QSFP56-200G-DAC-xM

200GBase
Direct Attach Cable
PAM4

Datasheet | product specifications

Class 1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

ESD threshold 1kV for SFI pins and 2kV for all other electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114A (HBM). However, normal ESD precautions are still required during the handling of this module.

Features

- Compatible with IEEE 802.3bj and IEEE 802.3cd
- In accordance with the paging function in the protocol SFF-8636, paging can be selected 00H or 02H in 127 bytes
- Supports aggregate data rates of 200Gbps(PAM4)
- Optimized construction to minimize insertion loss and crosstalk
- Backward compatible with existing QSFP+ connectors and cages
- Pull-to-release slide latch design
- 26AWG through 30AWG cable
- Straight and break out assembly configurations available
- Customized cable braid termination limits EMI radiation
- Customizable EEPROM mapping for cable signature

Product may differ from the picture

Applications

- Switches,servers and routers
- Data Center networks
- Storage area networks
- High performance computing
- Telecommunication and wireless infrastructure
- Medical diagnostics and networking
- Test and measurement equipment

Industry Standards

- 200G Ethernet(IEEE 802.3cd)
- InfiniBand HDR

Overview

Part Number	Cable AWG	Length
QSFP56-200G-DAC-1M	30	1m
QSFP56-200G-DAC-2M	26/30	2m
QSFP56-200G-DAC-3M	26	3m

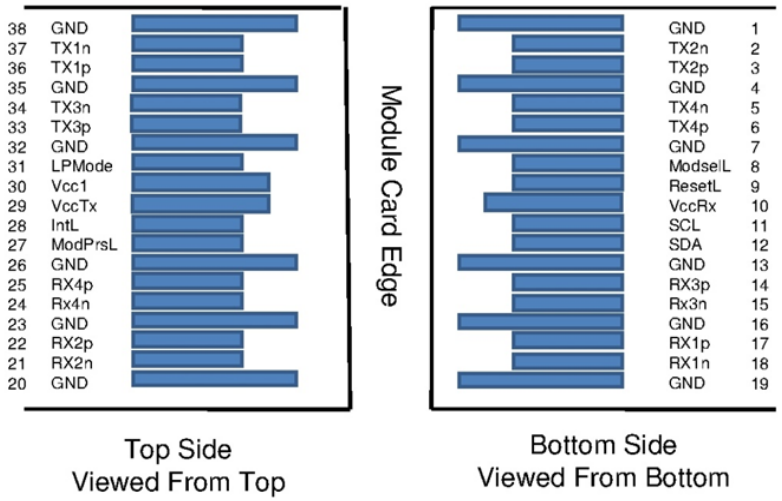
Ordering Information

Part Number	Product Description
QSFP56-200G-DAC-xM	xm 200GBase QSFP56 Passive DAC

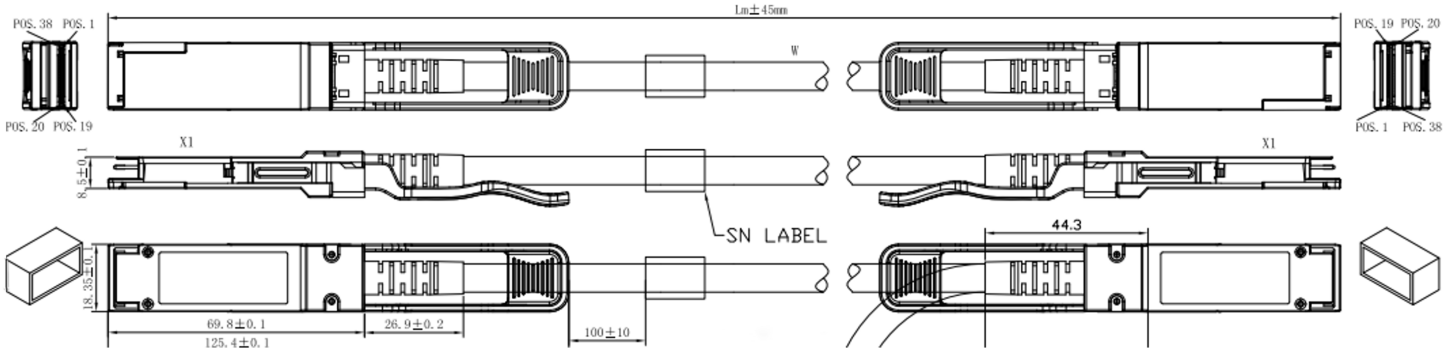
Nexgen A/S
Gydevang 2A, 3450 Allerød - Denmark
+45 (0)32 72 66 76

