**QSFP56-200GB-SR4-APC-C-OPC**

Cisco® Compatible TAA 200GBase-SR4 QSFP56 Transceiver (MMF, 850nm, 100m, APC MPO, DOM)

Features

- Excellent ESD Protection
- Supports SFF-8636 Management Interface
- Metal with Lower EMI
- Multi-mode Fiber
- MPO-12 APC Connector
- 3.3V Power Supply
- Operating Temperature: 0 to 70 Celsius
- Hot Pluggable QSFP56 Form Factor
- 4 channels 850nm VCSEL array
- RoHS Compliant and Lead-Free
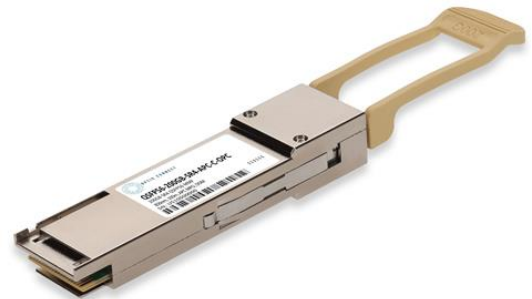
Applications:

- 200GBase Ethernet

Product Description

This Cisco® compatible QSFP56 transceiver provides 200GBase-SR4 Fibre Channel throughput up to 100m over multi-mode fiber (MMF) using a wavelength of 850nm via an APC MPO connector. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco® This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	0		3.63	V	
Storage Temperature	T_{stg}	-40		85	ºC	
Relative Humidity	RH	5		85	%	1
Operating Case Temperature	Tc	0		70	ºC	
Bit Error Ratio	BER			2.4E-4		2

Notes:
1. Non-condensing.
2. The typical BER is better than 1E-6 when measured with a transmitter to produce SECQ up to 3dB.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage	Vcc	3.135	3.3	3.465	V	
Module Supply Current	Icc			1600	mA	
Module Power Dissipation	P_D			5	W	
Transmitter						
Differential Data Input Voltage Peak-to-Peak Swing	VIN,pp			900	mV	
Receiver						
Differential Data Output Voltage Peak-to-Peak Swing	VOUT,pp			900	mV	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Signaling Rate Per Lane	Rate		26.5625		GBd	
Modulation Format	MF		PAM4			
Signaling Speed Accuracy	SSA	-100		100	ppm	
Center Wavelength	λ		850		nm	
RMS Spectral Width	Δλ			0.6	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
Average Optical Power	Pavg	-6.5		+4	dBm	
Extinction Ratio	ER	3			dB	
Optical Modulation Amplitude Per Lane	OMA	-4.5		+3	dBm	
Launch Power in OMA Outer Minus TDECQ Per Lane		-5.9			dBm	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ) Per Lane	TDECQ			4.5	dB	
TDECQ – $10*\log_{10}(Ceq)$ Per Lane				4.5	dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Transmitter Transition Time Per Lane				34	ps	
Laser Off Power				-30	dBm	
Encircled Flux	EF		≥86% at 19μm ≤ 30% at 4.5μm			
Receiver						
Signaling Rate Per Lane	Rate		26.5625		GBd	
Modulation Format	MF		PAM4			
Signaling Speed Accuracy	SSA	-100		+100	ppm	
Center Wavelength	λ		850		nm	
Average Receive Power Per Lane	Pavg	-8.4		+4	dBm	
Receive Power Per Lane OMA	Po			3	dBm	
Receiver Reflectance	RL			-12	dB	
Receiver Sensitivity OMA Per Lane	S			Max = (-6.5, SECQ-7.9)	dBm	1
Damage Threshold	THd	5			dBm	

