

Features

- SMPTE 259M/292M/424M compatible
- Robust error free transmission of signals from 50Mbps to 3Gbps with up to 40km single-mode fiber
- Maximum distance of 40km under worst-case conditions and 3Gbps video pathological signals
- Supports video pathological patterns for SD-SDI, HD-SDI and 3G-SDI
- SFF package with single LC receptacle.
- Metal enclosure for lower EMI
- +3.3V single power supply.
- Laser disable pin
- Compliant ROHS and lead free

Applications

- SMPTE 297-2006 compatible electrical-to-optical interfaces

Descriptions

The CTF55D6-21-SDI is a single channel optical transmitter module designed to transmit optical serial digital signals as defined in SMPTE 297-2006. The CTF55D6-21-SDI is specifically designed for robust performance in the presence of SDI pathological patterns for SMPTE 259M, SMPTE 292M and SMPTE 424M serial rates.

Ordering Information

Part Number	Package	Temperature Range
CTF55D6-21-SDI	SFF	0°C to 70°C

Functional Block Diagram

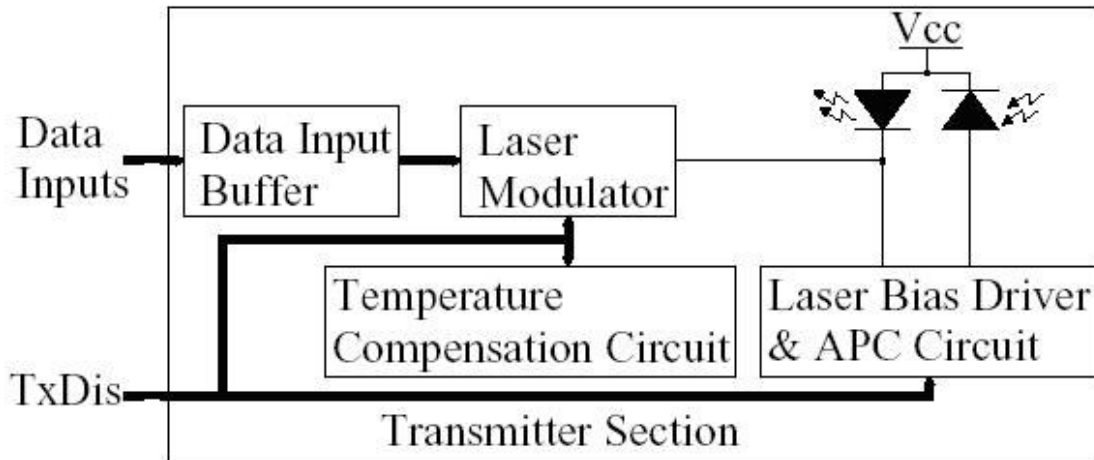
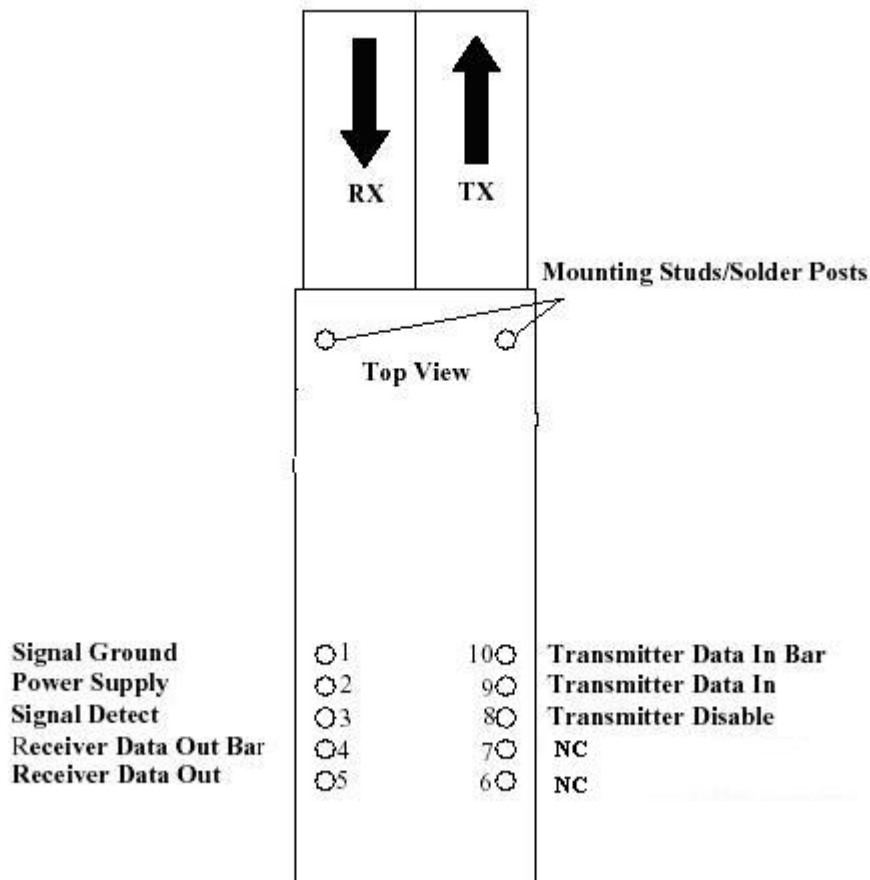


