SFP10

1000Base-LX Single Mode Tranceiver - 10Km (-40 to 85 ºC)

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 ºC to +70 ºC
- Industrial Operation Temp.: -40 ºC to +85 ºC
- 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	ºC
Operating Temperature	Commercial	T_{OP-com}	0	-	70	ºC
	Industrial	T_{OP-ind}	-40	-	85	ºC
Lead Soldering Limits		T_{SOLD}	-	-	260/10	ºC /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 9μm 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	for 1312-10	P_S	-	-	-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	for 1312-10	P_A	-	-	-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