Notes:
1. Receiver sensitivity is informative and defined for a transmitter with a value of SECQ up to 4.5dB.
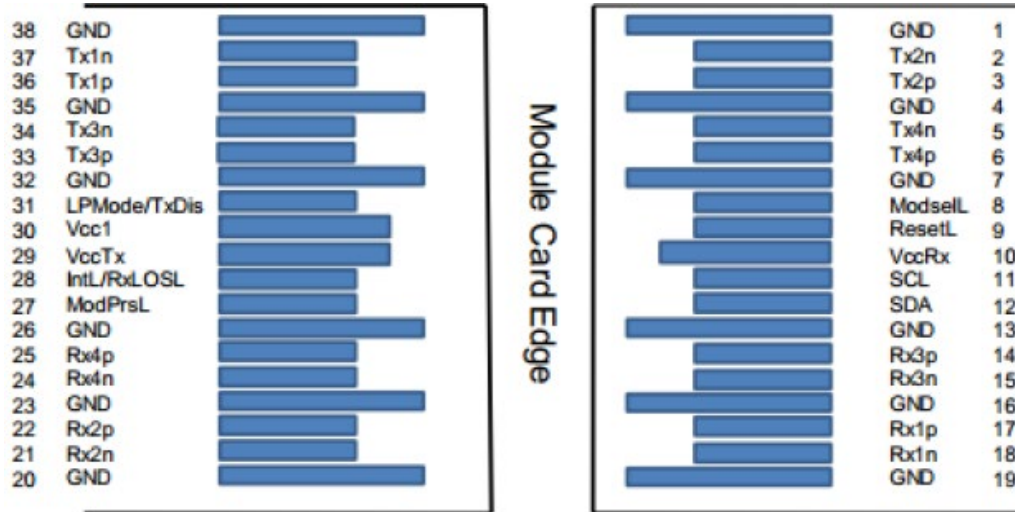
Pin Descriptions

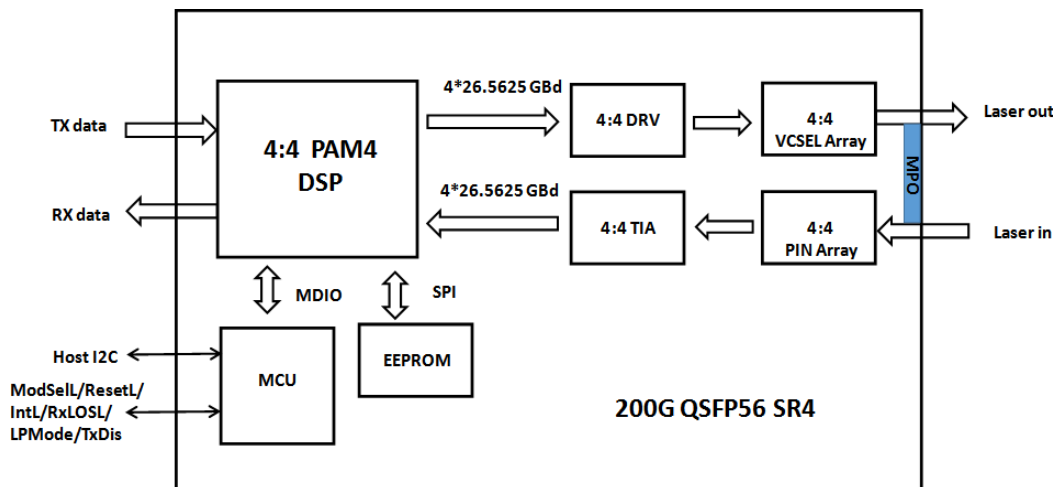| Pin	Symbol	Description	Notes
1	GND	Ground.	1
2	Tx2-	Transmitter Inverted Data Input.	
3	Tx2+	Transmitter Non-Inverted Data Input.	
4	GND	Ground.	1
5	Tx4-	Transmitter Inverted Data Input.	
6	Tx4+	Transmitter Non-Inverted Data Input.	
7	GND	Ground.	
8	ModSelL	Module Select.	
9	ResetL	Module Reset.	
10	VccRx	+3.3V Power Supply Receiver.	2
11	SCL	2-Wire Serial Interface Clock.	
12	SDA	2-Wire Serial Interface Data.	
13	GND	Ground.	
14	Rx3+	Receiver Non-Inverted Data Output.	
15	Rx3-	Receiver Inverted Data Output.	
16	GND	Ground.	1
17	Rx1+	Receiver Non-Inverted Data Output.	
18	Rx1-	Receiver Inverted Data Output.	1
19	GND	Ground.	1
20	GND	Ground.	
21	Rx2-	Receiver Inverted Data Output.	
22	Rx2+	Receiver Non-Inverted Data Output.	
23	GND	Ground.	
24	Rx4-	Receiver Inverted Data Output.	
25	Rx4+	Receiver Non-Inverted Data Output.	
26	GND	Ground.	1
27	ModPrsL	Module Present.	
28	IntL/RxLOSL	Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636).	
29	VccTx	+3.3V Power Supply Transmitter.	2
30	Vcc1	+3.3V Power Supply.	2
31	LPMode/TxDis	Low-Power Mode. Optionally configurable as TxDis via the management interface (SFF-8636).	
32	GND	Ground.	1
33	Tx3+	Transmitter Non-Inverted Data Input.	
34	Tx3-	Transmitter Inverted Data Input.	
35	GND	Ground.	1
36	Tx1+	Transmitter Non-Inverted Data Input.	
37	Tx1-	Transmitter Inverted Data Input.	
38	GND	Ground.	1

