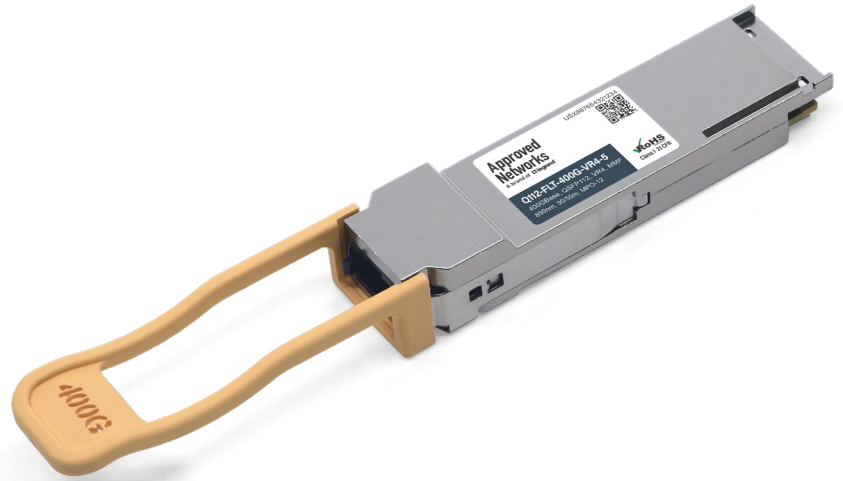


Features

- Hot-pluggable QSFP112 form factor
- Maximum link length of 50m on OM4 fiber with FEC
- +3.3V single power supply
- Power dissipation < 9W
- Operating case temp: 0°C to +70 °C
- MPO-12 APC connector
- RoHS compliant



Applications

- 400GBASE-VR4 per IEEE 802.3db

1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	85	°C
Supply Voltage	VCC	-0.5	3.6	V
Relative Humidity (non-condensing)	RH	5	85	%
Control Input Voltage	VI	-0.3	VCC+0.5	V

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	Tc	°C	0		70
Operating Case Temperature	TOPR	0	-	70	°C
Power Supply Voltage	VCC	3.135	3.3	3.465	V
Maximum Power Dissipation	PD	-	-	9	W
Bit Rate (PAM4)	SRL	-	425	-	Gbps
Operating Distance ¹	-	2	-	50	m

Note 1: 50m for OM4 fiber, 30m for OM3 fiber, with FEC.

