

SPS-7380-CXX0

3.3V / CWDM / 1.25 Gbps SFP LC SINGLE-MODE TRANSCEIVER

FEATURES

- Hot-Pluggable SFP Footprint LC Optical Transceiver
- Small Form-Factor Pluggable (SFP) MSA compatible
- 18 Wavelength (λ): 1270 nm to 1610 nm CWDM DFB LD Transmitter
- Compliant with IEEE 802.3z Gigabit Ethernet 1000BASE-ZX
- Compliant with Fiber Channel 1x SM-LC-L FC-PI
- 24 dB Power Budget at Least
- AC/AC Coupling according to MSA
- Single +3.3 V Power Supply
- 0 to 70°C Operation
- Class 1 Laser International Safety Standard IEC-60825 Compliant

APPLICATIONS

- Gigabit Ethernet Switches and Routers
- Fiber Channel Switch Infrastructure
- XDSL Applications
- Metro Edge Switching

DESCRIPTION

The SPS-7380-CXX0 series single mode transceivers is small form factor pluggable module for bi-directional serial optical data communications such as Gigabit Ethernet 1000BASE-ZX and Fiber Channel 1x SM-LC-L FC-PI. It is with the SFP 20-pin connector to allow hot plug capability. This module is designed for single mode fiber and operates at a nominal wavelength of CWDM wavelength. There are eighteen center wavelengths available from 1270 nm to 1610 nm, with each step 20 nm. A guaranteed minimum optical link budget of 24 dB is offered. The transmitter section uses a multiple quantum well CWDM DFB laser and is a class 1 laser compliant according to International Safety Standard IEC-60825. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

LASER SAFETY

This single mode transceiver is a Class 1 laser product. It complies with IEC-60825 and FDA 21 CFR 1040.10 and 1040.11. The transceiver must be operated within the specified temperature and voltage limits. The optical ports of the module shall be terminated with an optical connector or with a dust plug.

ORDER INFORMATION

P/No.	Bit Rate (Gb/s)	1000 BASE	Power Budget (dB)	Wavelength (nm)	Package	Case Temp. (°C)	TX Power (dBm)	RX Sens. (dBm)
SPS-7380-CXX0	1.25/1.063	ZX	> 24	CWDM*	LC SFP	0 to 70	5 to 0	-24

CWDM* Wavelength (0 to 70°C)

Central Wavelength	Min. (nm)	Typ. (nm)	Max. (nm)	Central Wavelength	Min. (nm)	Typ. (nm)	Max. (nm)
-C270	1264.5	1270	1277.5	-C450	1444.5	1450	1457.5
-C290	1284.5	1290	1297.5	-C470	1464.5	1470	1477.5
-C310	1304.5	1310	1317.5	-C490	1484.5	1490	1497.5
-C330	1324.5	1330	1337.5	-C510	1504.5	1510	1517.5
-C350	1344.5	1350	1357.5	-C530	1524.5	1530	1537.5
-C370	1364.5	1370	1377.5	-C550	1544.5	1550	1557.5
-C390	1384.5	1390	1397.5	-C570	1564.5	1570	1577.5
-C410	1404.5	1410	1417.5	-C590	1584.5	1590	1597.5
-C430	1424.5	1430	1437.5	-C610	1604.5	1610	1617.5

CWDM*: 18 Wavelengths from 1270 nm to 1610 nm, each step 20 nm.