PIN Description

PIN	Symbol	Name - Description	Logic	PIN	Symbol	Name - Description	Logic
1	GND	Ground			GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	CML-I	21	Rx2n	Receiver Inverted Data Output	CML-O
3	Tx2p	Transmitter Non-Inverted Data Input	CML-I	22	Rx2p	Receiver Non-Inverted Data Output	CML-O
4	GND	Ground		23	GND	Ground	
5	Tx4n	Transmitter Inverted Data Input	CML-I	24	Rx4n	Receiver Inverted Data Output	CML-O
6	Tx4p	Transmitter Non-Inverted Data Input	CML-I	25	Rx4p	Receiver Non-Inverted Data Output	CML-O
7	GND	Ground		26	GND	Ground	
8	ModSelL	Module Select	LVTTL-I	27	ModPrsL	Module Present	LVTTL-O
9	ResetL	Module Reset	LVTTL-I	28	IntL	Interrupt	LVTTL-O
10	Vcc Rx	+3.3V Power Supply Receiver		29	Vcc Tx	+3.3V Power supply transmitter	
11	SCL	2-wire serial interface clock	LVCMOS- I/O	30	Vcc1	+3.3V Power supply	
12	SDA	2-wire serial interface data	LVCMOS- I/O	31	LPMode	Low Power Mode	LVTTL-I
13	GND	Ground		32	GND	Ground	
14	Rx3p	Receiver Non-Inverted Data Output	CML-O	33	Tx3p	Transmitter Non-Inverted Data Input	CML-I
15	Rx3n	Receiver Inverted Data Output	CML-O	34	Tx3n	Transmitter Inverted Data Input	CML-I
16	GND	Ground		35	GND	Ground	
17	Rx1p	Receiver Non-Inverted Data Output	CML-O	36	Tx1p	Transmitter Non-Inverted Data Input	CML-I
18	Rx1n	Receiver Inverted Data Output	CML-O	37	Tx1n	Transmitter Inverted Data Input	CML-I
19	GND	Ground		38	GND	Ground	



Mechanical Dimensions



Nexgen A/S
Gydevang 2A, 3450 Allerød - Denmark
+45 (0)32 72 66 76

High Speed Characteristics

Parameters	Symbol	Min	Typ	Max	Unit
Differential Impedance	TDR	90	100	110	Ω
Insertion Loss (At 13.28 GHz)	SDD21	-17.16	-		dB
Common-mode to common-mode output return loss (At 0.2 to 19 GHz)	SCC11 SCC22	-	-	-2	dB
Differential Return Loss	**SDD11 SDD22**				
At 0.05 to 4.1 GHz		-	-	See 1	dB
At 4.1 to 19 GHz		-	-	See 2	dB
Differential to common-mode return loss	**SCD11 SCD22**				
At 0.01 to 12.89 GHz		-	-	See 3	dB
At 12.89 to 19 GHz		-	-	See 4	dB
Differential to common Mode Conversion Loss	**SCD21-IL**				
At 0.01 to 12.89 GHz		-	-	-10	dB
At 12.89 to 15.7 GHz		-	-	See 5	dB
At 15.7 to 19 GHz		-	-	-6.3	dB

Notes:

1. Reflection Coefficient given by equation SDD11(dB) < -16.5 + 2 × SQRT(f), with f in GHz
2. Reflection Coefficient given by equation SDD11(dB) < -10.66 + 14 × log10(f/5.5), with f in GHz
3. Reflection Coefficient given by equation SCD11(dB) < -22 + (20/25.78)*f, with f in GHz
4. Reflection Coefficient given by equation SCD11(dB) < -15 + (6/25.78)*f, with f in GHz
5. Reflection Coefficient given by equation SCD21(dB) < -27 + (29/22)*f, with f in GHz

Regulatory Compliance

Feature	Test Method	Preformance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(>2000 Volts)
Electromagnetic Interference(EMI)	FCC Class B CISPR22 ITE Class B RH CENELEC EN55022 Class B	Compliant with Standards
RF Immunity(RFI)	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/65/EU and its Amendment Directives (EU) 2015/863	RoHS (EU) 2015/863 compliant
REACH Compliance	REACH Regulation (EC) No 1907/2006	REACH (EC) No 1907/2006 compliant

Revision History

Revision	Doc. #	Date	Author	Description
Version 1.0	-	8/2/2023	SHN	Initial Document