

SO-XFP-8G-ER-Cxx

XFP, 8/4/2 Gbps, CWDM, 1470nm-1610nm, SM, DDM, 15dB, 40km

OVERVIEW

The SO-XFP-8G-ER-Cxx series optical transceiver is designed for fiber communications application such as 8G Fiber Channel (1200-SM-LL-L), which fully compliant with the specification of XFP MSA Rev 4.5. This module is designed for single mode fiber and operates at a nominal wavelength of CWDM wavelength. There are eight center wavelengths available from 1470nm to 1610nm, with each step 20nm. A guaranteed optical link budget of 15dB is offered. The module is with the XFP 30-pin connector to allow hot plug capability. Only single 3.3V power supply is needed. The optical output can be disabled by LVTTTL logic high-level input of TX_DIS. Loss of signal (RX_LOS) output is provided to indicate the loss of an input optical signal of receiver. This module provides digital diagnostic functions via a 2-wire serial interface as defined by the XFP MSA Rev 4.5

PRODUCT FEATURES

- Supports 8.5Gb/s
- Hot-Pluggable XFP footprint
- Compliant with XFP MSA
- 8-Wavelengths CWDM EML transmitter from 1470nm to 1610nm, with Step 20nm
- Maximum distance in Lab is 40km
- Duplex LC connector
- Power dissipation < 3.5W
- Case operation temperature range -5°C to 70°C
- 2-Wire Interface for Integrated Digital Diagnostic Monitoring

APPLICATIONS

- 8/4/2/1 X Fibre Channel

ORDERING INFORMATION

Part Number	Description
SO-XFP-8G-ER-Cxx	XFP, 8/4/2 Gbps, CWDM, 1470nm-1610nm, SM, DDM, 15dB, 40km

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	V_{cc}	-0.5	4.0	V
Storage Temperature	T_S	-40	85	°C
Case Operating Temperature	T_{OP}	-5	70	°C

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ	Max.	Unit
Operating Temperature	T_c	-5		70	°C
Supply Voltage 1	V_{cc3}	3.13	3.3	3.45	V
Supply Voltage 2	V_{cc5}	4.75	5	5.25	V
Supply Current-Vcc3 supply	I_{cc3}			300	mA
Supply Current-Vcc5 supply	I_{cc5}			750	mA
Module Total Power	P			3.5	W

ELECTRICAL CHARACTERISTICS TRANSMITTER

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Input Differential Impedance	R_{in}		100		Ω	After internal AC coupling.
Differential Data Input Swing	$V_{in,pp}$	180		820	mV	
Transmit Disable Voltage	V_{DIS}	2.0		V_{cc}	V	
Transmit Enable Voltage	V_{EN}	GND		GND+0.8	V	
Transmit Disable Assert Time				10	us	

ELECTRICAL CHARACTERISTICS RECEIVER

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Differential Data Output Swing	$V_{out,pp}$	340	650	850	mV	
Data Output Rise Time	T_r			38	ps	20 – 80 %.
Data Output Fall Time	T_f			38	ps	
LOS Fault	$V_{LOS\ fault}$	$V_{cc} - 0.5$		$V_{cc\ HOST}$	V	20 – 80 %.
LOS Normal	$V_{LOS\ norm}$	GND		GND+0.5	V	
Power Supply Rejection	PSR	Reference the Section 2.7 of the XFP MSA Rev 4.5.				

OPTICAL CHARACTERISTICS TRANSMITTER

Parameter	Symbol	Min.	Typ	Max.	Unit
Optical Modulation Amplitude	P_{OMA}	-1		+4.4	dBm
Output Opt. Pwr: 9/125 SMF	P_{out}	-0.9		+4.0	dBm
Optical Extinction Ratio	ER	8.2			dB
Optical Wavelength	λ	$\lambda_c-5.5$	λ_c	$\lambda_c+7.5$	nm
-20dB Spectrum Width	$\Delta\lambda$			1	nm
Side Mode Suppression Ratio	$SMSR$	30			dB
Path Penalty	P_p			2.5	dB
Average Launch Power of OFF Transmitter	P_{OFF}			-30	dBm
TX Jitter	TX_j	Per 802.3ae requirements			
Relative Intensity Noise	RIN			-128	dB/Hz

