DATA SHEET

Transceivers
400G QSFP56-DD PAM4 FR4
CQS-100A04

Properties

- Protocol 400G Ethernet
- PAM4 Modulation
- Data rate 425 Gbps
- Reach up to 2km
- Wavelengths 1271/1291/1311/1331nm
- LC/PC duplex connector
- Singlemode fiber
- Temp. range 0 ... 70°C
- Link budget at least 4 dB
- Power consumption < 12 W



General data	
Form factor	QSFP56-DD
Product image	Actual product may differ from the images shown. Colours, design, and details can vary.
Protocol	400G Ethernet
Data rate standards	400GBASE-FR4
Media type	Singlemode
Connector	LC/PC duplex
Modulation Format	PAM4
Built-in FEC	No
Management Interface	CMIS 4.0
CDR	Double
Operation temperature	0 °C ... 70 °C
Supply voltage typical	3.13 V ... 3.47 V
Supply Current	< 3636 mA
Power consumption	< 12 W
Digital Diagnostic Management (DDM)	Yes
Laser hazard level	1

Absolute Maximum Ratings	
Max. supply voltage range	-0.5 V ... 3.6 V
Max. Storage Temperature Range	-40 °C ... 85 °C
Max. relative humidity range	5 % ... 95 %

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Transmitter Specifications	
Laser Type	EML
Operating channels	1271.00nm (1264.5 to 1277.5nm)
	1291.00nm (1284.5 to 1297.5nm)
	1311.00nm (1304.5 to 1317.5nm)
	1331.00nm (1324.5 to 1337.5nm)
Grid	None
Average launch power per lane	-3.3 dBm ... 3.5 dBm
Outer Optical Modulation Amplitude (OMA)	-0.3 dBm ... 3.7 dBm
Total optical output power	< 9.5 dBm
Extinction Ratio	> 3.5 dB
Side Mode Suppression	> 30 dB
Supported Data rate	425 Gbps
Transmitter and dispersion eye closure for PAM4 (TDECQ)	< 3.4 dB
OMA - TDECQ	> -1.6 dBm (ER < 4.5 dB)
	> -1.7 dBm (ER > 4.5 dB)

Receiver Specifications	
Receiver Type	PIN
Operating channels	1271.00nm (1264.5 to 1277.5nm)
	1291.00nm (1284.5 to 1297.5nm)
	1311.00nm (1304.5 to 1317.5nm)
	1331.00nm (1324.5 to 1337.5nm)
Receiver Overload	> 3.5 dBm
Receiver Sensitivity (OMA)	< -4.6 dBm
Bit Error Rate at Receiver	2.4E-4
Receiver LOS Hysteresis	> 0.5 dB
Supported Data rate	425 Gbps
Maximum Receiver Power (Damage Threshold)	> 4.5 dBm

Ordering Information Table		
Order Code	Compatibility code explanation	Wavelength code explanation
CQS-100A04xxxx-13	“xxxx” is an alphanumerical string, describing the compatibility. “0000” means no special coding to ensure compatibility with a special switch type.	-13: 1310nm

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