

## Features

- Supports 103Gbps aggregate bit rate
- Up to 70m transmission on MMF OM3 and 100m transmission on MMF OM4
- Single 3.3V Power Supply and Power dissipation < 2W
- 4 channels 850nm VCSEL array
- 4 channels PIN photo-detector array
- 4x25Gbps retimed electrical interface
- Hot-Pluggable QSFP28 Footprint
- I2C interface with integrated Digital Diagnostic Monitoring
- Operating Case Temperature: 0°C ~70°C

## Applications

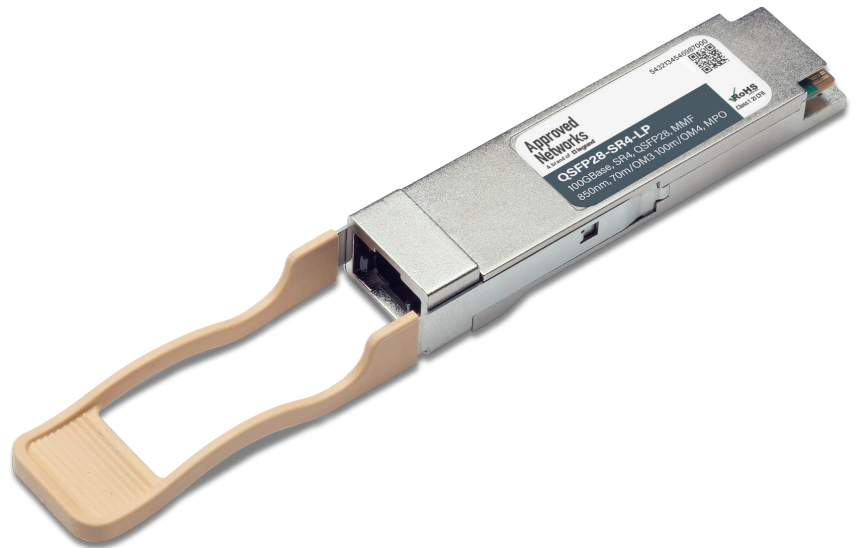
- 100GBASE-SR4 Ethernet

### 1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	TS	-40	+85	°C
Maximum Supply Voltage	VCC	-0.5	3.6	V
Operating Relative Humidity	RH	5	85	%

### 2. Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Units
Operating Case Temperature	Tc	0		70	°C
Power Supply Voltage	Vcc	3.135	3.3	3.465	V
Power Supply Current	ICC			606	mA
Power Dissipation	P			2.0	W



## Standard

- Compliant with QSFP28 MSA Specification and IEEE 802.3bm 100GBASE-SR4
- Class 1 FDA and IEC60825-1 Laser Safety Compliant

### 3. Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Units
<b>Transmitter</b>					
Signaling Speed each Lane	BRAVE		25.78		Gbps
Data Rate Variation		-100		100	Ppm
Center Wavelength	$\lambda C$	840	850	860	nm
Average Launch Power, Each Lane*(note1)	Pout/ lane	-8.4		2.4	dBm
Optical Modulation Amplitude (OMA) each Lane	TXOMA	-6.4		3	dBm
Average launch power of OFF transmitter each lane	Poff			-30	dBm
Extinction Ratio*(Note2), each lane	ER	3			dB
Optical Return Loss Tolerance				12	dB
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}*(Note2)		0.3,0.38,0.45,0.35,0.41,0.5			
<b>Receiver</b>					
Signaling Speed each Lane	BRAVE		25.78		Gbps
Data Rate Variation		-100		100	Ppm
Center Wavelength	$\lambda C$	840	850	860	nm
Average Receive Power each Lane	Rpow	-10.3		2.4	dBm
Damage Threshold, each lane	Pmax	3.4			dBm
Receive Power (OMA) per Lane	RxOMA			3	dBm
LOS Assert, each lane	LOSA	-20			dBm
LOS De-Assert, each lane	LOSD			-12	dBm
LOS Hysteresis, each lane		0.5			dB

**Notes:**

1. Output is coupled into a 50/125 $\mu$ m multi-mode fiber.
2. Filtered, measured with a PRBS 2<sup>31</sup>-1 test pattern @25.78Gbps.

### 4. Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Differential Input amplitude		150		1200	mVpp	
Input Impedance (Differential)	Zin	90	100	110	ohms	Rin > 100 kohms @ DC

Receiver						
Output Amplitude (Differential)	Vout	200		1100	mVpp	
Output Impedance (Differential)	Zin	90	100	110	ohms	
Output Rise/Fall Time	tr/tf			20	ps	10%~90%

