

Features:

- Duplex SC or LC Single Mode Transceiver
- Small Form Factor Multi-sourced 2x5 Pin Package
- Ultra Long reach SONET OC-3/SDH STM-1 Compliant
- Single +3.3V Power Supply
- LVPECL Differential Inputs and Outputs
- LVPECL Signal Detection Output
- Temperature Range: 0 to 70 °C
- Class 1 Laser International Safety Standard IEC 825 Compliant
- Solder ability to MIL-STD-883, Method 2003
- Flammability to UL94V0
- Humidity RH 5-85% (5-95% short term) to IEC 68-2-3
- Complies with Telcordia(Bellcore) GR-468-CORE
- Uncooled Laser Diode with MQW Structure
- EMI Shielding Finger Optional
- ATM 155 Mbps links
- RoHS Compliance Available



Table 1 – Absolute Maximum Rating

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes	
Power	Supply	Voltage	Vcc	0	-	3.6	V
Output	Current	I _{out}	-	-	30	mA	
Soldering	Temperature	-	-	-	260	°C	1
Storage	Temperature	Tstg	-40	-	85	°C	

Note 1: 10 seconds on leads only

Table 2 – Recommended Operating Condition

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes	
Power	Supply	Voltage	Vcc	3.1	3.3	3.5	V
Operating	Temperature	(Case)	T _{opr}	0	-	70	°C
Data	Rate	DR	-	155	-	Mbps	

Table 3 – Transmitter Specifications (Optical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Optical Transmit Power	P _o	-15	-	-3	dBm	
Output Center Wavelength	λ_c	1261	1310	1360	nm	
Output Spectrum Width	$\Delta \lambda$	-	-	7.7	nm	
Optical Rise/Fall Time	t _r /t _f		-	2	ns	2
Extinction Ratio	ER	8.2	-		dB	
Output Eye	Compliant with Bellcore GR-253-CORE and ITU Recommendation					
Relative Intensity Noise	RIN	-	-	-116	dB/Hz	
Total Jitter	T _J	-	-	1.2	ns	3

Note 2: 10% to 90% Values

Note 3: Measured with 2₂₃-1 PRBS with 72 ones and 72 zeros.

Table 4 – Transmitter Specifications (Electrical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Current	I _{CC}	-	-	180	mA	4
Transmitter Enable Voltage	V _{EN}	0	-	0.8	V	
Transmitter Disable Voltage	V _D	2	-	V _{CC}	V	
Data Input Current-Low	I _{IL}	-200	-	-	μA	
Data Input Current-High	I _{IH}	-	-	200	μA	
Data Input Voltage-Low	V _{IL} -V _{CC}	-2.0	-	-1.58	V	5
Data Input Voltage-High	V _{IH} -V _{CC}	-1.1	-	-0.74	V	5

Note 4: Maximum current is specified at V_{CC} = Maximum @ maximum temperature

Note 5: These inputs are compatible with 10K, 10KH and 100K ECL and PECL inputs

Table 5 – Receiver Specifications (Optical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Sensitivity	-	-	-	-34	dBm	6
Maximum Input Power	P _{in}	-3	-	-	dBm	
Signal Detect-Asserted	P _a	-	-	-32	dBm	
Signal Detect-Deasserted	P _d	-48	-	-	dBm	
Signal Detect-Hysteresis	-	1	-	4	dB	

Wavelength of Operation	-	1100	-	1600	nm	
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Note 6: Measured with 2²³-1 PRBS/BER = 10⁻¹⁰

