



Features

- Diplexer Single Mode Single Fiber 1x9 SC Receptacle Connector
- Wavelength Tx 1310nm/Rx 1530 nm
- SONET OC-3 SDH STM-1 Compliant
- Single +3.3V Power Supply
- LVPECL Differential Inputs and Outputs
- Wave Solderable and Aqueous Washable
- LED Multisourced 1x9 transceiver interchangeable
- Class 1 Laser Int. Safety Standard IEC 825 Compliant
- Uncooled Laser diode with MQW structure
- Complies with Telcordia(Bellcore) GR-468-CORE
- Temperature Range: 0 to 70 °C
- Optical Isolation > 30 dB

Absolute Maximum Rating

Parameter	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	V_{CC}	0	3.6	V	
Output Current	I_{out}	-	30	mA	
Soldering Temperature	-	-	260	°C	10 seconds on leads only
Storage Temperature	T_{stg}	-40	85	°C	

Recommended Operating Condition

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{CC}	3.1	3.3	3.5	V
Operating Temperature	T_{opr}	0	-	70	°C
Data rate		-	155	-	Mbps

Transmitter Specifications, (0< T_{opr} <70°C, 3.1V< V_{CC} <3.5V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Optical Transmit Power	P_o	-5	-	0	dBm	Output power is coupled into a 9/125μm single mode fiber
Output center Wavelength	λ	1261	1310	1360	nm	
Output Spectrum Width	$\Delta\lambda$	-	-	6	nm	RMS(σ)
Extinction Ratio	ER	10	-	-	dB	
Output Eye		Compliant with ITU-T recommendation G.957/STM-1				
Optical Rise Time	t_r	-	-	2	ns	10% to 90% Values
Optical Fall Time	t_f	-	-	2	ns	10% to 90% Values
Optical Isolation		30	-	-	dB	Isolation potential between 1261-1360nm at least 30dB
Relative Intensity Noise	RIN	-	-	-116	dB/Hz	
Total Jitter	TJ	-	-	1.2	ns	Measured with 2 ²³ -1 PRBS with 72 ones and 72 zeros.

B-13/15-155-T3-SSC5

Transmitter Specifications, ($0 < T_{opr} < 70^{\circ}\text{C}$, $3.1\text{V} < V_{CC} < 3.5\text{V}$)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Electrical						
Power Supply Current	I_{CC}	-	-	200	mA	Maximum current is specified at V_{CC} = Maximum @ maximum temperature
Data Input Current-Low	I_{IL}	-350	-	-	μA	
Data Input Current-High	I_{IH}	-	-	350	μA	
Differential Input Voltage	$V_{IH}-V_{IL}$	300	-	-	mV	
Data Input Voltage-Low	$V_{IL}-V_{CC}$	-2.0	-	-1.58	V	These inputs are compatible with 10K, 10KH and 100K ECL and PECL inputs
Data Input Voltage-High	$V_{IH}-V_{CC}$	-1.1	-	-0.74	V	

Receiver Specifications, ($0 < T_{opr} < 70^{\circ}\text{C}$, $3.1\text{V} < V_{CC} < 3.5\text{V}$)

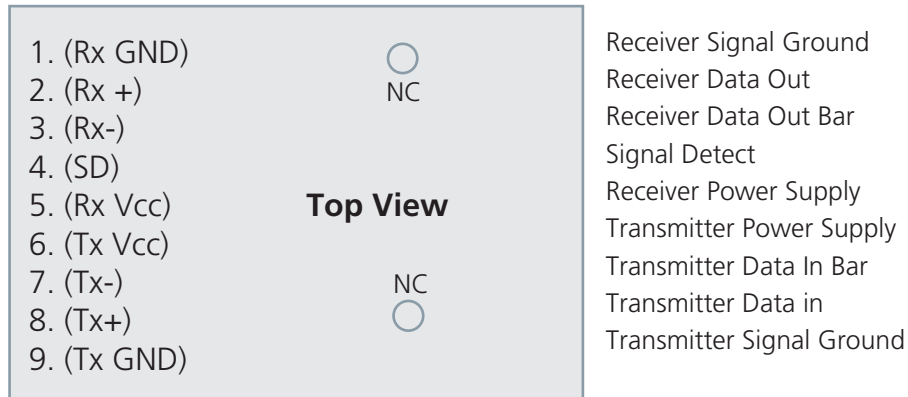
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Sensitivity	-	-	-	-33	dBm	measured with 2 ²³ -1 PRBS, BER = 10^{-10}
Maximum Input Power	P_{in}	-3	-	-	dBm	
Signal Detect-Asserted ^{Note1}	P_a	-	-	-33	dBm	Measured on transition: low to high
Signal Detect-Deasserted ^{Note1}	P_d	-41	-	-	dBm	Measured on transition: high to low
Signal Detect-Hysteresis		1	-	4	dB	
Wavelength of Operation		1480	-	1600	nm	

Note 1: Regardless of whether or not the Tx is turned on, SD should be asserted at less than -33 dBm and deasserted at higher than -45 dBm of input power level from the outside Tx.

