



HydraX SM Optical Transceiver Module 1.25G 20/40/80km BIDI SFP

Design Reference

SFF-8431
SFF-8472
IEC 60825 Class 1
IEEE802.3z

Application

1.25G Long Haul Network
Gigabit Ethernet

Working Condition

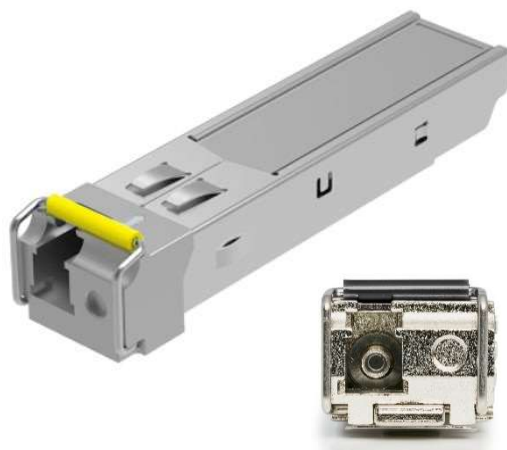
Operation Temperature
-0°C ~ +70°C (Case)
Storage Temperature
-40°C ~ +85°C (Ambient)
Relative humidity
5% ~ 95%

Compliance

CE Mark
FCC Mark

Safety and EMI

Protection of over
voltage/current



Integrated single fiber bi-di reactional optical subassembly

Up to 1.25Gbps Data Links

Hot-pluggable SFP+ footprint

Metal enclosure for lower EMI

Simplex LC connector

20 to 80km transmission on SMF

Single power supply 3.3V

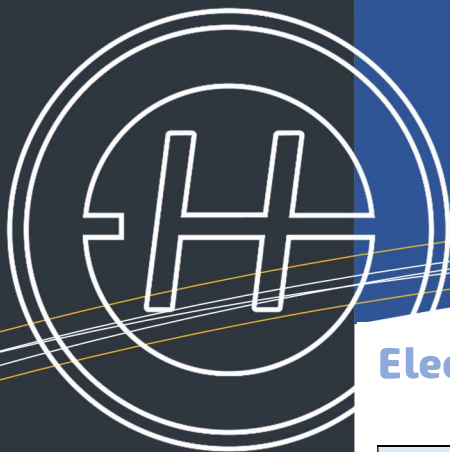
Low power dissipation

General Description

The Hermesys HydraX™ series SFP-21010XXXH1SW optical transceivers is hot pluggable 3.3V Small-Form-Factor transceiver module. It designed expressly for high-speed communication applications that require rates up to 1.25Gb/s, it designed to be compliant with SFF-8472 SFP MSA. The module data link up from 20 to 80km in 9/125um single mode fiber.

General Specification

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Absolute Maximum Ratings						
Power Supply Voltage	V _{CC}	-0.5		4	V	
Signal Input Voltage		V _{CC} -0.3		V _{CC} +0.3	V	
Recommended Operating Conditions						
Supply Voltage	V _{CC}	3.14	3.3	3.47	V	
Data Rate			1.25		Gb/s	



Electrical Characteristics

Parameter		Symbol	Min	Typ	Max	Unit	Notes
Supply Current		I _{CC}	mA	-	-	300	
Single Ended Data Input Swing		-	mV	-	-	1100	
Single Ended Data Output Swing		-	mV	300	-	600	
TX_Fault	Transmitter Fault	V _{OH}	2.0	-	V _{CC}	V	
	Normal Operation	V _{OL}	0	-	0.8		
TX_DISABLE	Transmitter Disable	V _{IH}	2.0	-	V _{CC}	V	
	Transmitter Enable	V _{IL}	0	-	0.8		

Optical Characteristics

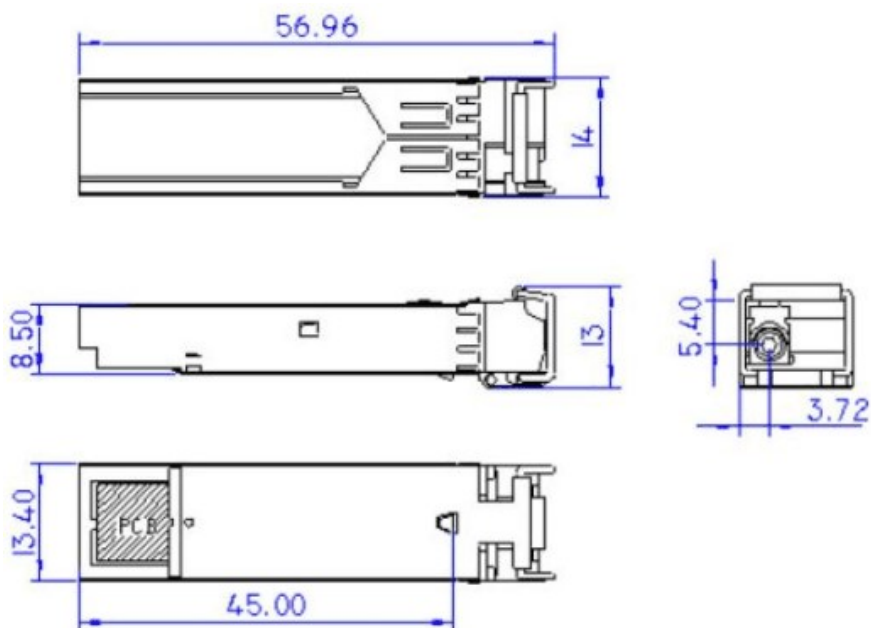
Transmitter Optical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Output Optical Power	P _o	-9		-3	dBm	20km
		-5		0		40km
		-2		+3		80km
Optical Center Wavelength	λ _c	1260	1310	1360	nm	Tx1310nm 20km
		1290	1310	1330		Tx1310nm 40/80km
		1470	1490	1510		Tx1490nm
		1520	1550	1580		Tx1550nm
Extinction Ratio	ER	7.5			dB	
Spectral Line Width (RMS)	Δλ	-	-	4	nm	20km FP LD
Spectral Line Width @ -20dB	Δλ	-	-	1	nm	DFB LD
Side Mode Suppression Ratio	SMSR	30			dB	DFB LD
Eye Diagram	IEEE Std 802.3 10Gb Ethernet 10GBASE-ZR compatible					
P _{out} @TX-Disable Asserted	P _{OFF}			-40	dBm	
Receiver Optical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Optical Center Wavelength	λ _c	1470		1610	nm	Tx1310nm
		1260		1360		Tx1550nm
Receiver Overload	P _{sat}	-3			dBm	
Receiver Sensitivity	S _{en}			-24	dBm	20~40km
				-26		80km
Rx_LOS of Signal Asserted	LOS _A	-38			dBm	
Rx_LOS of Signal Deasserted	LOS _D			-25	dBm	
Rx_LOS of Signal Hysteresis	LOS _H	0.5	3	5	dB	

Notes:

1. The LOS Hysteresis to minimize "chatter" on the output line. In principle, hysteresis alone does not guarantee chatter-free operation
2. Measured with the PRBS 2²³-1 test mode, @1.25Gb/s, EX=10dB, BER<10⁻¹²;



Dimension of Case



Order Information

Part Number	Grade	Packing info
SFP-21010XXXY1SW-ZZ	Commercial -0~70 °C	400 pcs per carton (10pcs per tray, 10 tray per inner box, 4 inner box per carton)

Note:

X means the distance code

Y means compatible equipment code.

Z means TX wavelength