Approved Networks
A brand of legrand

QSFP28-LR1-20-BX91-I

100GBASE-LR1, BiDi, QSFP28, SMF TRANSCEIVER
TX 1291nm / RX 1311nm, 20km REACH, SIMPLEX LC CONNECTOR

Features

- Compliant with industry standards
- 100G-LR1-20 lambda MSA
- Compliant with SFF-8679 MSA hardware specification
- Compliant with SFF-8636
- Compliant with SFF-8661
- EML laser
- PIN receiver
- Up to 20km on 9/125um SMF
- 100ohm differential impedance system
- Operating temperature options:
  Industrial grade temperature -40ºC to 85ºC
- Trouble-free installation and network bring-up
- RoHS Compliant

Applications

- Data Center
- 100 Gigabit Ethernet, telecom

Absolute Maximum Specifications				
Parameter	**Symbol**	**Min**	**Max**	**Unit**
Storage Temperature	TS	-40	85	ºC
Relative Humidity	RH	15	85	%
Supply Voltage	VCC	0	3.6	V
Data input voltage	-	-0.3	3.6	V
Control input voltage	-	-0.3	4	V

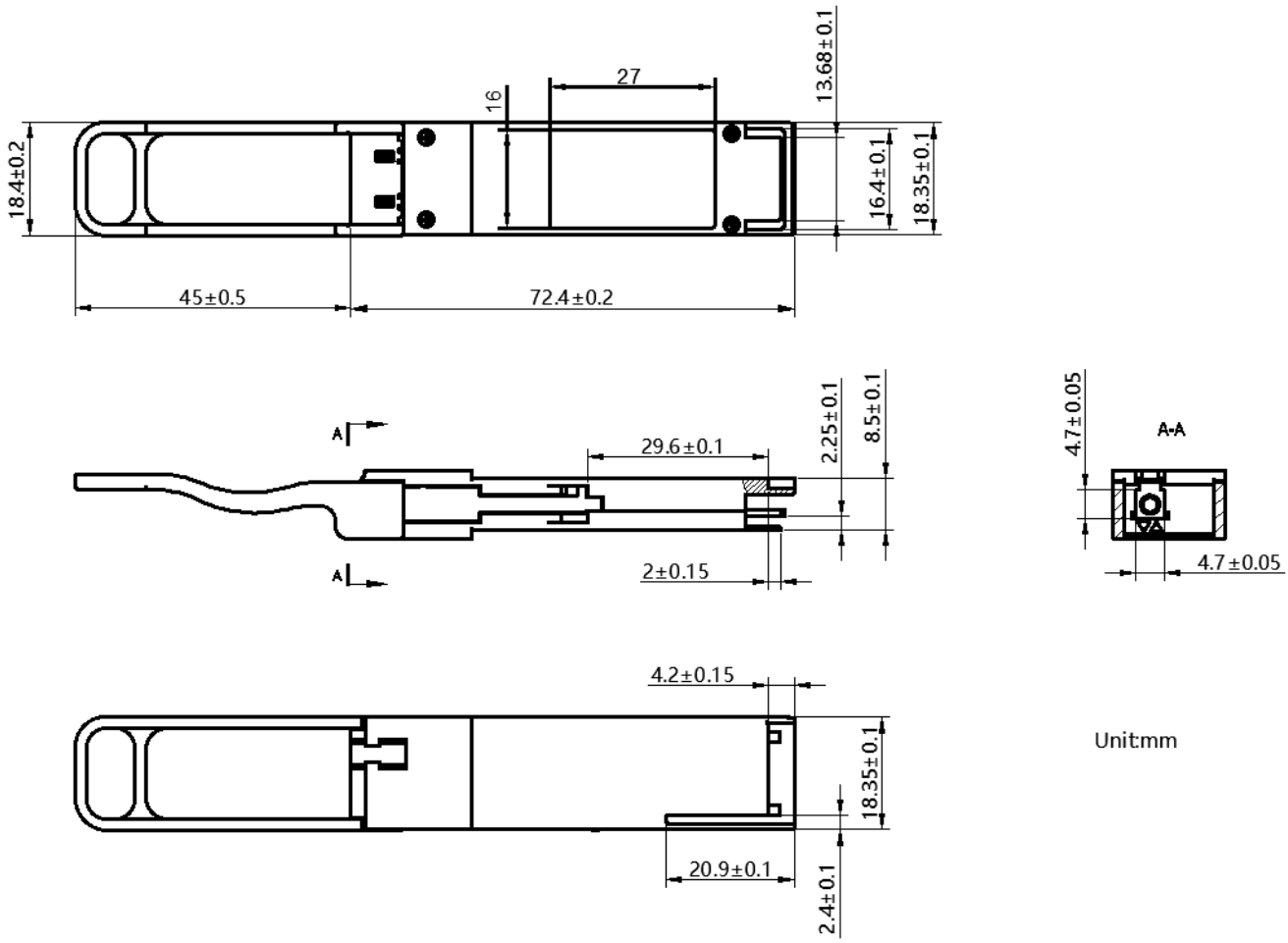
Recommended Operating Conditions					
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**
Operating Case Temperature (Industrial)	TI	-40	-	85	ºC
Supply Voltage	VCC	3.13	3.3	3.47	V
Operating relative humidity	RH	15	-	85	%