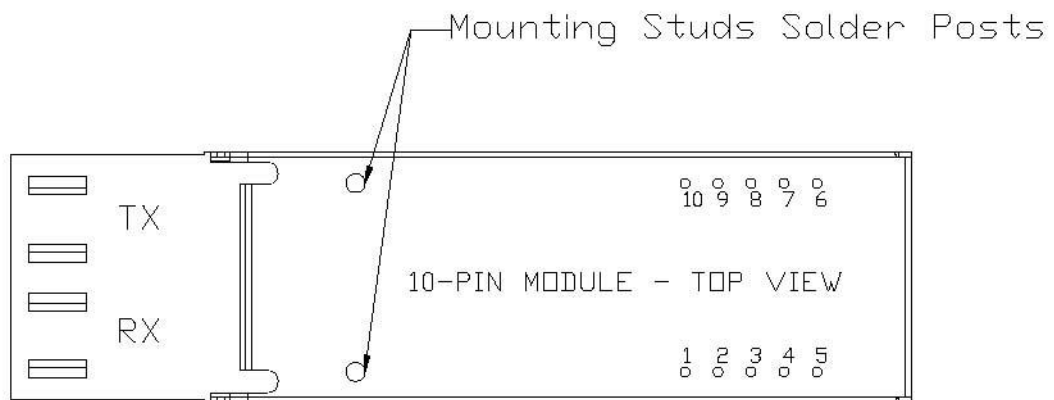
Table 6 – Receiver Specifications (Electrical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Current	I _{CC}	-	-	100	mA	7
Data Output Voltage-Low	V _{OL} -V _{CC}	-2	-	-1.58	V	8
Data Output Voltage-High	V _{OH} -V _{CC}	-1.1	-	-0.74	V	8
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

Note 7: The current excludes the output load current

Note 8: These outputs are compatible with 10K, 10KH and 100KECL and LVPECL outputs.

