

SO-SFP-10GE-ZR-Dxxxx

SFP+, 10GBase-ZR, DWDM 100GHz, SM, DDM, 23dB, 80km

OVERVIEW

The SO-SFP-10GE-ZR-Dxxxx series single mode transceiver is a small form factor pluggable module for duplex optical data communications of 10G. The module operates at nominal Dense Wavelength Division Multiplexing (DWDM) wavelengths on the 100GHz grid as defined in the ITU-T 694.1 standard.

PRODUCT FEATURES

- Temperature-Stabilized DWDM EML transmitter
- High sensitivity APD receiver
- Duplex LC connector interface
- Compliant with SFF-8431 MSA
- Compliant with SFF-8432 MSA
- Hot-pluggable SFP footprint
- Up to 80km on 9/125um SMF (G.652)
- Dispersion tolerance from -500 ps/nm to 1600 ps/nm
- Single 3.3V power supply and TTL logic interface
- RoHS6/6 compliant
- Class 1 laser product complies with EN 60825-1
- Operating temperature range:
 - Normal: 0°C to 70°C.
 - Industrial: -40°C to 85°C.
- Power consumption <1.5W

APPLICATIONS

- 10GBASE-ZR/ZW
- 8G/10G FC
- OBSAI rates 6.144 Gb/s, 3.072 Gb/s, 1.536 Gb/s, 0.768Gb/s
- CPRI rates 10.138 Gb/s, 9.830 Gb/s, 7.373Gb/s, 6.144 Gb/s,
- 4.915 Gb/s, 2.458 Gb/s, 1.229 Gb/s, 0.614Gb/s
- Other optical links

ORDERING INFORMATION

Part Number	Description
SO-SFP-10GE-ZR-Dxxxx	SFP+, 10GBase-ZR, DWDM 100GHz, SM, DDM, 23dB, 80km
SO-SFP-10GE-ZR-Dxxxx-I	SFP+, 10GBase-ZR, DWDM 100GHz, SM, DDM, 23dB, 80km, ind. temp.

*xxxx = Refers to notation for frequency data. Please see extended order information on last page for additional information.

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ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	VCC	-0.5	3.6	V

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typ	Max	Unit	
Case Operating Temperature	T_c	SO-SFP-10GE-ZR-Dxxxx	0		+70	°C
		SO-SFP-10GE-ZR-Dxxxx-I	-40		+85	
Power Supply Voltage	Vcc	3.15	3.3	3.45	V	
Power Supply Current	Icc		300	430	mA	
Baud Rate	SO-SFP-10GE-ZR-Dxxxx	0.6		11.1	Gbps	

OPTICAL CHARACTERISTICS – TRANSMITTER

Parameter	Symbol	Min	Typ	Max	Unit	Remarks	
Average Output Power	P_{OUT}	0		+5	dBm	Average, coupled into 9/125um SMF	
Central Wavelength Spacing			100		GHz		
Extinction ratio	E_r	3.5			dB		
Optical Center Wavelength	λ_c	According to ITU-T 694.1			nm		
Spectral Width	$\Delta\lambda$		0.15	0.3	nm		
Side Mode Suppression Ratio	SMSR	30			dB		
Transmitter and Dispersion Penalty@1600ps/nm	TDP			3.5	dB		
TX Jitter	TXj	Per 802.3 ae requirements					
Relative Intensity noise	RIN			-128	dB/Hz	Peak-to-Peak	
Average Launch Power (Tx:OFF)	Poff			-30	dBm		

OPTICAL CHARACTERISTICS – RECEIVER

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Centre Wavelength	λ_c	1480		1580	nm	
Receiver Sensitivity @ 10.3GBps	P_{MIN}			-23	dBm	BER<10 ⁻¹² , PRBS 2 ³¹ -1
Receiver Overload	P_{MAX}	-6			dBm	
LOS De-Assert	LOSD			-24	dBm	
LOS Assert	LOSA	-40			dBm	

EXTENDED ORDERING INFORMATION

Part Number	Frequency (THz)	Center Wavelength (nm)
SO-SFP-10GE-ZR-D9210	192.1	1560.61
SO-SFP-10GE-ZR-D9220	192.2	1559.79
SO-SFP-10GE-ZR-D9230	192.3	1558.98
SO-SFP-10GE-ZR-D9240	192.4	1558.17
SO-SFP-10GE-ZR-D9250	192.5	1557.36
SO-SFP-10GE-ZR-D9260	192.6	1556.55
SO-SFP-10GE-ZR-D9270	192.7	1555.75
SO-SFP-10GE-ZR-D9280	192.8	1554.94
SO-SFP-10GE-ZR-D9290	192.9	1554.13
SO-SFP-10GE-ZR-D9300	193.0	1553.33
SO-SFP-10GE-ZR-D9310	193.1	1552.52
SO-SFP-10GE-ZR-D9320	193.2	1551.72
SO-SFP-10GE-ZR-D9330	193.3	1550.92
SO-SFP-10GE-ZR-D9340	193.4	1550.12
SO-SFP-10GE-ZR-D9350	193.5	1549.32
SO-SFP-10GE-ZR-D9360	193.6	1548.51
SO-SFP-10GE-ZR-D9370	193.7	1547.72
SO-SFP-10GE-ZR-D9380	193.8	1546.92
SO-SFP-10GE-ZR-D9390	193.9	1546.12
SO-SFP-10GE-ZR-D9400	194.0	1545.32
SO-SFP-10GE-ZR-D9410	194.1	1544.53
SO-SFP-10GE-ZR-D9420	194.2	1543.73
SO-SFP-10GE-ZR-D9430	194.3	1542.94
SO-SFP-10GE-ZR-D9440	194.4	1542.14
SO-SFP-10GE-ZR-D9450	194.5	1541.35
SO-SFP-10GE-ZR-D9460	194.6	1540.56
SO-SFP-10GE-ZR-D9470	194.7	1539.77
SO-SFP-10GE-ZR-D9480	194.8	1538.98
SO-SFP-10GE-ZR-D9490	194.9	1538.19
SO-SFP-10GE-ZR-D9500	195.0	1537.40
SO-SFP-10GE-ZR-D9510	195.1	1536.61
SO-SFP-10GE-ZR-D9520	195.2	1535.82
SO-SFP-10GE-ZR-D9530	195.3	1535.04
SO-SFP-10GE-ZR-D9540	195.4	1534.25
SO-SFP-10GE-ZR-D9550	195.5	1533.47
SO-SFP-10GE-ZR-D9560	195.6	1532.68
SO-SFP-10GE-ZR-D9570	195.7	1531.90
SO-SFP-10GE-ZR-D9580	195.8	1531.12
SO-SFP-10GE-ZR-D9590	195.9	1530.33
SO-SFP-10GE-ZR-D9600	196.0	1529.55

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