Electrical Characteristics						
Transmitter Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Module Supply Current	Icc	-	-	1437	mA	-
Power Dissipation	PD	-	-	4500	mW	-
Input Differential Impedance	Zin	90	100	110	Ω	-
Differential Data Input Swing	Vin, p-p	180	-	900	mVP-P	-
Receiver Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Output Differential Impedance	Zo	90	100	110	Ω	-
Differential Data Output Swing	Vout, p-p	300	-	900	mVP-P	-
Notes:						
1. The maximum current is calculated at the minimum supply voltage.						

Optical Characteristics						
Transmitter Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Launch Optical Power (Average)	Po	-0.2	-	6.6	dBm	1
Launch Optical Power(OMA)	Poma	2.8	-	6.8	dBm	TDECQ < 1.4 dB
		1.4+TDECQ				1.4 dB ≤ TDECQ≤ TDECQ (max)
Extinction Ratio	ER	3.5	-	-	dB	-
Center Wavelength Range	λc	1284.5	1291	1297.5	nm	-
Transmitter and dispersion penalty eye closure for PAM4	TDECQ	-	-	3.6	dB	-
Transmitter eye closure for PAM4	TECQ			3.4	dB	
RIN17.1OMA (max)	RIN	-	-	-136	dB/Hz	
Optical Return Loss Tolerance	ORLT	-	-	15.6	dB	
Pout @TX-Disable Asserted	Poff	-	-	-15	dBm	
Receiver Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Center Wavelength	λc	1304.5	1311	1317.5	nm	-
Receiver Sensitivity (OMA)	RxSENS	-	-	-7.6	dBm	2: TECQ < 1.4 dB
				-9 + TECQ		1.4≤TECQ ≤ 3.6 dB
Receiver reflectance				-26	dB	-
LOS De-Assert	LOSD	-		-12	dBm	-
LOS Assert	LOSA	-18	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	
Notes:						
1. The maximum current is calculated at the minimum supply voltage.						
2. Measured with PRBS31Q test pattern, 53.125GBd, BER<2.4E-4.						

General Specifications						
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Data Rate	BR	53.125±100ppm			GBd	-
Bit Error Rate	BER	-	-	2.4E-4	-	1
Supported Link Length on 9/125um SMF, 53.125 GBd	L	-	20	-	km	2
Notes:						
1. Tested with a PRBS31Q test pattern for 53.125 GBd operation.						
2. Distances are based on FC-PI-6 Rev. 3.1 and IEEE 802.3 standards, with FEC.						

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.

Ordering Information

OEM	Part Number	OEM	Part Number
MSA	AN-QSFP28-LR1-20-BX91-I		

To learn more visit

approvednetworks.com