

## FOCUS-1303-XX 1310nm

### Single-mode SFP Transceiver

#### Features

- Compliant with SFP MSA
- Compliant with ITU-T G.957 and G.958
- Compliant with Industry Standard RFT Electrical Connector and Cage
- 1000 Differential AC coupled PECL Outputs
- Single 3.3V Power supply and TTL Logic Interface, optional TTL and PECL Logic Interface for LOS signal
- Up to 155Mb/s bi-directional data links
- 1310nm FP Laser for 15Km and 40Km Transmission
- Extended Operating Temperature Range(0 ~ 70 )
- Hot Pluggable
- EEPROM with Serial ID functionality
- Duplex LC Connector Interface
- Low EMI and Low power dissipation
- Class 1 Laser Product Compliant with the Requirements of IEC 60825-1 and IEC 60825-2

#### Applications

- ◆ 100Base Fast Ethernet
- ◆ SDH/STM-1,SONET/OC-3

#### Product Description

The FOCUS-1303-XX pluggable transceiver module is a high performance integrated duplex data link for bi-directional communication over single mode optical fiber. It is compliant with the MSA Small Form Factor Pluggable (SFP) specification.

#### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T <sub>S</sub>	-40	+85	°C
Supply Voltage	V <sub>CC</sub>	-0.5	3.6	V

#### Recommended Operating Conditions

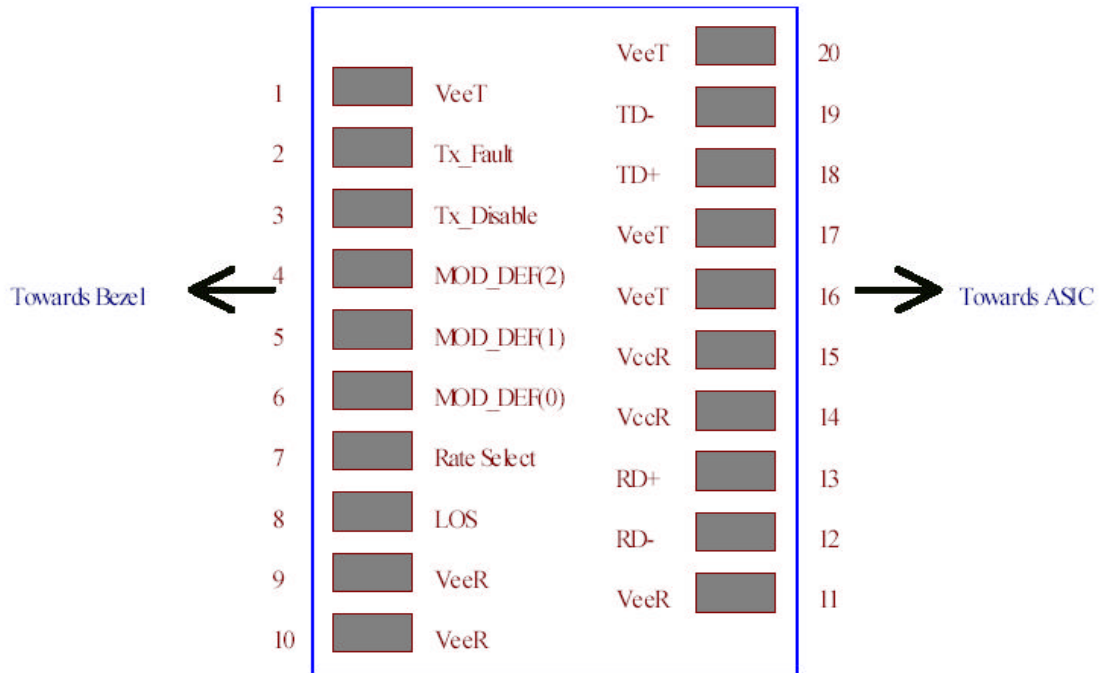
Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Ambient Temperature	T <sub>A</sub>	0		+70	°C

Power Supply Voltage	V <sub>CC</sub>	3.15	3.3	3.45	V
Power Supply Current	I <sub>CC</sub>			300	mA
Surge Current	I <sub>Surge</sub>			+30	mA

