

SFF Optical Transceiver (HSFF-03-1311S)

155Mb/s, Duplex LC, +3.3V

1310nm FP, 2X5 SFF



Features:

- ◇ Small Form Factor 2X5 Pin Package
- ◇ Duplex LC Connector, 1310nm FP
- ◇ Compliant with ITU- T G. 957/958
- ◇ Single +3.3V Power Supply, LVPECL Data Interface
- ◇ Compliant with Telcordia GR-468-CORE
- ◇ Class 1/1M Laser Product, Compliant with IEC825, FDA21 CFR1040.10 and CFR1040.11
- ◇ Excellent EMI & ESD Protection
- ◇ RoHS Compliant Products Available



Applications:

- ◇ SDH STM-1
- ◇ SONET OC-03
- ◇ Fast Ethernet
- ◇ ATM and Other Optical Data Transmission

Description:

Hi-Optel's HSFF-03-1311S SFF Transceiver is a high performance, cost effective module for serial telecom and datacom applications, all versions are compliant with SONET/SDH recommendations from OC-03 specifications. This module is designed for Single-Mode fiber and operates at the wavelength of 1310nm. The transmitter section incorporates FP and driver IC with temperature compensation and automatic power control circuit. The receiver section incorporates an efficient InGaAs/InP PIN photodiode and transimpedance with AGC for wide dynamic range. A LVPECL data interface simplifies interface to external circuitry. It is packaged in a small form factor multisourced 2X5 pin metal housing for excellent EMI shielding. The transceiver has excellent immunity and reliability.

Specification:

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

Transmitter Section:

Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	155	-	Mb/s
Centre Wavelength	λ_c	1296	1310	1330	nm
Output Spectral Width	$\Delta\lambda(\text{RMS})$	-	-	4	nm
Average Output Power	P_O	-5	-	0	dBm
Extinction Ratio	E.R.	10	-	-	dB
Output Optical Eye	Compliant with ITU-T G.957				
Rise/Fall Time (10%/90% Peak)	T_r/T_f	-	-	3.0	ns
Disable Input Voltage-High	V_H	2.0	-	-	V
Disable Input Voltage-Low	V_L	-	-	0.8	V

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Disable Output Optical Power	--	-	-	-40	dBm
Supply Current	I _{CC}	-	-	120	mA

Receiver Section:

Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	155	-	Mb/s
Data Output Voltage-High	V _H	V _{CC} -1.03	-	V _{CC} -0.89	V
Data Output Voltage-Low	V _L	V _{CC} -1.82	-	V _{CC} -1.63	V
SD Output Voltage-High	V _H	V _{CC} -1.03	-	V _{CC} -0.89	V
SD Output Voltage-Low	V _L	V _{CC} -1.82	-	V _{CC} -1.63	V
Receiver Sensitivity (BER=1E-12 for a 2 ⁷ -1 PRBS)	Sen	-	-	-36	dBm
Operating Optical Wavelength	λ	1100	-	1600	nm
Signal Detect Assert	P _{H→L}	-	-	-37	dBm
Signal Detect Deassert	P _{L→H}	-47	-	-	dBm
Signal Detect Hysteresis		1.0	-	-	dBm
Supply Current	I _{CC}	-	-	100	mA

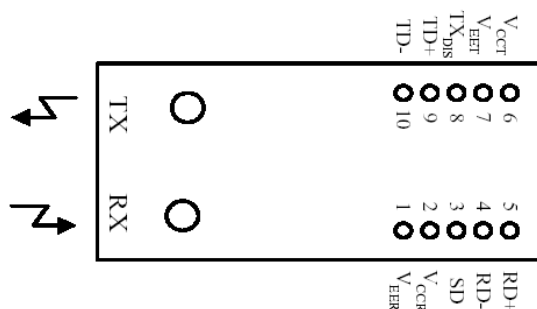
● **Absolute Maximum Ratings:**

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Operating Temperature	T _{IP}	0	+70	°C
Supply Voltage	V _{CC}	0	+3.6	V
Input Voltage	V _{IN}	0	V _{CC}	V
Output Current	I _O	0	30	mA
Soldering Temperature & Time	-	-	260/10	°C/S

● **Recommended Operating Environment:**

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V _{CC}	+3.1	+3.3	+3.5	V
Operating Temperature	T _{OP}	0	-	+70	°C

Pin Assignment: (Top View)