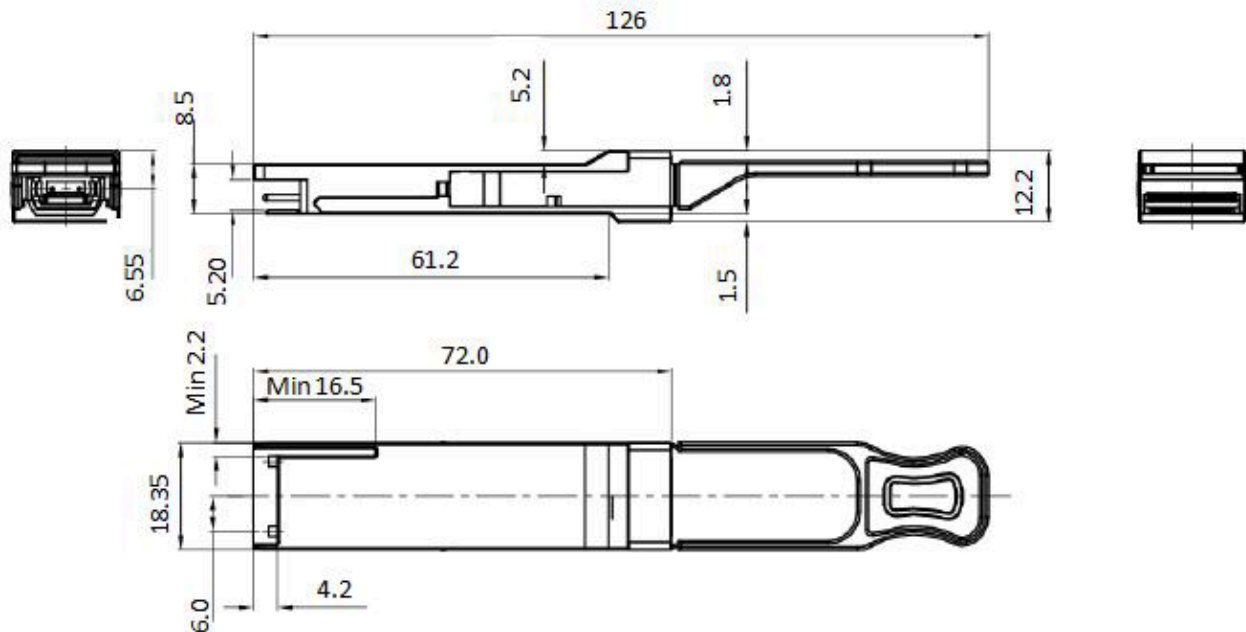
## 5. Digital Diagnostic Functions

100G QSFP28 transceivers provide an enhanced digital diagnostics.

Parameter	Range	Unit	Accuracy	Calibration
Temperature	0 to 70	°C	±3°C	Internal / External
Voltage	3.1 to 3.5	V	±3%	Internal / External
Bias Current, each lane	1 to 15	mA	±10%	Internal / External
TX Power, each lane	-8.4 to 2.4	dBm	±3dB	Internal / External
RX Power, each lane	-10.3 to 2.4	dBm	±3dB	Internal / External

**Note:** The transceivers provide serial ID memory contents and diagnostic information about the present operating conditions by the 2-wire serial interface (SCL, SDA). The diagnostic information with internal calibration or external calibration all are implemented, including received power monitoring, transmitted power monitoring, bias current monitoring, supply voltage monitoring and temperature monitoring.

## 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
Adtran	1445510F1C-LP-A	Gigamon	Q28-502-LP-A
Alcatel-Lucent	3HE10551AA-LP-A	H3C	QSFP100G-SR4-MM850-LP-A
Alcatel-Lucent	3HE11275AA-LP-A	HP	JL274A-LP-A
Allied Telesis	AT-QSFP28-SR4-LP-A	HP	JL309A-LP-A
Arista	QSFP-100G-SR4-LP-A	Infinera	TOM-100G-Q-SR4-LP-A
Arista	QSFP-100G-SR4-AN-LP-A	Intel	E100GQSFP28SRX-LP-A
Avago	AFBR-89CDDZ-LP-A	Ixia	QSFP28-SR4-XCVR-LP-A
Calix	100-04650-LP-A	Juniper	JNP-QSFP-100G-SR4-LP-A
Chelsio	SM100G-SR-LP-A	Juniper	QSFP-100GBASE-SR4-LP-A
Ciena	160-9400-900-LP-A	Juniper	QSFP-100G-SR4-T2-LP-A
Cisco	QSFP-100G-SR4-S-LP-A	Lenovo	7G17A03539-LP-A
Dell	407-BBWV-LP-A	Mellanox	MMA1B00-C100D-LP-A
Dell	Q28-100G-SR4-LP-A	Mellanox	PMA1B00-C100D-LP-A
Edgecore	ET7402-SR4-LP-A	Meraki	MA-QSFP-100G-SR4-LP-A
Extreme Networks	100G-QSFP28-SR4-LP-A	MRV	QSFP28-100GE-SR4-LP-A
Extreme Networks	AA1405005-E6-LP-A	MSA	AN-QSFP28-SR4-LP
F5 Networks	F5-UPG-QSFP28-SR4-LP-A	OnePort	OP-QSFP28-SR4-LP
Finisar	FTLC9551REPM-LP-A	NetApp	X65405-LP-A
Finisar	FTLC9558REPM-LP-A	Palo Alto	PAN-QSFP28-100GBASE-SR4-LP-A
Fortinet	FG-TRAN-QSFP28-SR4-LP-A	Ruckus	E100G-QSFP28-SR4-LP-A

## 8. Contact Information

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