## Optical and Electrical Characteristics

Parameter		Symbol	Min.	Typical	Max.	Unit
Fiber Length on 9/125μmSMF	FOCUS-1303-15	L			15	Km
	FOCUS-1303-40				40	
Data Rate			100	155		Mbps
<b>Transmitter</b>						
Centre Wavelength		c	1260		1360	nm
Spectral Width (RMS)	FOCUS-1303-15				4	nm
	FOCUS-1303-40				3	
Average Output Power	FOCUS-1303-15	P <sub>Out</sub>	-15		-8	dBm
	FOCUS-1303-40		-5		0	
Extinction Ratio	FOCUS-1303-15	EX	8.2			dB
	FOCUS-1303-40		10			
Rise/Fall Time(20% ~ 80%)		tr/tf			1.5	ns
Output Optical Eye		Compatible with Telcordia GR-253-CORE and IUT-T G.957				
Data Input Swing Differential		V <sub>IN</sub>	300		1860	mV
Input Differential Impedance		Z <sub>IN</sub>	90	100	110	
TX Disable	Disable		2.0		V <sub>cc</sub>	V
	Enable		0		0.8	
TX_Fault	Fault		2.0		V <sub>CC</sub> +0.3	V
	Normal		0		0.8	
<b>Receiver</b>						
Centre Wavelength		c	1260		1580	nm
Receiver Sensitivity	FOCUS-1303-15	P <sub>IN</sub>			-31	dBm
	FOCUS-1303-40				-34	
Output Differential Impedance		P <sub>IN</sub>	90	100	110	
Data Output Swing Differential		V <sub>OUT</sub>	370		1800	mV
LOS De-Assert		LOS <sub>D</sub>			-37	dBm
LOS Assert		LOS <sub>A</sub>	-45			dBm
LOS	High		2.0		V <sub>CC</sub> +0.3	V
	Low		0		0.8	

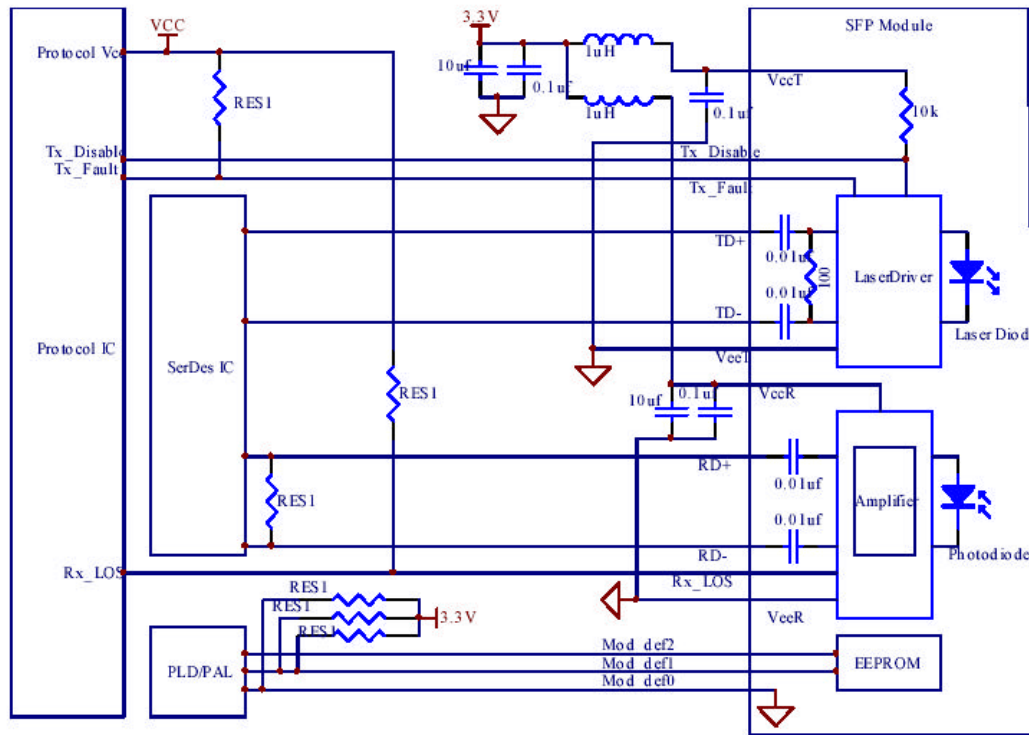
## SFP Transceiver Electrical Pad Layout