Figure 1: CTF55D6-21-SDI Functional Block Diagram

Pin Description

Pin Out Diagram



Pin Function Definitions

Pin#	Name	Function	Notes
		Mounting Studs/Solder Poster	Note 1
1	GND	Signal Grounding	Note 2
2	VCC	Power Supply	Note 3
3	SD	Signal Detect	Note 4
4	RD-	Receiver Data Out Bar	Note 5
5	RD+	Receiver Data Out	Note 5
6	NC	-	-
7	NC	-	-
8	TxDis	Transmitter Disable	Note 6
9	TD+	Transmitter Data In	Note 7
10	TD-	Transmitter Data In Bar	Note 7

Note:

1. The two mounting studs did not be connected to the interior of ground. They are provided for transceiver mechanical attachment to the circuit board. It is recommended that the holes in the circuit board be connected to chassis ground.
2. Directly connect these pins to the ground plane.
3. Provide +3.3V DC via the recommend Host Board power supply filter circuit. Locate the power supply filter circuit as close as possible to the VCC pin.
4. Normal optical input levels to the receiver result in logic "0" output. Low optical input levels to the receiver result in a logic "1" output.
5. These are the differential receiver outputs.
6. LVTTTL logic level, to enable module connect to TTL logic low "0".
7. These are the differential transmitter inputs. They are DC-coupled.

Recommended Host Board Supply Filtering

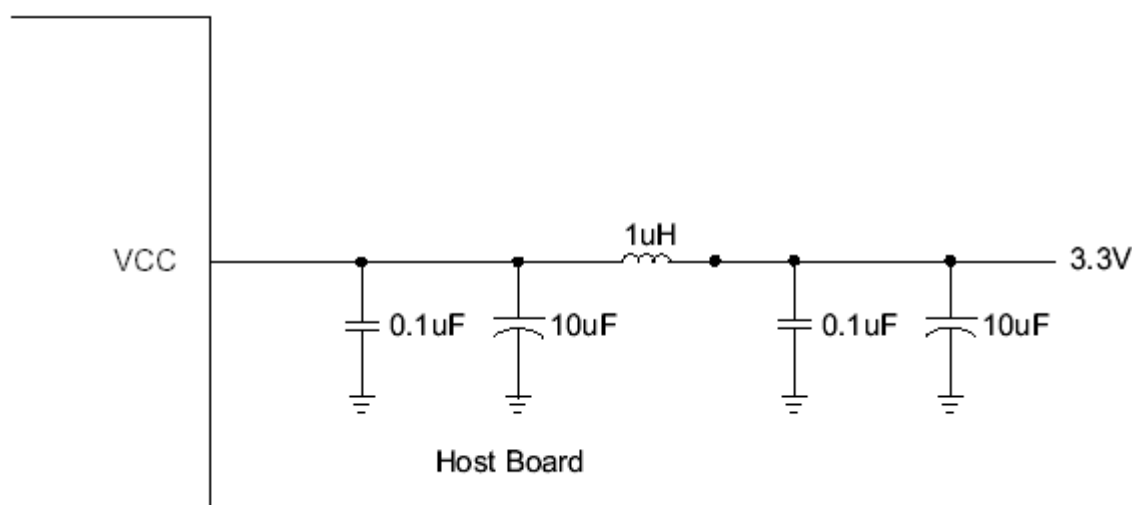


Figure 2: Recommended Host Board Supply Filtering

Performance Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Operating case Temperature	T _{case}	-20	+85	°C
Input Voltage	-	GND	VCC	V
Power Supply Voltage	VCC-VEE	-0.5	+3.6	V

Operating Environment

Parameter	Symbol	Min.	Max.	Unit
Power Supply Voltage	VCC	+3.1	+3.5	V
Operating Temperature	To	0	+70	°C