Notes:

1. GND is the symbol for signal and supply (power) common for the module. All are common within the module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. VccRx, Vcc1, and VccTx are applied concurrently and may be internally connected within the module in any combination.

Pin-Out Definitions

38	GND			GND	1
37	Tx1n			Tx2n	2
36	Tx1p			Tx2p	3
35	GND			GND	4
34	Tx3n			Tx4n	5
33	Tx3p			Tx4p	6
32	GND			GND	7
31	LPMode/TxDis			ModSelL	8
30	Vcc1			ResetL	9
29	VccTx			VccRx	10
28	IntL/RxLOSL			SCL	11
27	ModPrsL			SDA	12
26	GND			GND	13
25	Rx4p			Rx3p	14
24	Rx4n			Rx3n	15
23	GND			GND	16
22	Rx2p			Rx1p	17
21	Rx2n			Rx1n	18
20	GND			GND	19

Module Card Edge

Block Diagram of Transceiver

TX data → 4:4 PAM4 DSP → 4*26.5625 GBd → 4:4 DRV → 4:4 VCSEL Array → Laser out (MPO)

RX data ← 4:4 PAM4 DSP ← 4*26.5625 GBd ← 4:4 TIA ← 4:4 PIN Array ← Laser in (MPO)

MDIO — SPI

Host I2C ← MCU — EEPROM

ModSelL/ResetL/ IntL/RxLOSL/ LPMode/TxDis

200G QSFP56 SR4

