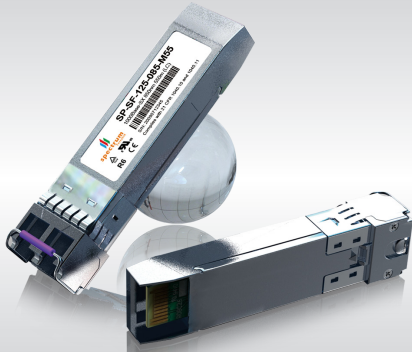


SPECTRUM TRANSCEIVER


SP-SF-125-130-002-DC
 1.25G Small Form Pluggable

FEATURES

- Up to 1.25Gb/s Data Rate.
- 2Km with 50/125 μ m MMF.
- Single +3.3V Power Supply and TTL Logic Interface.
- Hot-Pluggable.
- Compliant with MSA SFP Specification, RoHS.
- Digital diagnostic monitor interface; Compatible with SFF-8472 and IEC 60826 Class 1.
- Duplex LC Connector Interface.
- 1310nm VCSEL Laser Transmitter.

APPLICATIONS

- Gigabit Ethernet.
- Fiber Channel.
- Switch to Switch Interface.
- High speed I/O for file server.

SPECIFICATIONS
a) Electrical and Optical Characteristics: (Condition: $T_a=T_{op}$)

Parameter	Symbol	Min.	Typical	Max.	Unit
50 μ m Core Diameter MMF	L		2		Km
Data Rate			1.25		Gbps
Transmitter					
Centre Wavelength	λ_C	1260	1310	1360	nm
Spectral Width (RMS)	σ			0.85	nm
Average Output Power	P_{OUT}	-9		-3	dBm
Extinction Ratio	EX	9			dB
Rise/Fall Time (20%~80%)					
	Output Optical Eye			IUT-T G.957 Compliant	
Data Input Swing Differential	V_{IN}	500		2000	mV
Input Differential Impedance	Z_{IN}	90	100	110	Ω
TX_Disable - Disable		2.0		Vcc+0.3	V
TX_Disable - Enable		0		0.8	V
TX_Fault - Fault		2.0		Vcc+0.3	V
TX_Fault - Normal		0		0.8	V
TX_Disable Assert Time	t_{off}			10	s
Receiver					
Centre Wavelength	λ_C	1100		1600	nm
Receiver Sensitivity	P_{IN}			-17	dBm
Output Differential Impedance	Z_{OUT}	90	100	110	Ω
Data Output Swing Differential	V_{OUT}	370		2000	mV
Rise/Fall Time	t_r/t_f			2.2	ps
LOS De-Assert	LOSD			-20	dBm
LOS Assert	LOSA	-40			dBm
LOS - High		2.0		Vcc+0.3	V
LOS - Low		0		0.8	V

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b) Absolute Maximum Ratings: (TC=25°C)

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Supply Voltage	V _{CC}	0	+5	V

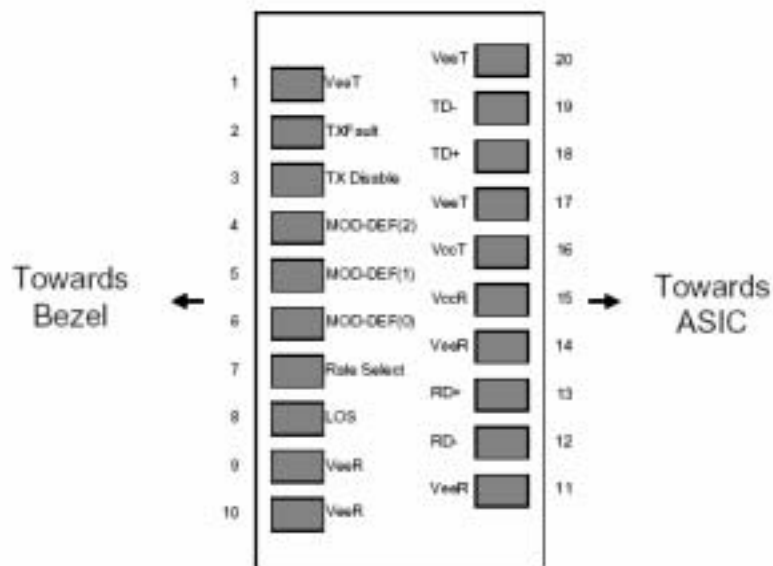
c) Recommended Operating Environment

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	V _{CC}	+3.15	+3.3	+3.45	V	
Power Supply Current	I _{CC}			190	mA	
Surge Current	I _{Surge}			+30	mA	
Baud Rate			1.25		GBaud	
Operating Temperature	T _{OP}	0	-	+70	°C	
Total Supply Current	I _{CC}			300	mA	

d) Performance Specifications - Electrical

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter						
CML/PECL Inputs (Differential)	V _{in}	400		2500	mVpp	AC coupled inputs
Input Impedance (Differential)	Z _{in}	85	100	115	Ohms	R _{in} > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		3.45	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage - High		V _{CC} -0.5		V _{CC} +0.3	V	I _o = 400µA; Host V _{CC}
Tx_FAULT Output Voltage - Low		0		0.5	V	I _o = -4.0mA
Receiver						
CML Outputs (Differential)	V _{out}	400	800	1200	mVpp	AC coupled outputs
Output Impedance (Differential)	Z _{out}	85	100	115	Ohms	
Rx_LOS Output Voltage - High		V _{CC} -0.5		V _{CC} +0.3	V	I _o = 400µA; Host V _{CC}
Rx_LOS Output Voltage - Low		0		0.8	V	I _o = -4.0mA
MOD_DEF (0:2)	VoH	2.5			V	With Serial ID
MOD_DEF (0:2)	VoL	0		0.5	V	With Serial ID

e) Pin Assignment



Pin out of Connector Block on Host Board

SPECTRUM TRANSCEIVER

f) Pin Description

Pin Num.	Name	Function	Notes
1	VeeT	Transmitter Ground	Notes 1
2	TX Fault	Transmitter Fault Indicator	Low: normal, High: fault indication
3	TX Disable	Transmitter Disable	Note 2, Module disables on high or open
4	MOD-DEF2	Module Definition 2	Note 3, Data line for Serial ID
5	MOD-DEF1	Module Definition 1	Note 3, Clock line for Serial ID
6	MOD-DEF0	Module Definition 0	Note 3, Grounded within the module
7	Rate Select	Not Connect	Function not available
8	LOS	Loss of Signal	Note 4
9	VeeR	Receiver Ground	Note 1
10	VeeR	Receiver Ground	Note 1
11	VeeR	Receiver Ground	Note 1
12	RD-	Inv. Received Data Out	AC Coupled
13	RD+	Received Data Out	AC Coupled
14	VeeR	Receiver Ground	Note 1
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VeeT	Transmitter Ground	Note 1
18	TD+	Transmit Data In	AC Coupled
19	TD-	Inv. Transmit Data In	AC Coupled
20	VeeT	Transmitter Ground	Note 1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS>2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k– 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.