

Product Overview

The transceiver is small form factor pluggable module with standard duplex connector for fiber communications. This module is designed for single-mode-fiber (SMF) and operates at a nominal wavelength of 1310 nm with cost effective and high performance. It is with the SFP 20-pin connector to allow hot plug capability.



Key Features

- Single + 3.3V power supply
- Differential Inputs and Outputs
- Small Form Factor Pluggable MSA Compliant.
- Commercial Operation Temp.: 0 °C to +70 °C
- Industrial Operation Temp.: -40 °C to +85 °C
- RoHS Compliant
- Class 1 Laser International Safety Standard IEC 825 Compliant. Complies with EN60825-1 and FDA 21 CFR 1040.10 and 1040.11
- Compliant with SFF-8472 MSA Digital Diagnostic Monitor (DDM), Internal Calibration.



Performance Specifications

Absolute Maximum Ratings						
Parameter		Symbol	Min	Typ	Max	Unit
Supply Voltage		V_{CC}	0	-	4	V
Storage Temperature		T_S	-40	-	85	°C
Operating Temperature	Commercial	T_{OP-com}	0	-	70	°C
	Industrial	T_{OP-ind}	-40	-	85	°C
Lead Soldering Limits		T_{SOLD}	-	-	260/10	°C /sec
General Specifications						
Parameter		Symbol	Min	Typ	Max	Unit
Data Rate□		B	0.80	1.25	1.50	Gbps
Supported Link Length on 9/125µm SMF	for 1312-10	L	10	-	-	Km
	for 1312-15		15	-	-	Km
	for 1312-20		20	-	-	Km
Supply Current		$I_{Tx}+I_{Rx}$	-	-	300	mA
Power Dissipation		P_{Dis}	-	-	1000	mW

Optical and Electrical Characteristics

Transmitter Electrical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	
Supply Voltage	V_{CC}	3.15	3.3	3.45	V	
Data Differential Input Voltage	$V_{in, pp}$	400	-	2000	mV	
Disable Input Voltage	$V_{IL} - V_{CC}$	-1.81	-	-1.48	V	
Enable Input Voltage	$V_{IH} - V_{CC}$	-1.16	-	-0.88	V	
TX Fault Voltage-High (Fault)	V_{TF}	2.0	-	V_{CC}	V	
TX Fault Voltage-Low (Normal)	V_{TN}	0	-	0.8	V	
POut@TX Disable Asserted	P_{OFF}	-	-	-45	dBm	
Transmitter Optical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	
Output Optical Power on 9 μ m SMF	P_O	-9	-	-3	dBm	
Center Wavelength	λ_C	1280	1310	1340	nm	
Spectral Width (RMS)	$\Delta\lambda_{RMS}$	-	-	2	nm	
Optical Rise Time (20%-80%)	t_r	-	-	0.26	ns	
Optical Fall Time (20%-80%)	t_f	-	-	0.26	ns	
Extinction Ratio	ER	9	-	-	dB	
Receiver Electrical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	
Supply Voltage	V_{CC}	3.15	3.3	3.45	V	
Data Differential Output Voltage	$V_{out, pp}$	500	-	1200	mV	
Receiver LOS/SD Output Voltage-High	V_{RH}	2.0	-	V_{CC}	V	
Receiver LOS/SD Output Voltage-Low	V_{RL}	0	-	0.8	V	
Data Output Rise Time (20%-80%)	t_r	-	-	0.35	ns	
Data Output Fall Time (20%-80%)	t_f	-	-	0.35	ns	
Receiver Optical Characteristics						
Parameter	Symbol	Min	Typ	Max	Unit	
Maximum Receiver Power	P_{in}	-3	-	-	dBm	
Receiver Sensitivity	P_S	for 1312-10	-	-	-21	dBm
		for 1312-15/20	-	-	-23	dBm
Operating Wavelength	λ_C	1100	-	1600	nm	
Optical Return Loss	P_R	-	-	12	dB	
Signal Detect-Asserted	P_A	for 1312-10	-	-	-21	dBm avg.
		for 1312-15/20	-	-	-23	dBm avg.
Signal Detect-Deasserted	P_D	-36	-	-	dBm avg.	
Signal Detect-Hysteresis	$P_A - P_D$	0.5	-	-	dB	