Transmitter Section: This module converts 4-channel 53.125Gbps electrical data to 4-channel 850nm 53.125Gbps optical signals for 212Gbps optical transmission.
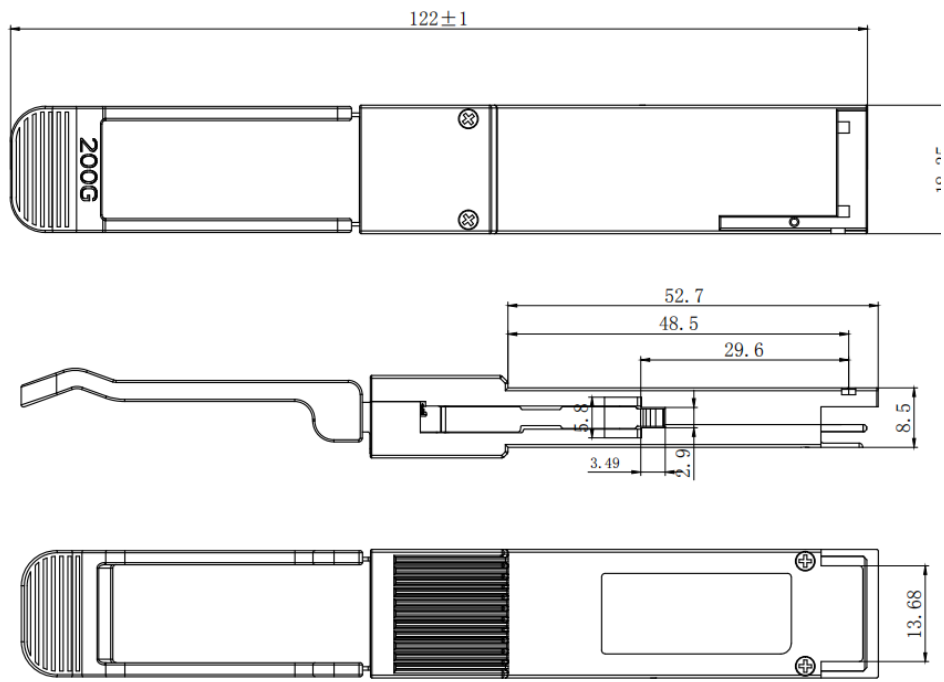
Receiver Section: Similarly, this module optically converts 4-channel 850nm 53.125Gbps optical signals to 4-channel electrical data output on the receiver side.

Recommended Interface Circuit
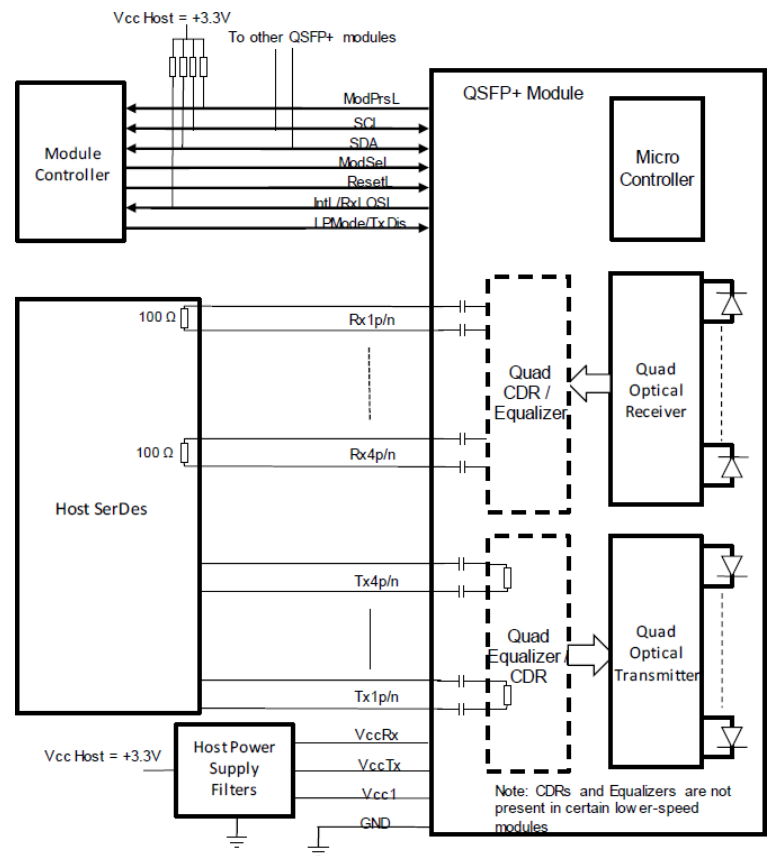
Mechanical Specifications

Unit is millimeter. All dimensions are ±0.1mm unless otherwise specified.

OptioConnect
Innovation for the Future of High-Speed Networking

Who We Are
OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do
At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design
Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team
Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission
To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect
Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
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