

622Mb/s Transceiver (HDTR-12-131X1X52F)

1X9, Duplex SC, +5V
1310nm FP, Single-Mode



Features

- ◇ 1X9 Pin Package Single-Mode Transceiver
- ◇ Single +5V Power Supply
- ◇ PECL Logic Interface
- ◇ Fully Compliant with ITU-T G.957, G.958 Specification
- ◇ Class I Laser Product, Compliant with IEC 60825-1
- ◇ Compliant with Telcordia GR-468-CORE
- ◇ RoHS Compliant Products Available



Applications

- ◇ SONET/SDH/PDH
- ◇ ATM

Description

Hi-Optel's HDTR-12-131X1X52F Transceiver is a high performance, cost effective module, which is compliant with SONET OC-12/SDH STM-4 recommendation. This transceiver operates at the wavelength of 1310nm. The transmitter section incorporates an FP and driver IC with temperature compensation and automatic power control function. The receiver section incorporates an efficient InGaAs/InP PIN photodiode and transimpedance with AGC for wide dynamic range. The transceiver has excellent immunity and reliability.

Specification

Electrical and Optical Characteristics: (Condition: $T_a = T_{OP}$)

Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	622	-	Mb/s
Transmitter Section					
Centre Wavelength	λ_c	1293	1310	1330	nm
Output Spectral Width	$\Delta\lambda$ (RMS)	-	-	4	nm
Average Output Power	P_o	-3	-	+2	dBm
Extinction Ratio	E.R.	10	-	-	dB
Supply Current	I_{CC}	-	70	100	mA
Output Optical Eye	Compliant with ITU-T G.957				
Data Input Voltage-High, Low	$V_{IH}-V_{CC}$	-1.49	-1.3	-1.19	V
Input Differential Voltage	V_{ID}	0.5	-	1.6	V
Receiver Section					
Receive Sensitivity	P_{min}	-	-	-28	dBm
Maximum Input Power	P_{MAX}	-3	-	-	dBm
Signal Detection-Asserted	P_{H-L}	-40	-	-	dBm
Signal Detection-Deserted	P_{L-H}	-	-	-30	dBm
Operating Wavelength	λ_c	1100	-	1600	nm
Supply Current	I_{CC}	-	60	100	mA

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Date Output High Voltage	$V_{OH}-V_{CC}$	-1.1	-	-0.9	V
Date Output Low Voltage	$V_{OL}-V_{CC}$	-1.89	-	-1.6	V

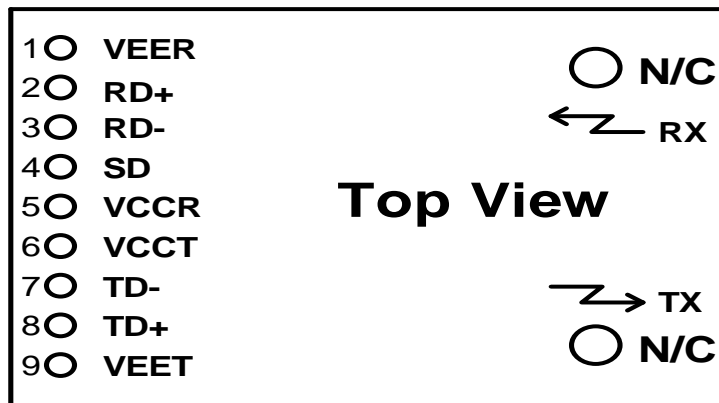
Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_{ST}	-40	+85	°C
Supply Voltage	V_{CC}	0	+6	V
Input Voltage	V_{IN}	0	V_{CC}	V
Output Current	I_O	0	30	mA
Soldering Temperature & Time	-		240/10	°C/S

Recommended Operating Environment

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V_{CC}	+4.75	+5.0	+5.25	V
Operating Temperature	T_{OP} (HDTR-12-131X1152F)	0	-	+70	°C
	T_{OP} (HDTR-12-131X1252F)	-40	-	+85	°C

Pin Description



Pin	Name	Level	Description
1	VEER		Negative power of receiver section, normally grounded
2	RD+	PECL	Receiver Data Output
3	RD-	PECL	Inverted Receiver Data Output
4	SD	PECL	Optical alarm of receiver section, High level when normal, low level when no light
5	VCCR		Positive power of receiver section, normally +5.0V

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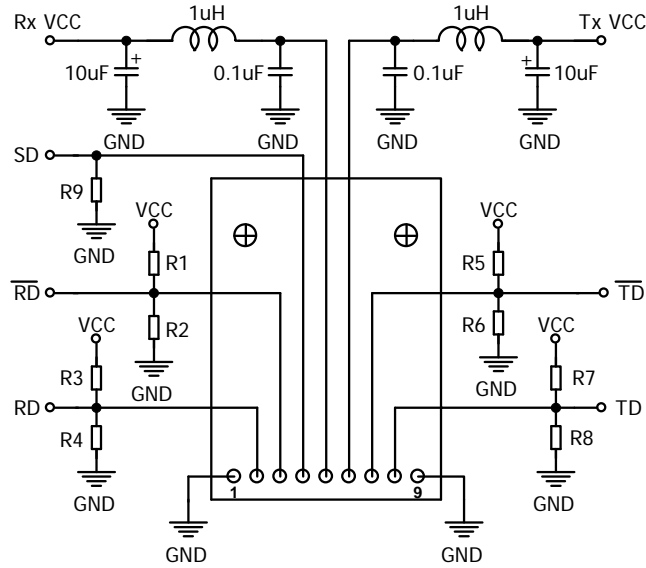
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6	VCCT		Positive power of transmitter section, normally +5.0V
7	TD-	PECL	Inverted Transmitter Data input
8	TD+	PECL	Transmitter Data input
9	VEET		Negative power of transmitter section, normally grounded