Receiver Specifications, ($0 < T_{opr} < 70^{\circ}\text{C}$, $3.1\text{V} < V_{CC} < 3.5\text{V}$)

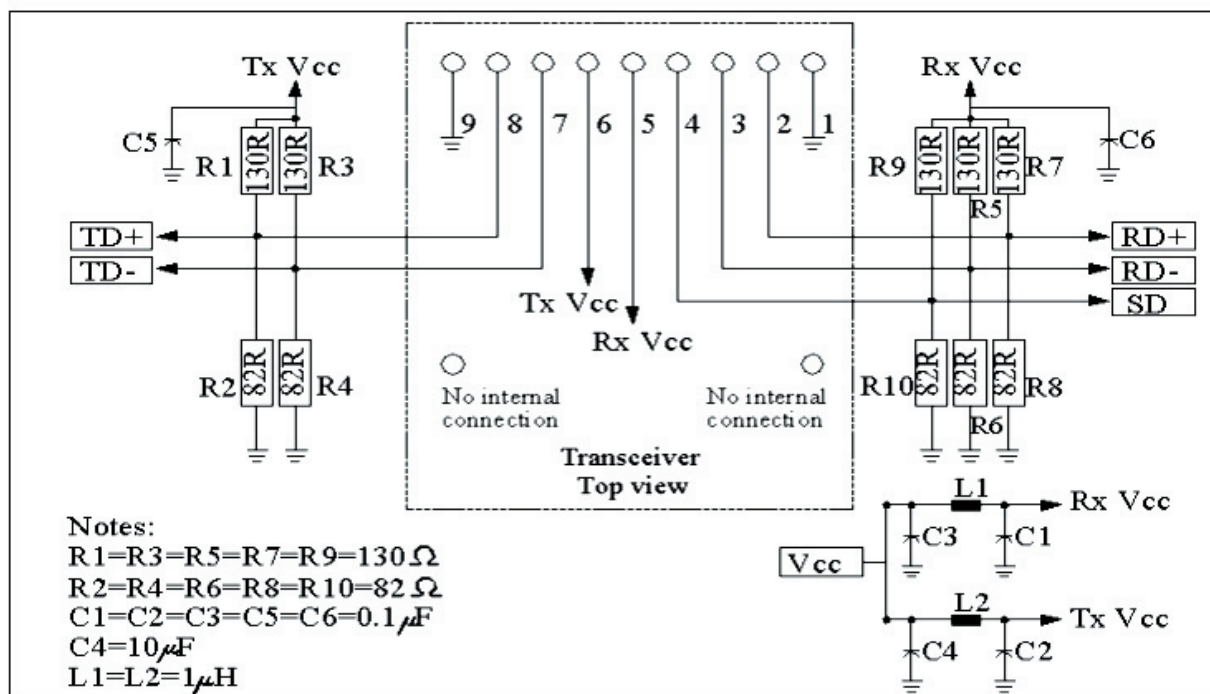
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Electrical						
Power Supply Current	I_{CC}	-	-	100	mA	The current excludes the output load current
Data Output Voltage-Low	$V_{OL}-V_{CC}$	-2	-	-1.58	V	These outputs are compatible with 10K, 10KH and 100K ECL and PECL outputs.
Data Output Voltage-High	$V_{OH}-V_{CC}$	-1.1	-	-0.74	V	
Signal Detect Output Voltage-Low	$V_{SDL}-V_{CC}$	-2	-	-1.58	V	
Signal Detect Output Voltage-High	$V_{SDH}-V_{CC}$	-1.1	-	-0.74	V	

Connection Diagram



PIN	Symbol	Notes
1	RxGND	Directly connect this pin to the receiver ground plane
2	RD+	See recommended circuit schematic
3	RD-	See recommended circuit schematic
4	SD	Active high on this indicates a received optical signal
5	RxVcc	+3.3V dc power for the receiver section
6	TxVcc	+3.3V dc power for the transmitter section
7	TD-	See recommended circuit schematic
8	TD+	See recommended circuit schematic
9	TxGND	Directly connect this pin to the transmitter ground plane

Recommended Circuit Schematic



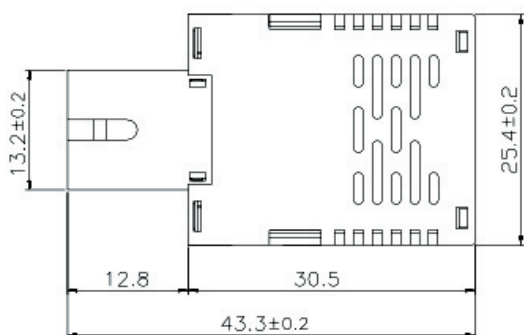
The split-loaded terminations for ECL signals need to be located at the input of devices receiving those ECL signals.
 The power supply filtering is required for good EMI performance. Use short tracks from the inductor L1/L2 to the module Rx Vcc.
 A GND plane under the module is required for good EMI and sensitivity performance.

Package Diagram

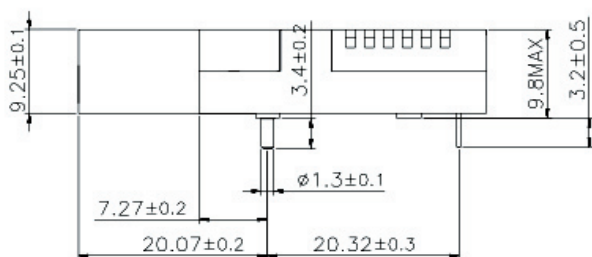
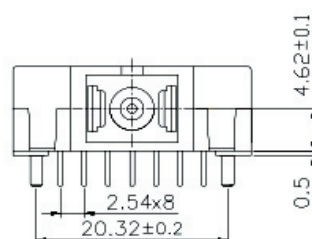
Units in mm (inch)

Diplexer Transceiver Assembly (Receptacle Type)

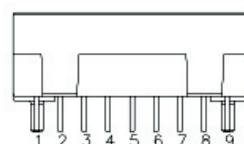
Top View



Front View



Side View



Rear View

Ordering Information

B -13/15 - 155 - T3 - S SC 5

- Tx Wavelength =1310 nm
Rx Wavelength = 1530 nm

- Communication protocol
(155 Mbps)

- +3.3V Transceiver

- Single mode fiber

- Connector options

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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