### Pin Function Definitions

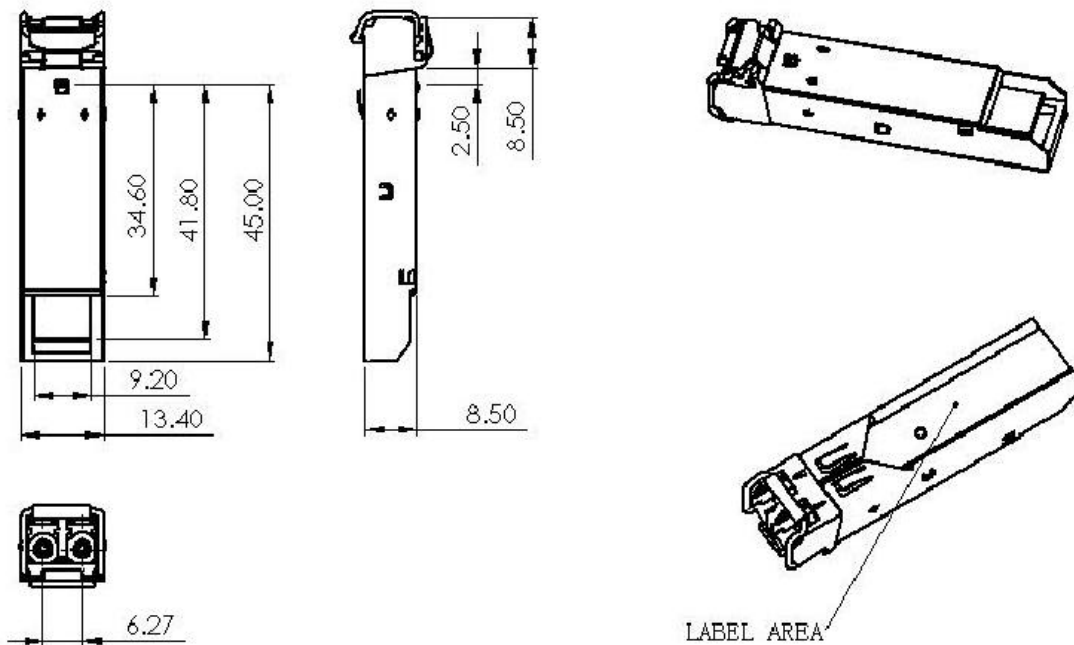
Pin No.	Name	Function	Plug Seq.
1	VeeT	Transmitter Ground	1
2	TX Fault	Transmitter Fault Indication	3
3	TX Disable	Transmitter Disable	3
4	MOD-DEF2	Module Definition 2	3
5	MOD-DEF1	Module Definition 1	3
6	MOD-DEF0	Module Definition 0	3
7	Rate Select	Not Connected	3
8	LOS	Loss of Signal	3
9	VeeR	Receiver Ground	1
10	VeeR	Receiver Ground	1
11	VeeR	Receiver Ground	1
12	RD-	Inv. Received Data Out	3
13	RD+	Received Data Out	3
14	VeeR	Receiver Ground	1
15	VccR	Receiver Power	2
16	VccT	Transmitter Power	2
17	VeeT	Transmitter Ground	1
18	TD+	Transmit Data In	3
19	TD-	Inv. Transmit Data In	3
20	VeeT	Transmitter Ground	1

### Recommend Circuit Schematic



RES1 = 4.7k to 10k

### Mechanical Specifications



DIMENSIONS IN MILLIMETERS

Figure 1: Mechanical Design Diagram

**Ordering information**

<b>Part No.</b>	<b>Data Rate</b>	<b>Laser</b>	<b>Fibre Type</b>	<b>Distance</b>	<b>Optical Interface</b>
FOCUS-1303-15	100Mbps/155Mbps	1310nm FP	SMF	15Km	LC
FOCUS-1303-40	100Mbps/155Mbps	1310nm FP	SMF	40Km	LC