

SP-SMxxCW010D-GP

CWDM SFP+ Single-Mode for 10GbE
Duplex SFP+ Transceiver
RoHS6 Compliant

Features

- ◆ Supports 9.95Gb/s to 11.1Gb/s bit rates
- ◆ Hot-Pluggable SFP+ footprint
- ◆ 8-Wavelength CWDM DFB Transmitter from 1470nm to 1610nm, with step 20nm
- ◆ 10dB Power Budget at Least
- ◆ Duplex LC connector
- ◆ Power Dissipation < 1.2W
- ◆ Case operation temperature range 0°C to 70°C
- ◆ Compliant with SFP+ MSA Specification SFF-8431
- ◆ Build-in digital diagnostic functions
- ◆ Compliant with SFF-8472 MSA

Applications

- ◆ 10GBASE-LR/LW 10G Ethernet
- ◆ 10GBASE-LR at 10.31Gbps
- ◆ 10GBASE-LW at 9.95Gbps
- ◆ Other optical links

Ordering information

Part No.	Description
SP-SMxxCW010D-GP	-SFP+ CWDM 10G (1470-1610nm) LC DDM SMF 10km

CWDM* Wavelength (0~70C)

Band	Nomenclature	Wavelength(nm)		
		Min.	Typ.	Max.
S-band Short Wavelength	47	1464	1470	1477.5
	49	1484	1490	1497.5
	51	1504	1510	1517.5
	53	1524	1530	1537.5
C-band Conventional	55	1544	1550	1557.5
L-band Long Wavelength	57	1564	1570	1577.5
	59	1584	1590	1597.5
	61	1604	1610	1617.5

CWDM*: 8 Wavelengths from 1470nm to 1610nm, each step 20nm

Absolute Maximum Ratings

Parameter	Symbol	Min	Typical	Max	Unit	Note
Maximum Supply Voltage 1	V _{CC}	-0.5		4.0	V	
Storage Temperature	T _S	-40		85	°C	
Case Operating Temperature	T _{OP}	0		70	°C	

Recommend Operating Condition

Parameter	Symbol	Min	Typical	Max	Units	Note
Operating Temperature	T _{OP}	0		70	°C	
Supply Voltage	V _{CC}	3.13	3.3	3.45	V	
Supply Current	I _{CC}			350	mA	
Data Rate		9.95		11.1	Gbps	

Electrical Characteristics

(T_{OP} = 0 to 70°C, V_{CC} = 3.15 to 3.45V)

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
CML Inputs(Differential)	V _{in}	150		1200	mVpp	1
Input Impedance (Differential)	Z _{in}	85	100	115	ohm	
Tx_DISABLE Input Voltage - High		2		V _{CC} +0.3	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage -- High		2		V _{CC} +0.3	V	

Tx_FAULT Output Voltage -- Low		0		0.8	V	
Receiver						
CML Outputs (Differential)	Vout	350		700	mVpp	1
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		Vcc+0.3	V	
Rx_LOS Output Voltage - Low		0		0.8	V	
MOD_DEF (0:2)	VoH	2.5			V	2
	VoL	0		0.5	V	

Notes:

1. After internal AC coupling.
2. Reference the SFF-8472 MSA.

Optical Characteristics

(T_{OP} = 0 to 70°C, V_{CC} = 3.15 to 3.45V)

Parameter	Symbol	Min	Typical	Max	Unit	Note
Transmitter						
Output Opt. Pwr: 9/125 SMF	Pout	-5		0	dBm	1
Optical Extinction Ratio	ER	3.5			dB	
Optical Wavelength	λ	$\lambda_c - 6$	λ_c	$\lambda_c + 7.5$	nm	2
-20dB Spectrum Width	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Transmitter and Dispersion Penalty	TDP			2	dB	
Average Launch Power of OFF Transmitter	P _{OFF}			-30	dBm	
TX Jitter Generation (Peak-to-Peak)	TXj			0.1	UI	
TX Jitter Generation (RMS)	TXj RMS			0.01	UI	
Receiver						
Receiver Sensitivity @ 10.7Gb/s	Pmin			-15	dBm	3
Maximum Input Power	Pmax	+0.5			dBm	
Optical Center Wavelength	λ	1260		1620	nm	
Receiver Reflectance	R _{rf}			-27	dB	
LOS De-Assert	LOS _D			-16	dBm	
LOS Assert	LOS _A	-28			dBm	
LOS Hysteresis		1			dB	

Notes:

1. Output power is coupled into a 9/125 μ m SMF.
2. ITU-T G.694.2 CWDM wavelength from 1470nm to 1610nm, each step 20nm.

Mechanical Specifications