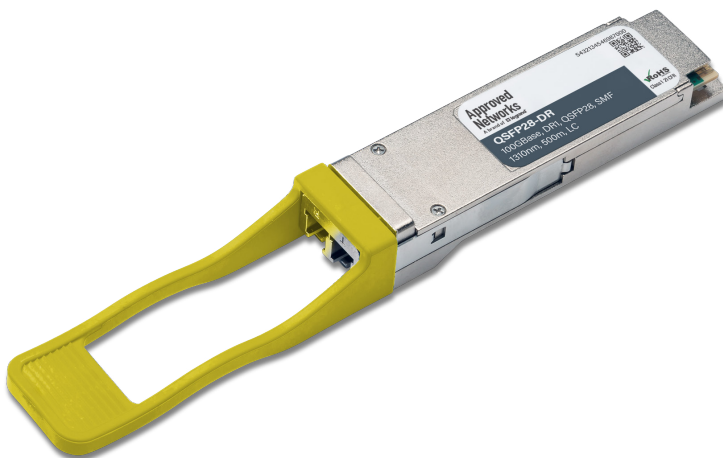


Features

- Compliant with QSFP28 Standard SFF-8636 Rev 2.9
- Compliant with IEEE 802.3cd 100GBASE-DR
- High speed I/O electrical interface (CAUI-4)
- Single 3.3V Supply Voltage
- Maximum power consumption 4.3W
- 0-70 °C Case Operating Temperature
- 1310nm EML laser and PIN Receiver Array
- QSFP28 MSA package with duplex LC connector
- Two Wire Serial Interface with Digital Diagnostic Monitoring
- Complies with EU Directive 2011/65/EU (RoHS compliant)
- Class 1 Laser Product



1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ	Max.	Unit
Storage Temperature	TS	-40	-	+85	°C
Supply Voltage	VCC	-0.3	-	3.6	V
Relative Humidity (non-condensing)	RH	5	-	95	%
Data Input Voltage - Differential	IVDIP-VDINI	-	-	1.0	V
Control Input Voltage	VI	-0.3	-	Vcc+0.5	V
Control Output Current	IO	-20	-	20	mA

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ	Max.	Unit	Notes
Operating Case Temperature	TOPR	0	-	70	°C	
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Instantaneous peak current at hot plug	ICC_IP	-	-	1800	mA	

Sustained peak current at hot plug	ICC_SP	-	-	1485	mA	
Maximum Power Dissipation	PD	-	-	4.3	W	
Maximum Power Dissipation, Low Power Mode	PDLP	-	-	1.5	W	
Signalling Rate	SR	-	53.125	-	GBd	
Control Input Voltage High	VIH	VCC*0.7	-	VCC+0.3	V	
Control Input Voltage Low	VIL	-0.3	-	VCC*0.3	V	
Two Wire Serial Interface Clock Rate	-	-	-	400	kHz	
Power Supply Noise	-	-	-	66	mVpp	10Hz-10MHz
Rx Differential Data Output Load	-	-	100	-	ohms	
Operating Distance	-	2	-	500	m	

3. Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
Wavelength	λ_C	1304.5	1311	1317.5	nm
Side mode suppression ratio	SMSR	30	-	-	dB
Average Optical Launch Power	POUT	-2.9	-	4	dBm
Average Launch Power Tx_Off	POUT_OFF	-	-	-15	dBm
Extinction Ratio	ER	3.5	-	-	dB
Outer Optical Modulation Amplitude	OMA _{outer}	-0.8	-	4.2	dBm
Launch Power in OMA _{outer} minus TDECQ for ER \geq 5dB	OMA _{outer} -TDECQ	-2.2	-	-	dBm
Launch Power in OMA _{outer} minus TDECQ for ER < 5dB	OMA _{outer} -TDECQ	-1.9	-	-	dBm
Transmitter and dispersion eye closure	TDECQ	-	-	3.4	dB
TDECQ-10log ₁₀ (Ceq)		-	-	3.4	dB
Transmitter transition time	TTx	-	-	17	ps
RIN _{15.5OMA}	RIN	-	-	-136	dB/Hz
Optical return loss tolerance	ORLT	-	-	15.5	dB
Transmitter reflectance	TR	-	-	-26	dB