Transmitter E-O characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Bit Rate	BR	50	-	3000	Mbps	-
Center Wavelength	λ	1540	1550	1560	nm	-
Spectral Width (RMS)	$\Delta\lambda$	-	-	1	nm	-
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Average Optical Output Power	P _o	-3	-1	+2	dBm	-
Extinction Ratio	ER	5	-	-	dB	-
Power Supply Current	ICC	-	70	180	mA	-
Transmitter Enable Voltage	VEN	0	-	0.8	-	-
Transmitter disable Voltage	VD	2.0	-	VCC	V	-
Data Inputs Voltage	VPP	300	800	1600	mV	-
Optical Rise Time (20%~80%)	Tr	-	105	165	ps	SMPTE424M 2.97Gbps
		-	170	270	ps	SMPTE 292M 1.485Gbps
		-	300	800	ps	SMPTE 259M 270Mbps
Optical Fall Time (80%~20%)	Tf	-	120	180	Ps	SMPTE 424M 2.97Gbps
		-	170	270	Ps	SMPTE 292M 1.485Gbps
		-	300	800	ps	SMPTE 259M 270Mbps
Optical Signal Intrinsic Jitter	-	-	45	70	ps	SMPTE 424M 2.97Gbps
		-	60	100	ps	SMPTE 292M 1.485Gbps
		-	110	180	ps	SMPTE 259M 270Mbps

Recommended Circuit

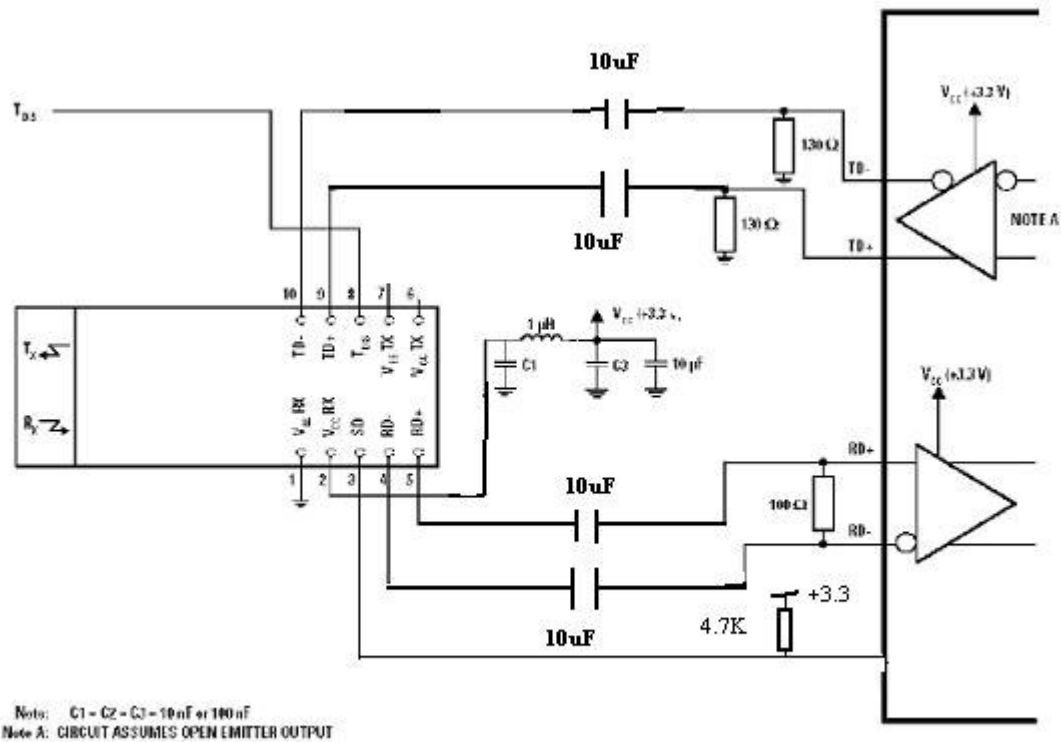
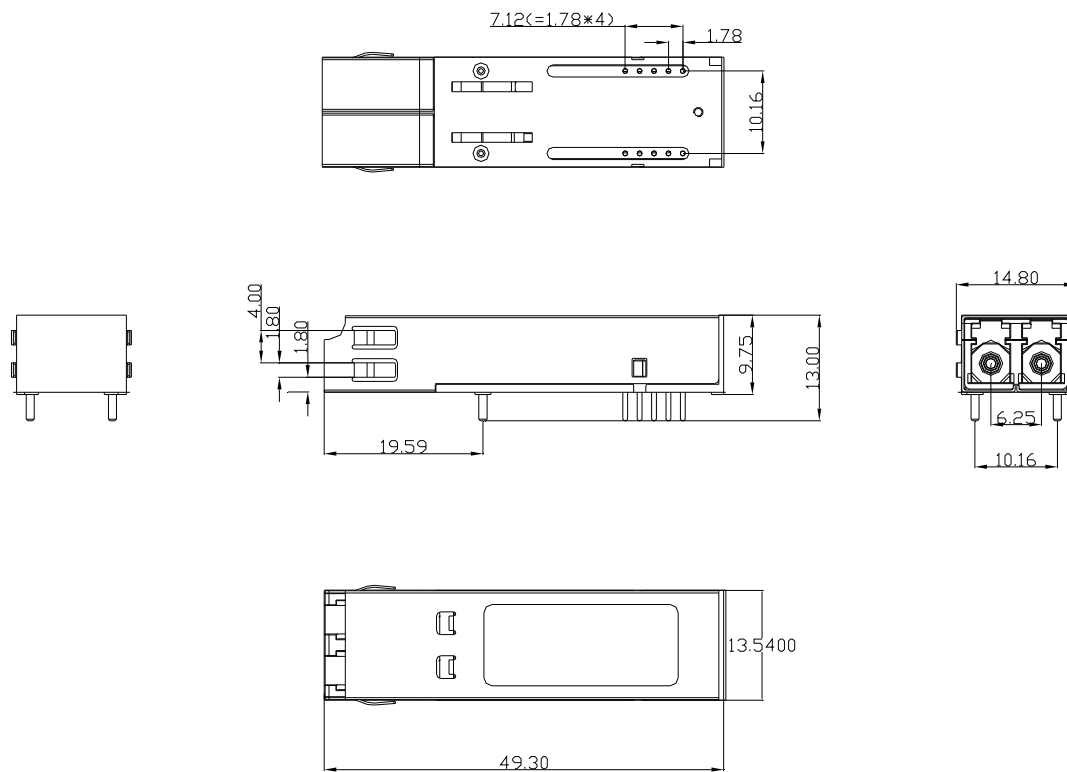


