

SF-SM31WD020DI-GP

SF-SM55WD020DI-GP

- Single-Mode SFP Transceiver
- RoHS Compliant

Features

- Support 1.25Gbps data links
- A type: 1310nm FP Tx/1550nmRx
B type: 1550nm FP Tx/1310nmRx
- 20km with 9/125 μ m SMF
- Single 3.3V Power supply and TTL Logic Interface
- Hot-Pluggable SFP Footprint Simplex SC/LC Connector Interface
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- Operating Case Temperature Standard: 0°C~+70°C
Industrial: -40°C~+85°C
- Compliant with SFP MSA Specification
- Compliant with Digital Diagnostic Monitor Interface SFF-8472
- Safety Certification: TUV/UL/FDA

Applications

- Fiber Channel Links
- WDM Gigabit Ethernet
- Other Optical Links

Ordering information

Part No.	Description
SF-SM31WD020DI-GP	SFP WDM 1.25Gbps Tx1310nm/Rx1550nm LC DDM SMF 20km industrial ver (-40+85)
SF-SM55WD020DI-GP	SFP WDM 1.25Gbps Tx1550nm/Rx1310nm LC DDM SMF 20km industrial ver (-40+85)

Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	T_S	-40	85	°C
Relative Humidity	RH	-	95	%
Supply Voltage	V_{CC}	-0.5	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Case Temperature	T_C	-40	-	85	°C
Power Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Power Supply Current	I_{CC}	-	-	300	mA
Data Rate	-	-	1.25	-	Gb/s

Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes	
Transmitter							
LVPECL Inputs (Differential)	V_{in}	400	-	2000	mVpp	AC coupled inputs	
Input Impedance (Differential)	Z_{in}	90	100	110	ohms	$R_{in} > 100 \text{ kohms @ DC}$	
Tx_Dis	Disable	-	2	-	$V_{CC}+0.3$	V	-
	Enable	-	0	-	0.8	V	-
Tx_FAULT	Fault	-	2	-	$V_{CC}+0.3$	V	-
	Normal	-	0	-	0.5	V	-
Receiver							
LVPECL Outputs (Differential)	V_{out}	400	-	2000	mVpp	AC coupled outputs	
Output Impedance (Differential)	Z_{out}	90	100	110	ohms	-	
Rx_LOS	LOS	-	2	-	$V_{CC}+0.3$	V	-
	Normal	-	0	-	0.8	V	-
MOD_DEF (0:2)	VoH	2.5	-	-	V	With Serial ID	
	VoL	0	-	0.5	V	With Serial ID	

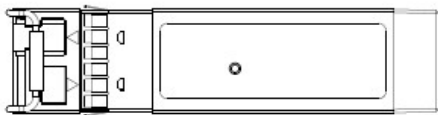
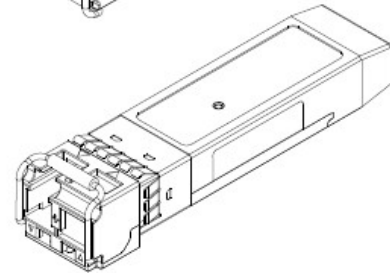
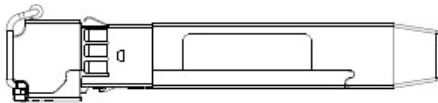
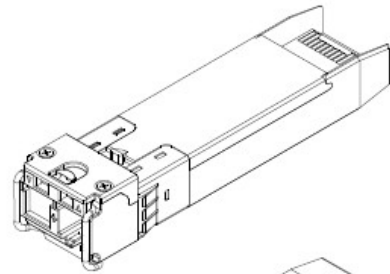
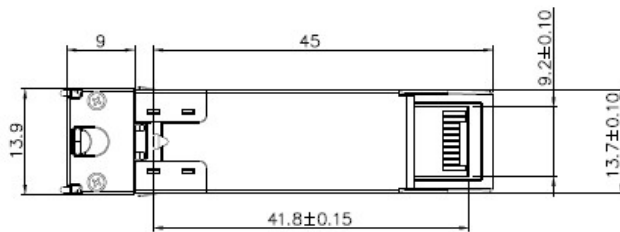
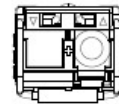
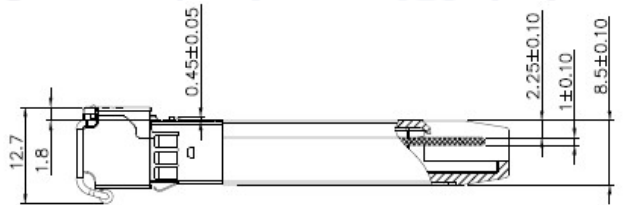
Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
62.5 Core Diameter MMF (500MHz*km)	L	-	-	20	km	-
Data Rate	-	-	1.25	-	Gbps	-
Transmitter						
Center Wavelength Range	λ_c	1270	1310	1350	nm	-
	Δc	1530	1550	1570	nm	-
Average Output Power	P _{out}	-8	-	-3	dBm	1
Extinction Ratio	ER	6	-	-	dB	2
Rise/Fall Time(20%~80%)	tr/ff	-	-	0.26	ns	-
Total Jitter	TJ	-	-	260	ps	-
Output Optical Eye	Compatible with IEEE 802.3ah-2004					2
TX_Disable Assert Time	t _{off}	-	-	10	us	-
Pout@TX Disable Asserted	P _{out}	-	-	-45	dBm	-
Receiver						
Wavelength Range	λ	1500	1550	1600	nm	-
	λ	1260	1310	1360	nm	-
Receiver Sensitivity	P _{min}	-	-	-22	dBm	3
Receiver Overload	P _{max}	-3	-	-	dBm	-
LOS De-Assert	LOS _D	-	-	-23	dBm	-
LOS Assert	LOS _A	-35	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

Notes:

- Output is coupled into a 50/125μm Multi-mode fiber.
- Filtered, measured with a PRBS 2⁷-1 test pattern @1.25Gbps.
- Measured at all data rates specified in Data Rate table with ER=9 dB, 2⁷-1 PRBS data pattern, BER <1E-12.

Mechanical specifications



Unremarked tolerances ±0.2mm