ Active Optical Cables

Features

Electrical interface compliant to SFF-8431

850nm VCSEL laser and PIN photo-detector

Maximum link length of 150m on OM2 MMF and 300m on OM3 MMF

Digital diagnostics functions are available via the I2C interface

RoHS compliant

Hot Pluggable

Applications

10Gigabit Ethernet

InfiniBand QDR, SDR, DDR

Servers, switches, storage and host card adapters

Absolute Maximum Rating

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TST	-20	85	℃
Relative Humidity	RH	0	85	%
Case Operating Temperature	TOPC	0	70	℃
Supply Voltage	VCC	-0.3	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case temperature	TA	0		+70	℃
Supply Voltage	VCC	3.13	3.3	3.47	V
Supply current	Icc			150	mA
Channel Data Rate	Dr		10.3125		Gbps

Transmitter

Measured condition：Channel Data Rate 10.3125Gbps, VRCCR=3.3V, PRBS31, Case Operating Temperature 0~70℃

Parameter	Symbol	Min	Typical	Max	Unit
Input differential impedance	Zin	90	100	110	Ω
Differential Data Input Swing	Vin PP	200		1600	mV
Transmit Enable Voltage	VEN			0.8	V
Transmit Disable Voltage	VD	2.0			V
Average launch power	PAVG	-6.5	-1		dBm
Extinction Ratio	ER	3.0			dB
Centre Wavelength	λc	840	850	860	nm

Receiver

Measured condition：Channel Data Rate 10.3125Gbps, VRCCR=3.3V, PRBS31, Case Operating Temperature 0~70℃

Parameter	Symbol	Min	Typical	Max	Unit
Center Wavelength	λc	840	850	860	nm
Differential Data Output Swing	Vout PP	370		1600	mV
Receiver Overload	PinMAX	2.5			dBm
Output Differential Impedance	Zout	90	100	110	ohm
LOS Fault	VOH	2.4			V
LOS Normal	VOL			0.4	V

Pin Descriptions
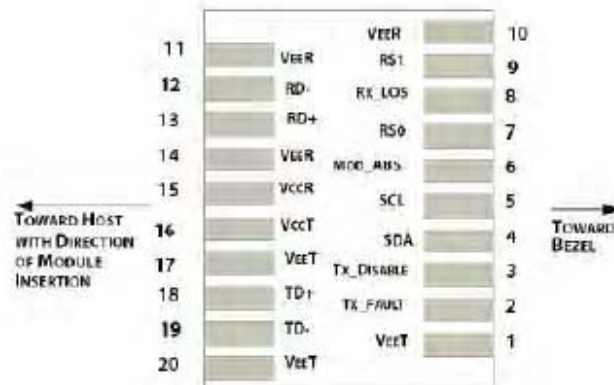
PIN	Name	Function/Description
1	VeeT	Transmitter Ground
2	Tx_Fault	Transmitter Fault - High indicates a fault condition
3	Tx_Disable	Transmitter Disable – High or open disables the transmitter
4	SDA	Two wire serial interface Data Line
5	SCL	Two wire serial interface Clock Line
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module
7	RS0	Rx Rate Select,not used
8	RX_LOS	Loss of Signal indication. Logic 0 indicates normal operation
9	RS1	Tx Rate Select,not used
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Receiver Inverted DATA out
13	RD+	Receiver Non-inverted DATA out
14	VeeR	Receiver Ground
15	VccR	Receiver Power Supply
16	VccT	Transmitter Power Supply
17	VeeT	Transmitter Ground
18	TD+	Transmitter Non-Inverted DATA in
19	TD-	Transmitter Inverted DATA in
20	VeeT	Transmitter Ground

Module Power Supply Tolerance Filtering

Module Compliance Test Board
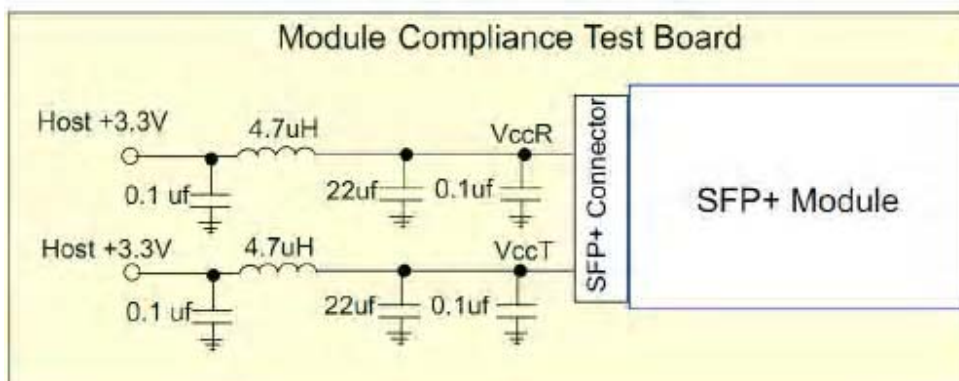
Mechanical Design Diagram
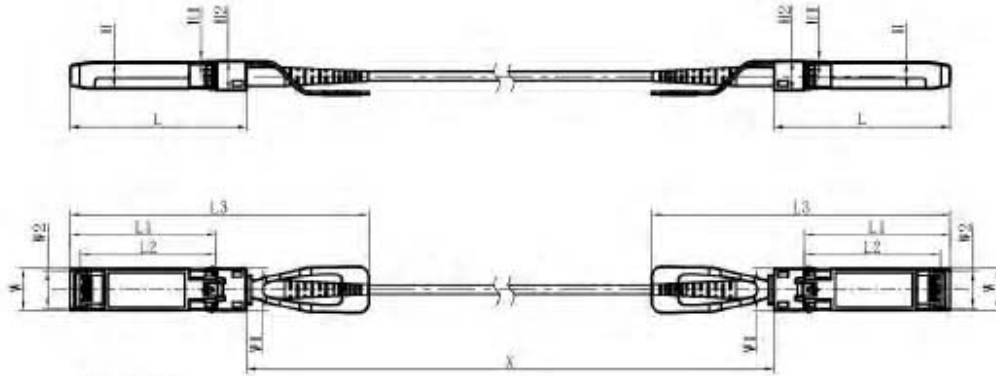
Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	57.75	48.0	44.65	102.5	13.75	14.0	12.25	8.65	0.55	10.4
Typical	57.55	47.8	44.45	101.5	13.65	13.9	12.15	8.55	0.5	10.2
MIN	57.35	47.6	44.25	100.5	13.55	13.8	12.05	8.45	0.45	10.0

Cable Length（Unit: m）	Tolerant（Unit: cm）
＜1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥15.0	+2%/-0

Ordering information

SFP+-SFP+-AOC1M	1 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC1.5M	1.5 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC2M	2 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC3M	3 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC5M	5 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC7M	7 meter 10G SFP+ to SFP+ Active Optical Cable
SFP+-SFP+-AOC10M	10G SFP+ to SFP+ Active Optical Cable up to 300m on OM3 MMF

Notice:

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