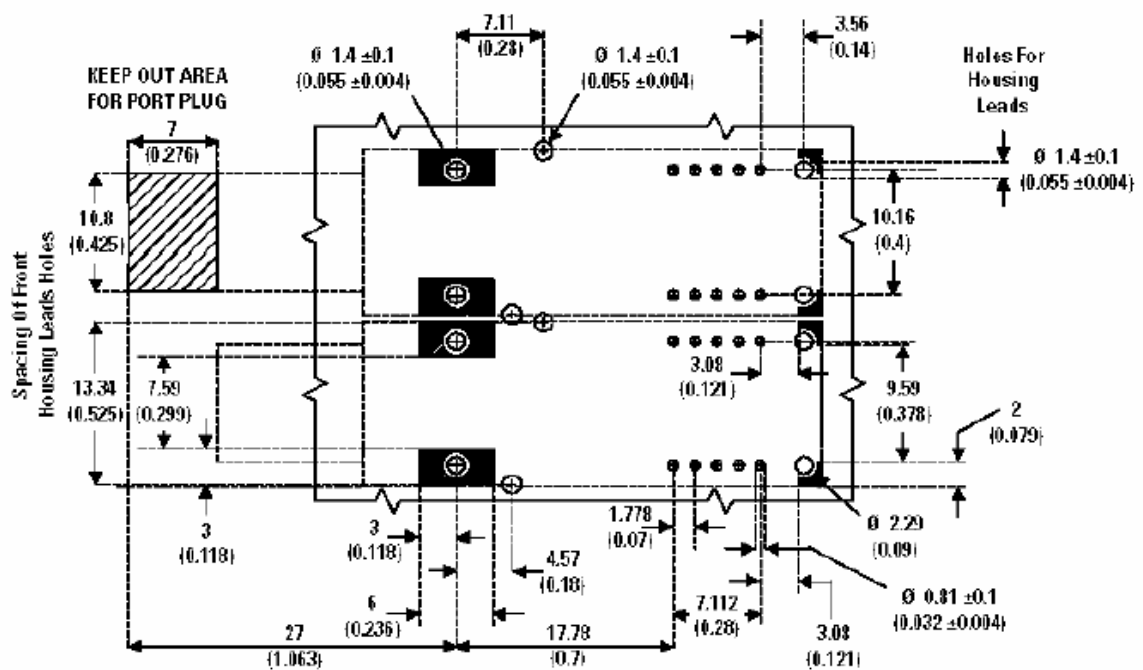
Figure 3: Recommended Circuit

Package information



Unit: mm

Recommended Board Layout Hole Pattern



For More Information

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