Absolute Maximum Ratings					
Parameter	Symbol	Min	Max	Units	Notes
Storage Temperature	Tstg	-40	85	°C	
Operating Case Temperature	Topr	0	70	°C	Air flow 1m/sec
Power Supply Voltage	Vcc	-0.5	3.6	V	

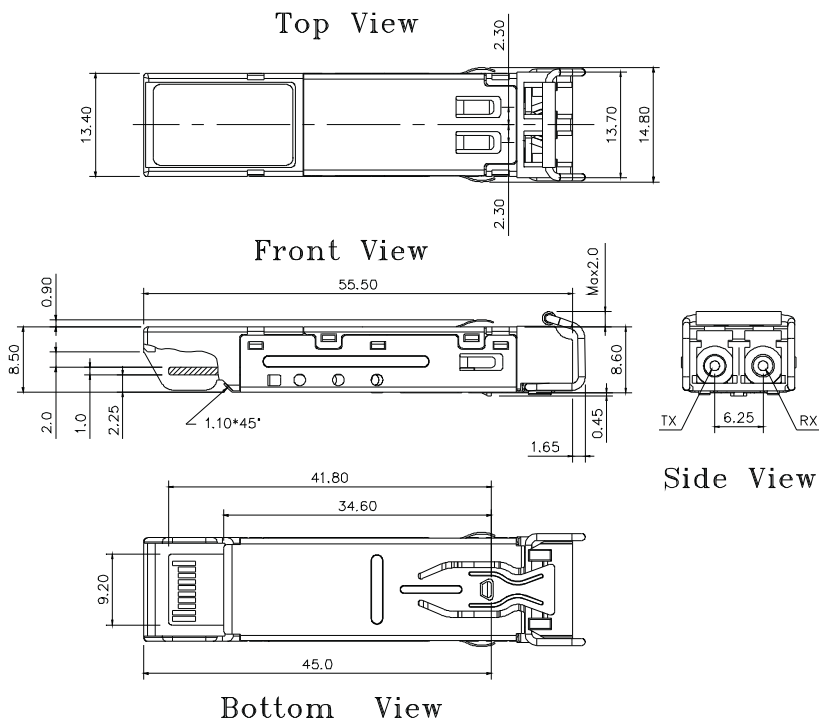
Recommended Operating Conditions					
Parameter	Symbol	Min	Typ	Max	Units / Notes
Power Supply Voltage	Vcc	3.1	3.3	3.5	V
Case Operating Temperature	Topr	0		70	°C / air flow 1m/sec
Power Supply Current	I _{CC(TX+RX)}		200	300	mA
Data Rate		100	1250		Mb/s

Transmitter Specifications (0°C < Topr < 70°C, 3.1V < Vcc < 3.5V)						
Parameter	Symbol	Min	Typ	Max	Units	Notes
Optical						
Optical Transmit Power	P _o	0	---	5	dBm	1
Output Center Wavelength	λ	λ _c - 5.5	λ _c	λ _c + 7.5	nm	2
Output Spectrum Width	Δλ	---	---	1	nm	-20 dB Width
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	E _R	9	---	---	dB	
Optical Rise Time	t _r			260	ps	20 % to 80% Values
Optical Fall Time	t _f			260	ps	20 % to 80% Values
Relative Intensity Noise	RIN			-120	dB/Hz	
Electrical						
Data Input Current - Low	I _{IL}	-350			μA	
Data Input Current - High	I _{IH}			350	μA	
Differential Input Voltage	V _{IH} - V _{IL}	0.5		2.4	V	Peak-to-Peak
TX Disable Input Voltage - Low	T _{DIS, L}	0		0.5	V	3
TX Disable Input Voltage - High	T _{DIS, H}	2.0		Vcc	V	3
TX Disable Assert Time	T _{ASSERT}			10	μs	
TX Disable Deassert Time	T _{DEASSERT}			1	ms	
TX Fault Output Voltage -- Low	T _{FaultL}	0		0.5	V	4
TX Fault Output Voltage -- High	T _{FaultH}	2.0		Vcc+0.3	V	4

1. Output power is power coupled into a 9/125 μm single mode fiber.
2. ITU-T G.694.2 CWDM wavelength from 1270 nm to 1610 nm, each step 20 nm.
3. There is an internal 4.7K to 10K ohm pull-up resistor to VccTX.
4. Open collector compatible, 4.7K to 10K ohm pull-up to Vcc (Host Supply Voltage).

PACKAGE DIAGRAM

Units in mm



Note: Specifications subject to change without notice.