

## 155Mbps 1310nm Multi-Mode 1X9 Transceiver 2km

### Features:

- 3.3V DC power supply
- 1310nm LED, 155Mbps, multi-mode, 2km
- LVPECL Signal Detection Output
- Standard SC/FC/ST connector
- Standard industrial 1X9 Package
- ROHS compliant
- Compliant with class one laser product IEC 60825-1
- Compliant with ITU-T G957, G958 Specifications

### Application:

- SONET OC-3 / SDH STM-1 Equipment
- Fast Ethernet 155Mb/s Links
- Optical access network



## Description

Our 1310nm 155Mbps multi-mode 1X9 is a high performance, cost effective transceiver. It is designed to perform 155Mbps data rate application up to 2km distance transmission. The transceiver includes two sections: the transmitter section consists of a high reliability 1310nm LED in eye safety; the receiver section consists of a high-speed InGaAs PIN photodiode (PD) and trans-impedance preamplifier. The output of the PD drives the post-amplification, quantizing, and optical signal detection circuits. The receiver is built in the LOS monitoring function. For further information, please see 1x9 MSA standards.

<b>Absolute Maximum Ratings</b>					
<b>Parameter</b>	<b>Symbol</b>	<b>Min.</b>	<b>Max.</b>	<b>Units</b>	<b>Note</b>
Storage Temperature	Ts	-40	85	°C	-
Power Supply Voltage	Vcc	-0.5	4.0	V	-
Soldering Temperature	-	-	260	°C	10 seconds on leads only
Input Voltage	Vin	GND	Vcc	V	-

<b>Recommended Operating Conditions</b>					
<b>Parameter</b>	<b>Symbol</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Units</b>
Power Supply Voltage	Vcc	3.14	3.3	3.47	V
Operating Temperature	Top	0	-	70	°C
Data Rate	-	-	155.52	-	Mbps
Power Supply Current	Icc	-	-	250	mA

<b>Transmitter Specifications (0°C &lt; Top &lt; 70°C, 3.14V &lt; Vcc &lt; 3.47V)</b>					
Parameter	Symbol	Min.	Typ.	Max.	Units
<b>Optical</b>					
Optical Transmit Power	P <sub>O</sub>	-20	-	-14	dBm
Optical Center Wavelength	λ <sub>C</sub>	1260	1310	1360	nm
Output Spectrum Width	Δλ	-	2	4	nm(RMS)
Extinction Ratio	E <sub>R</sub>	9	-	-	dB
Output Eye	Compliance with ITU-T G.957				
Optical Rise Time (10%~90%)	t <sub>r</sub>	-	1	2	ns
Optical Fall Time (10%~90%)	t <sub>f</sub>	-	1	2	ns
Relative Intensity Noise	RIN	-	-	-116	dB/Hz
<b>Electrical</b>					
Data Input Current – Low	-	-350	-	-	μA
Data Input Current – High	-	-	-	350	μA
Differential Input Voltage	V <sub>IH</sub> -V <sub>IL</sub>	200	-	1600	mV

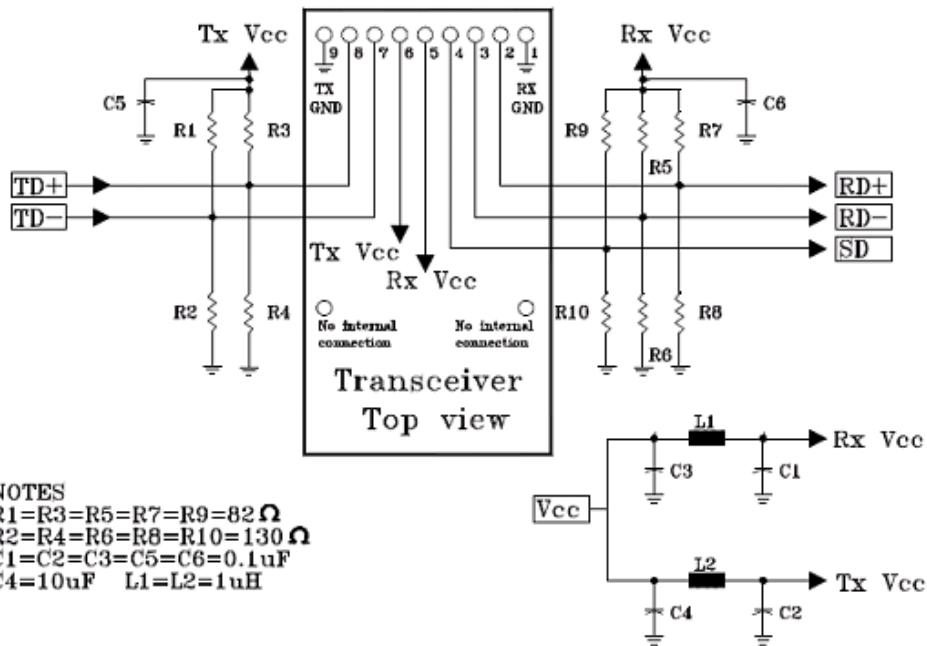
<b>Receiver Specifications (0°C &lt; Top &lt; 70°C, 3.14V &lt; Vcc &lt; 3.47V)</b>					
Parameter	Symbol	Min.	Typ.	Max.	Units
<b>Optical</b>					
Maximum Input Power (Sensitivity)	Sen	-	-	-30	dBm
Maximum Input Power(Saturation)	P <sub>MAX</sub>	-3			dBm

Signal Detect -- Asserted	$P_a$			-30	dBm
Signal Detect -- Deasserted	$P_d$	-45			dBm
Signal Detect -- Hysteresis	$P_{hys}$	0.5		5	dB
Wavelength of Operation	$\lambda$	1100		1600	nm
<b>Electrical</b>					
Data Output Voltage – Low	$V_{OL}-V_{CC}$	-1830	-	-1555	mV
Data Output Voltage – High	$V_{OH}-V_{CC}$	-1085	-	-880	mV
Signal Detect Output Voltage -- Low	$V_{SOL}-V_{CC}$	-2.0	-	-1.58	V
Signal Detect Output Voltage -- High	$V_{SOL}-V_{CC}$	-1.1	-	-0.74	V

**PIN ASSIGNMENT**

<b>1 Receiver Signal Ground</b>	
<b>2 Receiver Data Out</b>	<b>O N.C.</b>
<b>3 Receiver Data Out Bar</b>	
<b>4 Signal Detect</b>	
<b>5 Receiver Power Supply</b>	<b>Top View</b>
<b>6 Transmitter Power Supply</b>	
<b>7 Transmitter Data In Bar</b>	
<b>8 Transmitter Data In</b>	<b>O N.C.</b>
<b>9 Transmitter Signal Ground</b>	

**RECOMMENDED CIRCUIT**



**PACKAGE DIAGRAM (Units in mm)**

SC Type

