

100G QSFP28 Active Optical Cable

FEATURES

- Four-channel full duplex active optical cable
- Multi-rate capability: 10 Gbps to 25.78125 Gbps per channel
- Low power consumption: < 2.5 W per cable end
- Single 3.3 V power supply
- Maximum link length of 70m on OM3 or 100m on OM4
- Built-in digital diagnostic functions, compliant with SFF-8636
- Hot pluggable
- Commercial operating case temperature range: 0 to 70°C
- RoHS compliant



APPLICATION

- 10/25/40/100G Ethernet

PRODUCT SELECTION

Parameter	Length (m)
2368650-1	1
2368650-2	2
2368650-3	3
2368650-4	5
2368650-5	10
2368650-6	15
2368650-7	20
2368650-8	30
Note: For availability of additional cable lengths, please contact TE.	

1. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	Vcc	-0.5	3.6	V
Storage Temperature	Tst	-40	85	°C
Case Operating Temperature	Top	0	70	°C
Relative Humidity (non-condensing)	RH	0	85	%

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typ	Max	Unit	Note
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Power Supply Current	ICC	-	-	750	mA	per cable end
Power Dissipation	P	-	-	2.5	W	per cable end
Bit Rate	BR	-	25.78125	-	Gbps	each channel

3. GENERAL PRODUCT CHARACTERISTICS

Parameter	Value	Notes
Module Form Factor	QSFP28	
Number of Lanes	4 Tx and 4 Rx	
Maximum Aggregate Data Rate	103.125 Gbps	
Maximum Data Rate per Lane	25.781 Gbps	Data rates other than 25.781 Gbps is available through request and customization
Bit Error Ratio, Pre-FEC	5×10^{-5}	Tested with PRBS31. Pre-FEC BER of 10^{-12} supported through request and customization
Standard Cable Lengths	1, 2, 3, 5, 10, 15, 20, 30	Other lengths may be available upon request
Electrical Interface and Pin-out	38-pin edge connector	Pin-out as defined by QSFP28 MSA SFF-8679
Standard Optical Cable Type	Multimode round fiber cable, OFNR and Low Smoke Zero Halogen (LSZH)	OFNP rated cable may be available upon request
Maximum Power Consumption per Cable End	2.5 W	
Management Interface	Serial, I2C-based, 400kHz maximum frequency	As defined by the QSFP28 MSA SFF-8636

4. ELECTRICAL CHARACTERISTICS

Low speed electrical specifications are compliant with SFF-8679 clause 5.

High speed electrical specifications are compliant with SFF-8679 clause 5, OIF CEI-VSR-28G/IEEE CAUI-4 over operating case temperature 0 to 70°C and VCC 3.3 ± 5% Volts.

Parameter	Min	Max	Unit	Note
Module Electrical Input				
Overload Differential Voltage pk-pk	900	-	mV	
Common Mode Voltage (Vcm)	-350	2850	mV	1
Differential Termination Resistance Mismatch	-	10	%	
Differential Return Loss (SDD11)	CEI-VSR-28G Equation 13-19		dB	
Common Mode to Differential conversion and Differential to Common Mode conversion (SDC11, SCD11)	CEI-VSR-28G Equation 13-20		dB	
Stressed Input Test	CEI-VSR-28G Section 13.3.11.2.1			
Module Electrical Output				
Differential Voltage, pk-pk	-	900	mV	
Common Mode Voltage (Vcm)	-350	2850	mV	1
Common Mode Noise, RMS	-	17.5	mV	
Differential Termination Resistance Mismatch (at 1 MHz)	-	10	%	
Differential Return Loss (SDD22)	CEI-VSR-28G Equation 13-19		dB	
Common Mode to Differential conversion and Differential to Common Mode Conversion (SDC22, SCD22)	CEI-VSR-28G Equation 13-21		dB	
Common Mode Return Loss (SCC22) – from 250 MHz to 30 GHz	-	-2	dB	
Transition Time, 20 to 80%	9.5	-	ps	
Vertical Eye Closure (VEC)	-	5.5	dB	
Eye Width at 10-15 probability (EW15)	0.57	-	UI	
Eye Height at 10-15 probability (EH15)	228	-	mV	
Notes: 1. Vcm is generated by the host. Specification includes effects of ground offset voltage.				

5. PIN ASSIGNMENT

Pin assignment is compliant with SFF-8679.

6. MEMORY MAP

The memory map is compatible with SFF-8636, and customization can be supported.

7. MECHANICAL SPECIFICATIONS

Unit: mm

