

## Features

- 1550 nm ITU-T C-band 50 GHz spacing tunable DWDM SFP+ transceiver
- Data rate 9.95-11.3 Gbps
- Supports 80 km link distances
- Negative/zero chirp transmitter with ILMZ (integrated laser Mach Zehnder) TOSA
- APD receiver with limiting amplifier
- Positive power supply lines: 3.3 V
- Operating case temperature range: up to industrial temperature
- Compact size (56.5 mm L x 13.9 mm W x 11.85 mm H)



### 1. Absolute Maximum Ratings

Any stress beyond the maximum ratings can result in permanent damage. The device specifications are guaranteed only under the recommended operating conditions.

Parameter	Symbol	Min.	Max.	Unit	Notes
Supply Voltage	VCCT	0	+3.6	V	+3.3V
Supply Voltage	VCCR	0	+3.6	V	+3.3V
Optical Receiver Input	PIMAX	-	+5	dBm	Average
Operating Case Temperature	Tc	-40	+85	°C	
Storage Temperature	TSTR	-40	+85	°C	
ESD SFI pins	ESD1	-	1	kV	HBM
ESD except for SFI pins	ESD2	-	2	kV	HBM

### 2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ	Max	Unit	Notes
Supply Voltage	VCCT	3.135	3.300	3.465	V	+3.3V
Supply Voltage	VCCR	3.135	3.300	3.465	V	+3.3V
Operating Case Temperature	TC	-40	25	+85	°C	

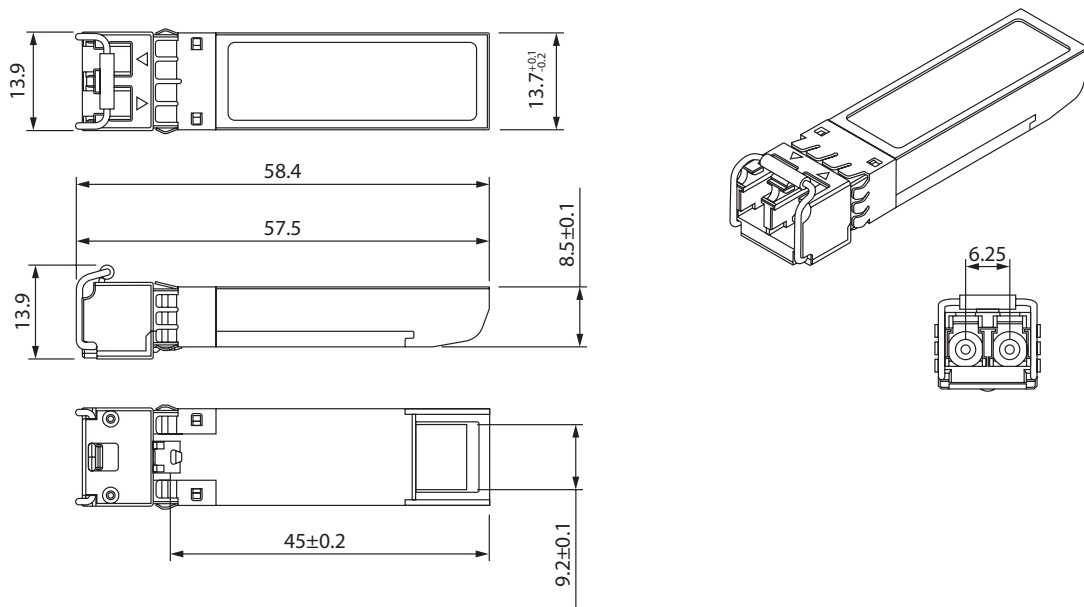
### 3. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
<b>Transmitter</b>						
Data rate		9.95	-	11.3	Gbit/s	NRZ
Frequency range		191.35	-	196.10	THz	50 GHz grid, 96 channels
Frequency accuracy		-2.5	-	2.5	GHz	EOL
Optical transmit power	Po	-1.0	-	3.0	dBm	EOL
Shuttered output power		-	-	-35	dBm	
Optical power stability	$\Delta P_o$	-1.0	-	1.0	dB	All channels, SOL
Side mode suppression	SMSR	35	-	-	dB	$\pm 2.5$ nm, modulated
Spectral width	$\Delta\lambda$		0.3	0.5	nm	-20dB, modulated
Extinction ratio	ER	9.0	-	-	dB	Filtered, 10.709 Gbps
Eye diagram compliance		GR-253, ITU-T G.691				
Mask margin		10	-	-	%	
Tuning speed		-	-	10	sec	warmed-up, from any CH to any other CH
<b>Receiver</b>						
Data rate		9.95	-	11.3	Gbit/s	NRZ
Input operating wavelength		1525	-	1575	nm	
Minimum Receiver Sensitivity (Back to back)	Prmin	-	-	-24	dBm	10.709 Gb/s, 1E-12, OSNR>35dB
Minimum Receiver Sensitivity (-300 to +1400ps/nm)	Prmin	-	-	-21	dBm	
Maximum input power (overload)	Pro	-7	-	-	dBm	
Receiver Reflectance	RL	-	-	-27	dB	
LOS assert			-	-27	dBm	
LOS de-assert		-	-	-25	dBm	
LOS Hysteresis		0.5	-	4.0	dB	
LOS assert time		-	-	100	us	
LOS de-assert time		-	-	100	us	

## 4. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	VCCT	3.135	3.300	3.465	V
	VCCR	3.135	3.300	3.465	V
Supply Current	Icc3			0.73	A
Power Consumption	PDS	-	-	2.3	W

## 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-SFPP-TUNE-80-I	Juniper	10GTESFPP-ZR-JUN
Ciena	XCVR-T80W01-C1	MSA Champion ONE	10GTSFP+MC80-H
Ciena	10GTSFP+MC80-CN	MSA Champion ONE	10GTSFP+MC80-H
Ciena/OnePort	XCVR-T80W01-OP-C1	MSA Champion ONE	OP-SFPP-TUNE-80
		OnePort	OP-SFPP-TUNE-80-I

## 7. Contact Information

Tel: 800.590.9535

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