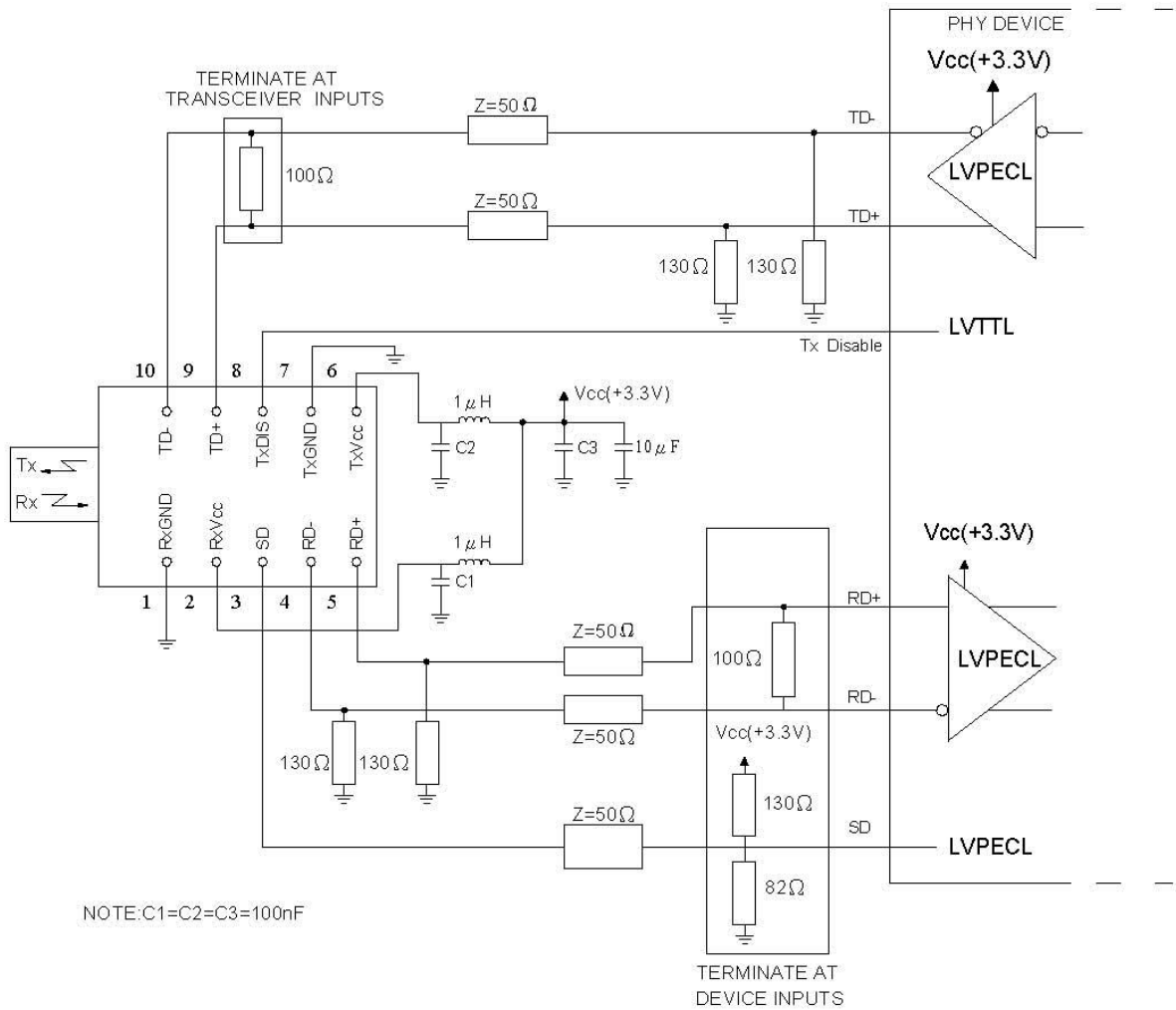
Connection Diagram



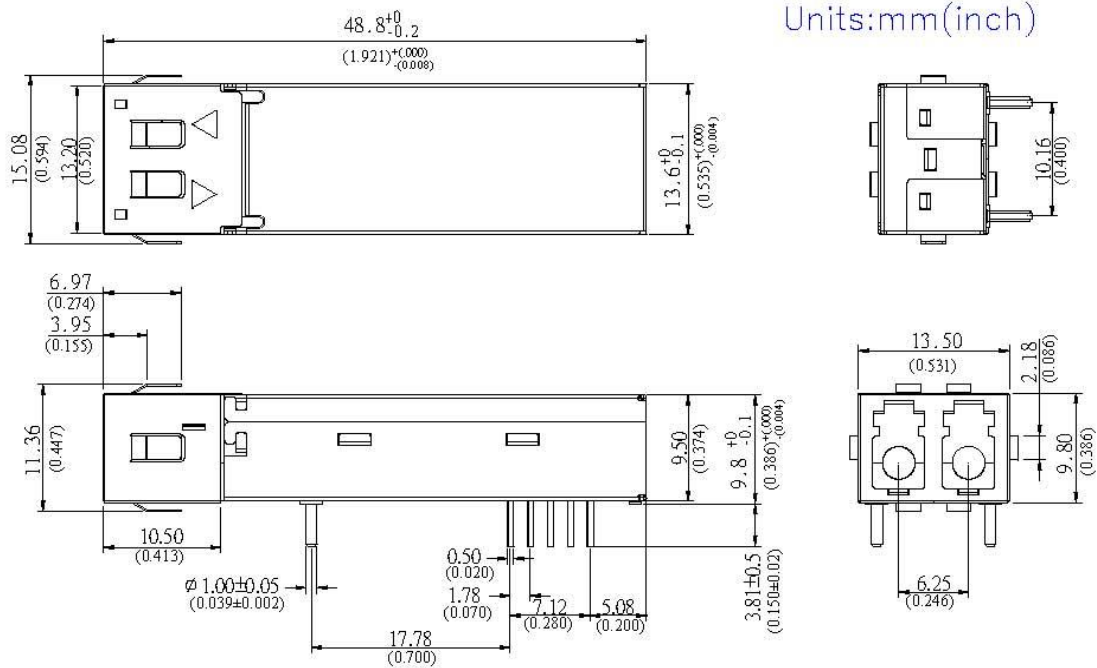
Pin Descriptions

Pin	Name	Description
1	RxGND	Directly connect this pin to the receiver ground plane
2	RxVcct	+3.3V dc power for the receiver section
3	SD	Active high on this indicates a received optical signal (LVPECL)
4	RD-	Receiver Data Out Bar (LVPECL)
5	RD+	Receiver Data Out (LVPECL)
6	TxVcc	+3.3V DC power for the transmitter section
7	TxGND	Directly connect this pin to the Transmitter ground plane
8	TxDIS	Transmitter Disable (LVTTTL)
9	TD+	Transmitter Data In (LVPECL)
10	TD-	Transmitter Data In Bar (LVPECL)
Attaching Posts		The attaching posts are at case potential and may be connected to chassis ground. They are isolated from circuit ground.