4. Receiver Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
Wavelength	λC	1304.5	1311	1317.5	nm
Damage Threshold		5	-	-	dBm
Average receive power		-5.9	-	4	dBm
Receive power (OMA _{outer})	RP	-	-	4.2	dBm
Receiver reflectance	RR	-	-	-26	dB
Receiver sensitivity (OMA _{outer})	RS	max (-3.9, SECQ-5.3)			dBm
Stressed receiver sensitivity	SRS	-	-	-1.9	dBm
Stressed Receiver Sensitivity Test Conditions:					
Stressed eye closure for PAM4 (SECQ)	SECQ	-	-	3.4	dB
SECQ-10log10(Ceq)	-	-	-	3.4	dB

5. Electrical Specifications

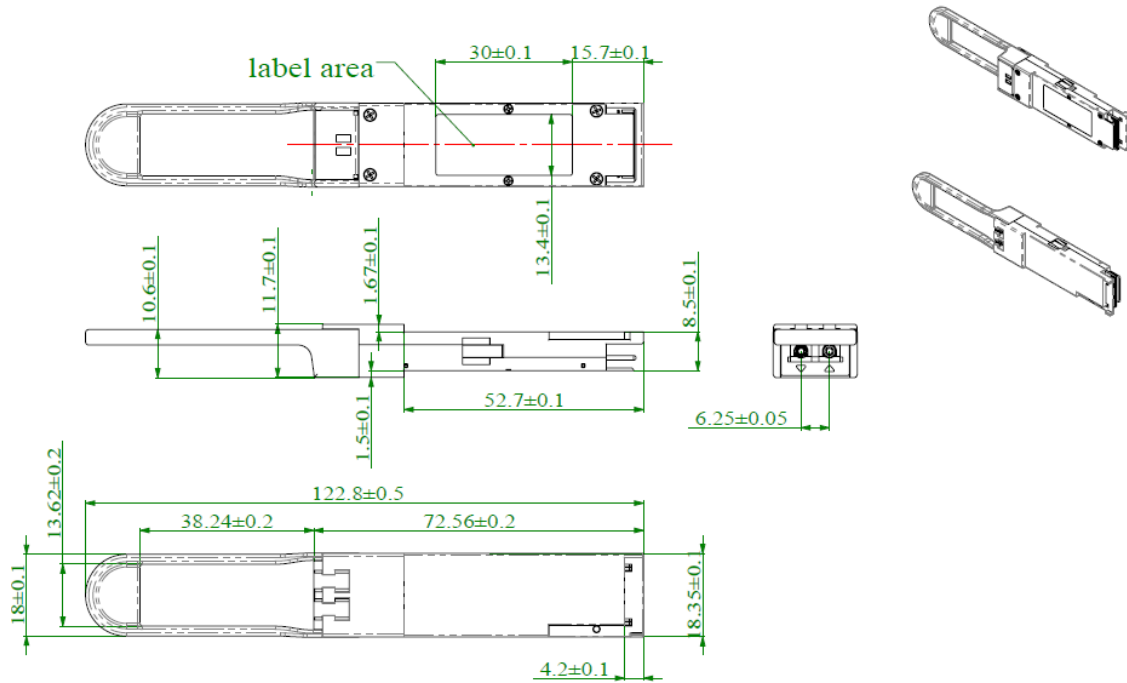
Low-Speed Signal: Compliant to SFF-8679

High-Speed Signal: Compliant to CAUI-4 (IEEE 802.3-2018)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter (Module Input)						
Differential Data Input Amplitude	V _{IN,P-P}	95	-	900	mVpp	Note 1
Differential Termination Mismatch		-	-	10	%	
LPMode, Reset and ModSelL	V _{IL}	-0.3	-	V _{CC} *0.3	V	
	V _{IH}	V _{CC} *0.7	-	V _{CC} +0.3	V	
Receiver (Module Output)						
Differential Data Output Amplitude	V _{OUT,P-P}	250	-	900	mVpp	Note 1
Differential Termination Mismatch		-	-	10	%	
Output Rise/Fall Time, 20%~80%	T _R	9.5	-	-	ps	
ModPrsL and IntL	V _{OL}	0	-	0.4	V	IOL=4mA
	V _{OH}	V _{CC} -0.5	-	V _{CC} +0.3	V	IOL=-4mA

Note 1: Amplitude customization beyond these specs is dependent on validation in customer system

6. 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.

7. Ordering Information

OEM	Part Number	OEM	Part Number
Arista	QSFP-100G-DR-A	Avago	AFCT-89SDDZ-A
Cisco	QSFP-100G-DR-S-A	Juniper	JNP-QSFP-100G-DR-A
Edgecore	ET7402-DR-A	MSA	AN-QSFP28-DR
MSA OnePort	OP-QSFP28-DR1	MSA Champion ONE	100GQSFP28E-DR1

8. Contact Information

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