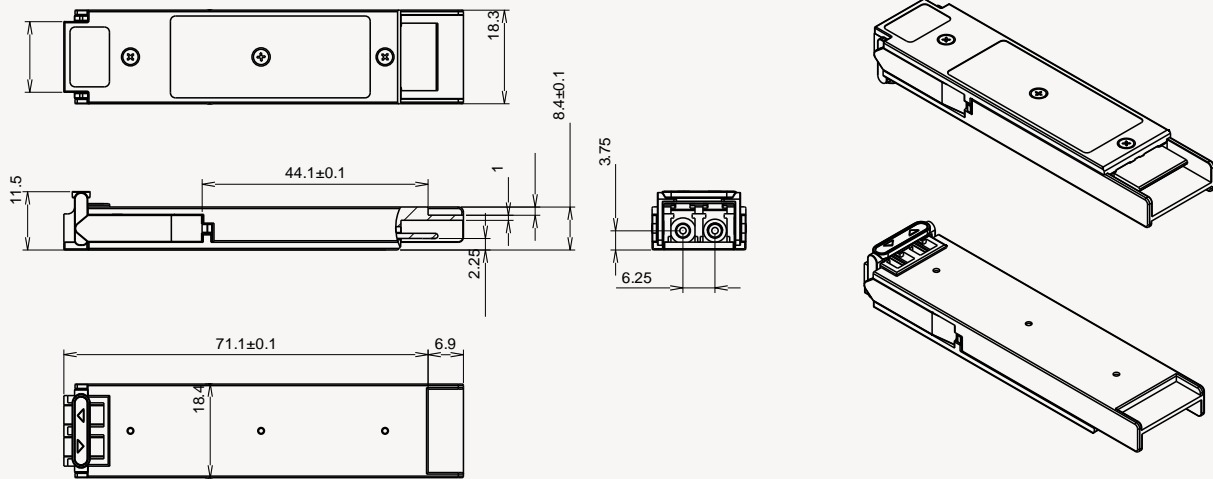
OPTICAL CHARACTERISTICS RECEIVER

Parameter	Symbol	Min.	Typ	Max.	Unit
Receiver Sensitivity @ 8.5Gb/s	P_{min}			-16	dBm
Maximum Input Power	P_{max}	-1			dBm
Optical Centre Wavelength	λ	1260		1620	nm
Receiver Reflectance	R_{rf}			-12	dB
LOS De-Assert	$LOSD$			-20	dBm
LOS Assert	$LOSA$	-28			dBm
LOS Hysteresis		1			dB

PIN FUNCTION DEFINITIONS

PIN	Signal Name	Description	PIN	Signal Name	Description
1	V _{EE} T	Transmitter Ground	11	V _{EE} R	Receiver Ground
2	TX_Fault	Transmitter Fault Indication	12	RD-	Inv. Received Data Out
3	TX_Disable	Transmitter Disable	13	RD+	Received Data Out
4	SDA	Module Definition 2	14	V _{EE} R	Receiver Ground
5	SCL	Module Definition 1	15	V _{CC} R	Receiver Power
6	MOD_ABS	Module Definition 0	16	V _{CC} T	Transmitter Power
7	RS0	RX Rate Select (LVTTTL).	17	V _{EE} T	Transmitter Ground
8	LOS	Loss of Signal	18	TD+	Transmit Data In
9	RS1	TX Rate Select (LVTTTL).	19	TD-	Inv. Transmit Data In
10	V _{EE} R	Receiver Ground	20	V _{EE} T	Transmitter Ground

MECHANICAL SPECIFICATIONS



EXTENDED ORDERING INFORMATION

Part Number	Description
SO-XFP-8G-ER-C47	XFP, 8/4/2 Gbps, CWDM, 1470nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C49	XFP, 8/4/2 Gbps, CWDM, 1490nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C51	XFP, 8/4/2 Gbps, CWDM, 1510nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C53	XFP, 8/4/2 Gbps, CWDM, 1530nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C55	XFP, 8/4/2 Gbps, CWDM, 1550nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C57	XFP, 8/4/2 Gbps, CWDM, 1570nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C59	XFP, 8/4/2 Gbps, CWDM, 1590nm, SM, DDM, 15dB, 40km
SO-XFP-8G-ER-C61	XFP, 8/4/2 Gbps, CWDM, 1610nm, SM, DDM, 15dB, 40km