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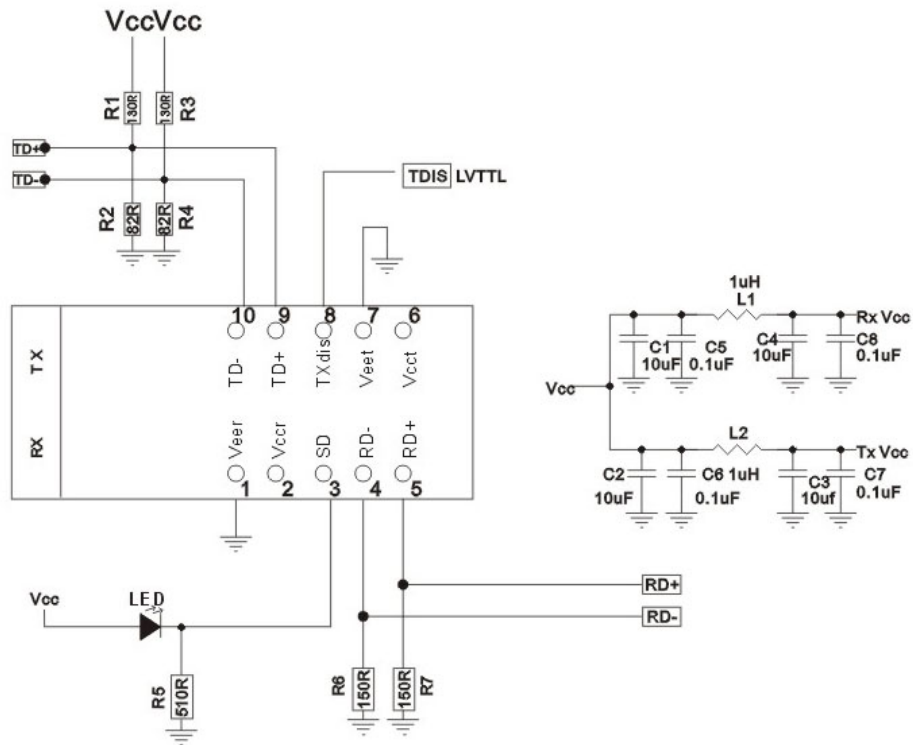
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Pin	Signal Name	Description
Mount Studs and Solder Post		
	Mounting Stud	Assembling the Transceiver to PCB
	Ground	Connecting to Date Ground Plane
Receiver Section		
1	Veer	Receiver power ground
2	Vccr	Receiver power supply
3	SD	Signal detect output(LVPECL/LVTTL), low logical level indicates loss of signal
4	RD-	Negative receiver signal output (LVPECL).
5	RD+	Positive receiver signal output (LVPECL).
Transmitter Section		
6	Vcct	Transmitter power supply
7	Veet	Transmitter power ground
8	TXdisable	Transmitter disable(LVTTL), high logical level indicates transmitter is disabled
9	TD+	Positive transmitter data input (LVPECL).
10	TD-	Negative transmitter data input (LVPECL).

Recommended Circuit:



SD - LVPECL, DC Coupling

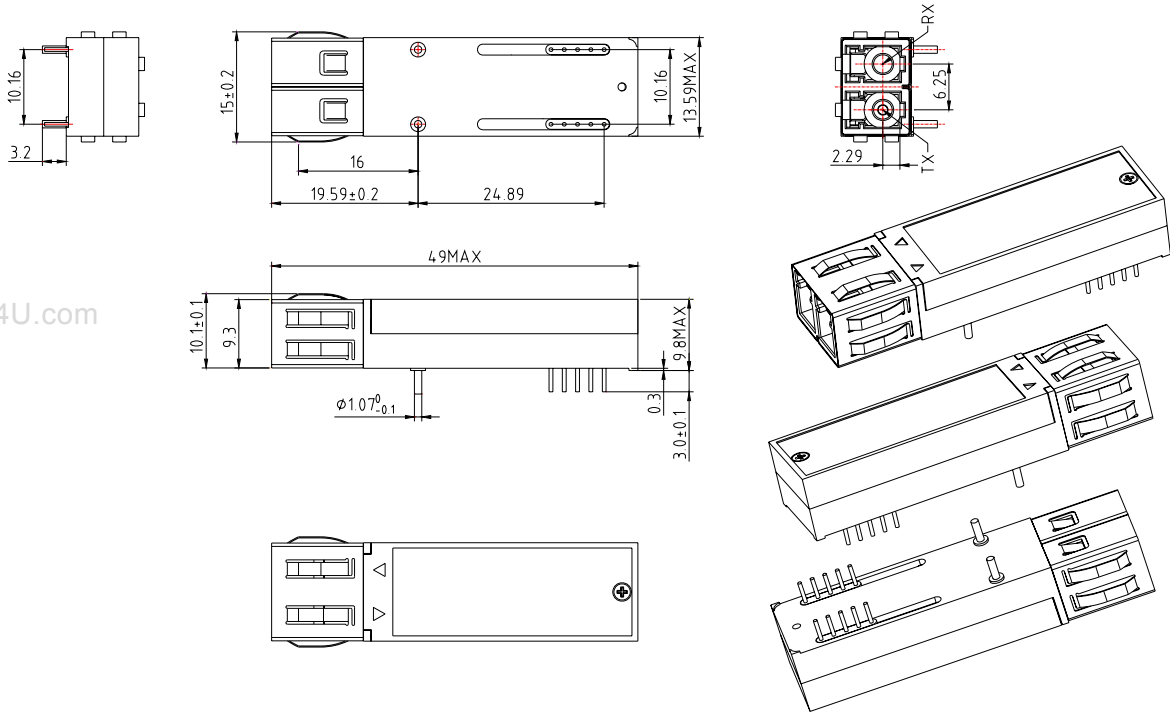
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Mechanical Dimensions:



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