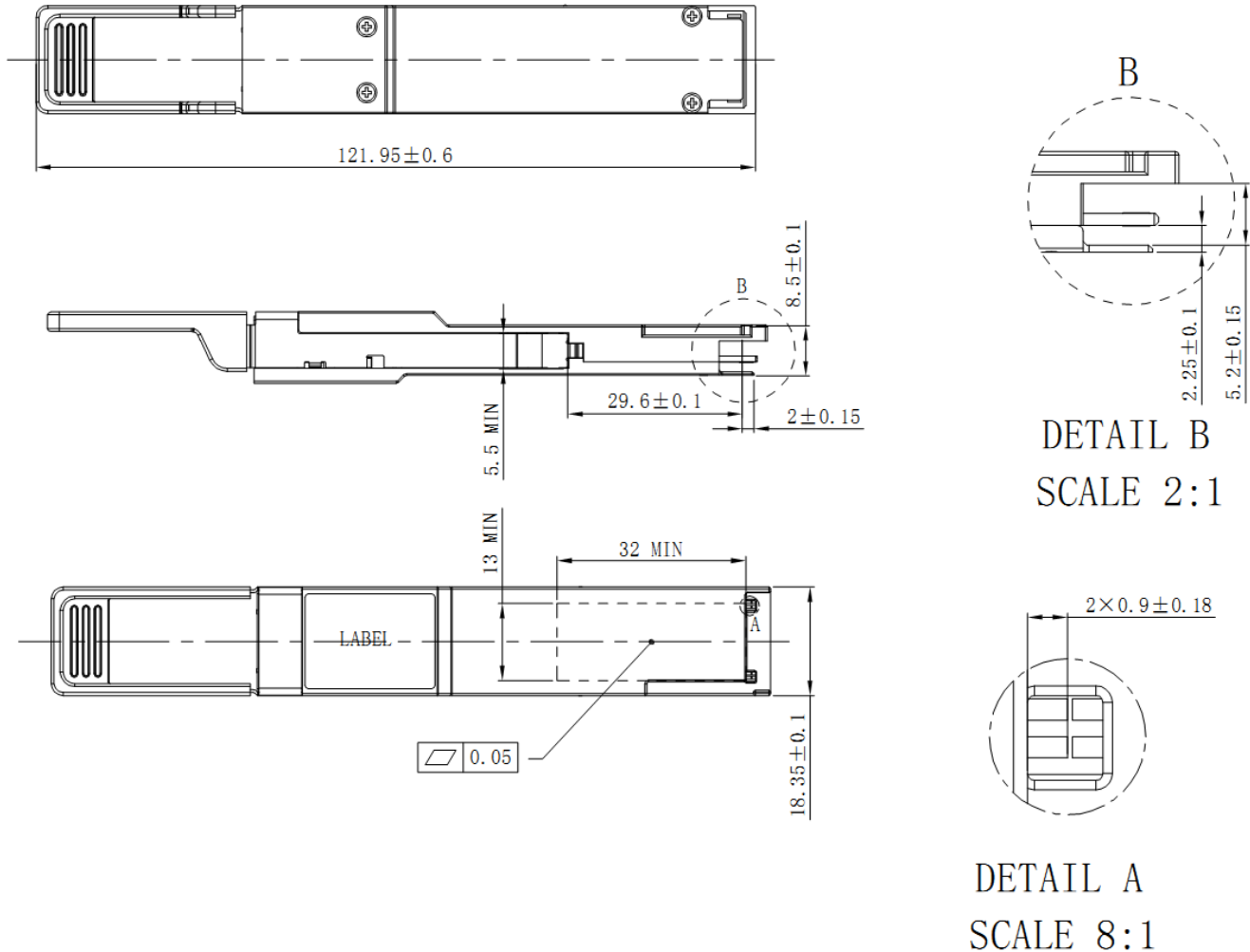
3. Optical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Center wavelength	CW	844	850	863	nm
RMS Spectral Width	SW	-	-	0.6	dBm
Average Launch Power per Lane	AOP	-4.6	-	4	dBm
Outer Optical Modulation Amplitude (OMA _{outer}), each lane for max (TECQ, TDECQ) ≤ 1.8 dB for 1.8 < max (TECQ, TDECQ) ≤ 4.4 dB	OMA	-2.6 -4.4 + max (TECQ, TDECQ)	-	3.5	dBm
Transmitter and dispersion eye closure for PAM4 (TDECQ), each lane	TDECQ	-	-	4.4	dB
Transmitter eye closure for PAM4 (TECQ), each lane	TECQ	-	-	4.4	dBm
Transmitter power excursion, each lane	TPE	-	-	2.3	dB
Optical Extinction Ratio	ER	2.5	-	-	dBm
Transmitter transition time, each lane	Tt	-	-	17	ps
RIN _{14OMA}				-132	dB/Hz
Optical Return Loss Tolerance	ORL			14	dB
Encircled Flux	FLX	>86% at 19 μm <30% at 4.5 μm			
Average Launch Power of OFF Transmitter, per Lane				-30	dBm
Receiver					
Wavelength	W	840	-	948	nm
Damage Threshold		5	-	-	dBm
Average Receive Power per Lane	DT	-6.4	-	4	dBm
Receive power, each lane (OMA _{outer})	RXP _x	-	-	3.5	dBm
Receiver Reflectance	RxOMA	-	-	-15	dB
LOS Hysteresis		0.5	1	-	dB
Receiver sensitivity (OMA _{outer}) for max (TECQ, TDECQ) ≤ 1.8 dB for 1.8 < max (TECQ, TDECQ) ≤ 4.4 dB	RxSen			-4.6 -6.4 + TECQ	dBm

4. Electrical Specification High Speed Signal

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Signaling Rate per Lane	SR	53.125 ± 100 ppm			GBd
Modulation format		PAM4			
Differential peak-to-peak output voltage					
Short mode					
Long mode	-	-	-	600	
845	mV				
Eye height	EH	15	-	-	mV
Vertical eye closure	VEC	-	-	12	dB
Differential termination mismatch	-	-	-	10	%
Transition time	-	8.5	-	-	ps
DC common-mode voltage tolerance	-	-0.35	-	2.85	V
Receiver					
Signaling Rate per Lane	SR	53.125 ± 100 ppm			GBd
Modulation format		PAM4			
Differential pk-pk input Voltage tolerance (TP1a)	-	750	-	-	mV
Differential termination mismatch	-	-	-	10	%
Single-ended voltage tolerance range	-	-0.4	-	3.3	V
DC common-mode voltage tolerance	-	-0.35	-	2.85	V

5. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
MSA	AN-Q400G-FLT-VR4		

7. Contact Information

Tel: 800.590.9535

Web: <http://www.approvednetworks.com>