Recommended Circuit



NOTE:

1:VCC=+5V

2:VCC=+3.3V

R1=R3=R5=R7=82R R1=R3=R5=R7=130R

R2=R4=R6=R8=130R R2=R4=R6=R8=82R

R9=390R R9=200R

Data-PECL.SD-PECL

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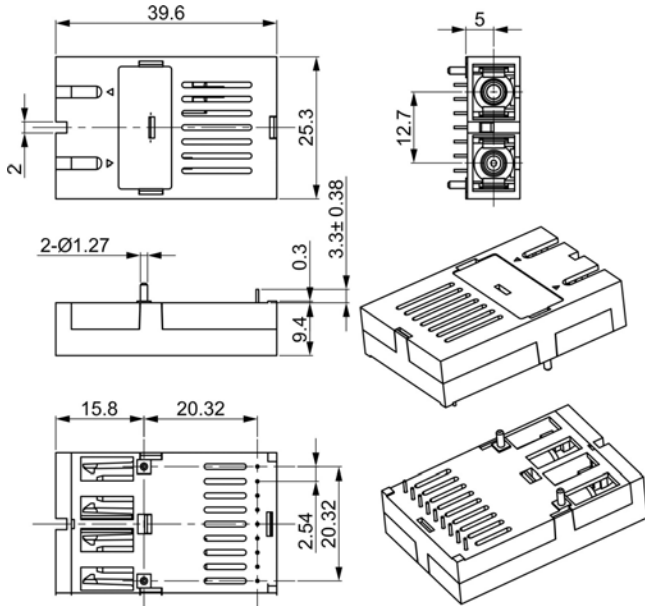
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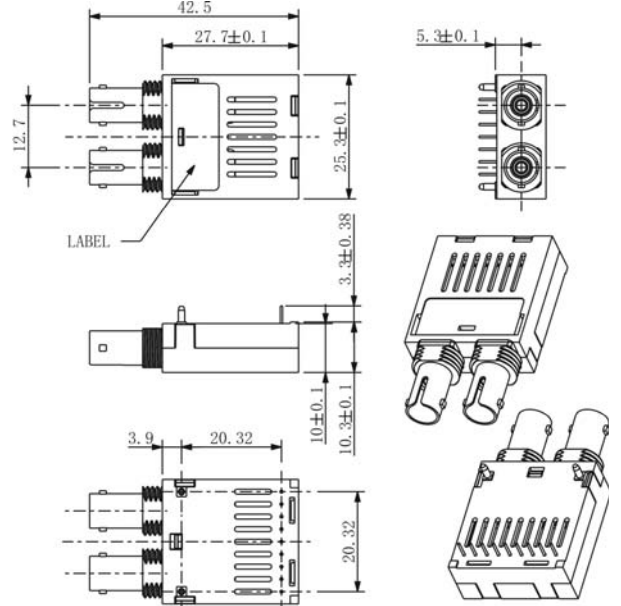
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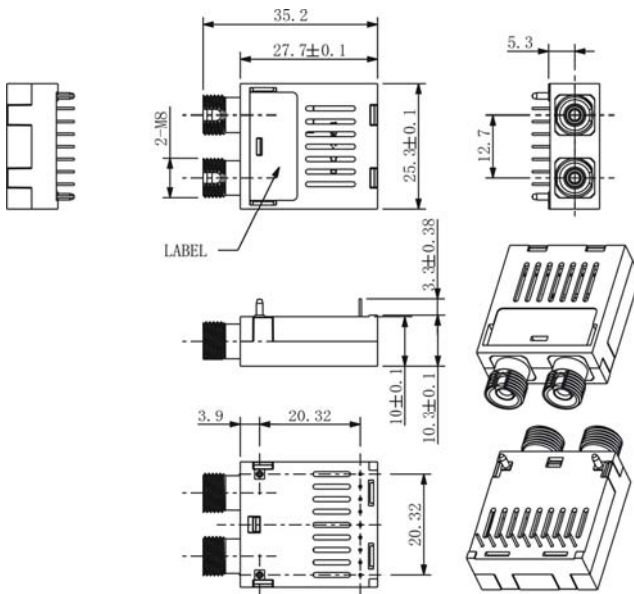
Mechanical Dimensions(Unit:mm)



1X9 DUPLEX SC
(HDTR-12-13111X52F)



1X9 DUPLEX ST
(HDTR-12-13121X52F)



1X9 DUPLEX FC
(HDTR-12-13131X52F)

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