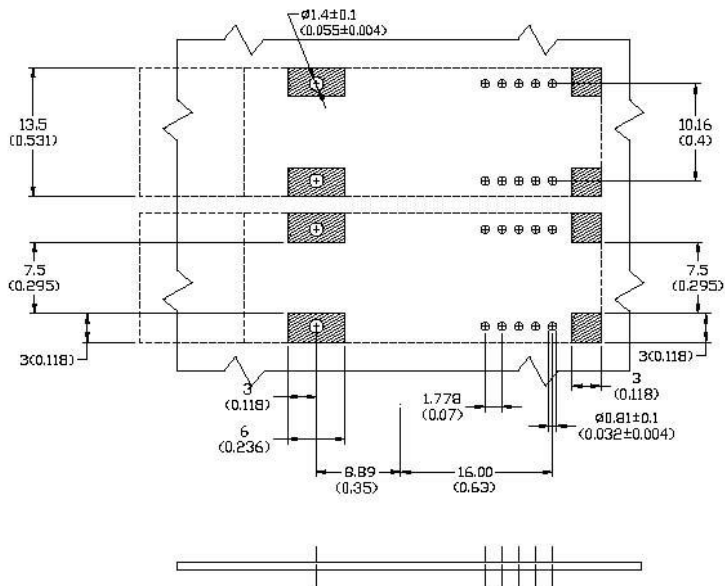
Recommended Circuit Schematic



Package Diagram



Recommended Board Layout Hole Pattern

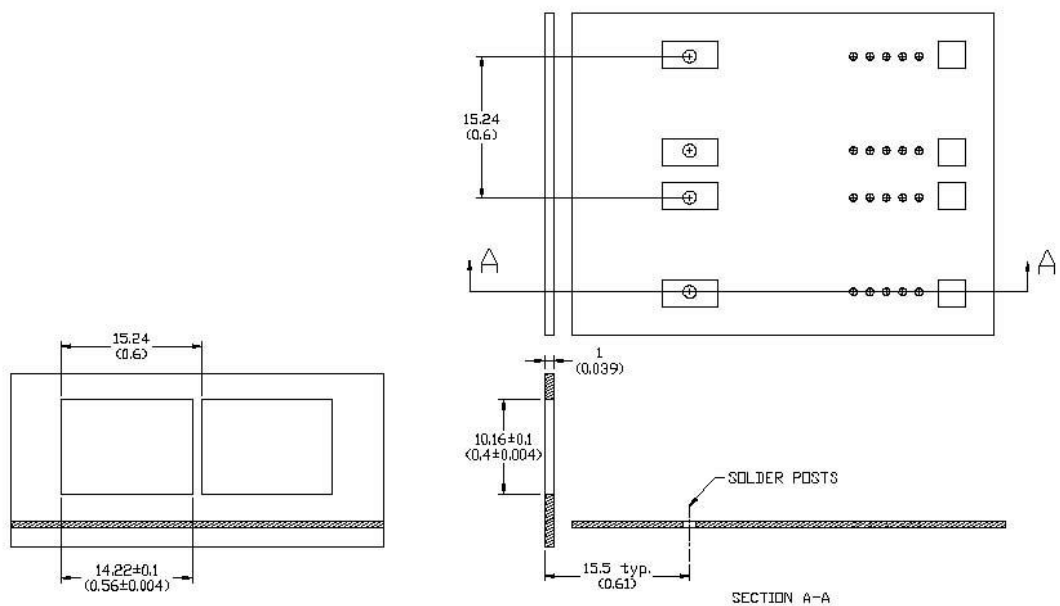


DIMENSION IN MILLIMETER (INCHES)

NOTES:

1. THIS FIGURE DESCRIBE THE RECOMMAND CIRCUIT BOARD LAYOUT FOR THE SFF TRANSCEIVER.
2. THE HATCHED AREAS ARE KEEP-OUT AREAS RESERVED FOR HOUSING STANDOFF. NO METAL TRACES OR GROUND CONNECTION IN KEEP-OUT AREAS.
3. THE MOUNTING STUDS SHOULD BE SOLDERED TO CHASSIS GROUND FOR MECHANICAL INTEGRITY.

Recommended Panel Mounting



DIMENSION IN MILLIMETER (INCHES)

Ordering Information

Part Number	Wavelength	Monitor	Connector	Temperature
HOLS-F1132-L3-CF	1310nm	No DDM	LC/UPC	0°C~70°C
HOLS-F1132-S3-CF	1310nm	No DDM	SC/UPC	0°C~70°C