



**Customer Instructions for the SD034ASM Rev D Evaluation PCB
containing the
LMH0034 SMPTE 292M/259M Adaptive Cable Equalizer**

Overview

The SD034ASM evaluation PCB demonstrates a typical application for the LMH0034 SMPTE 292M/259M Adaptive Cable Equalizer.

Specifications

DC Input Power:

3.3V \pm 5% (3.6V maximum)

Serial Data Inputs (SDI, $\overline{\text{SDI}}$)

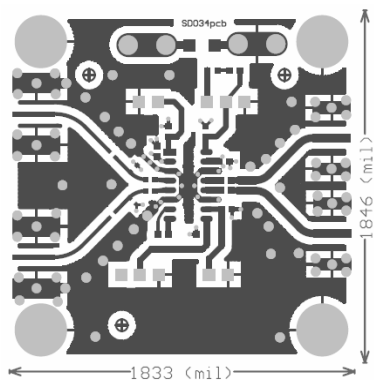
SMPTE 259M or 292M standard levels and impedances.

Serial Data Outputs (SDO, $\overline{\text{SDO}}$)

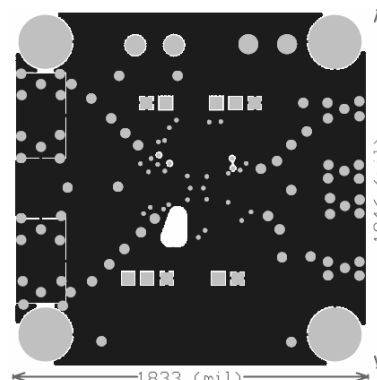
50 Ω , 375mV_{P-P} single-ended (750mV_{P-P} differential), positive-supply referenced signals.

Input Voltage (all inputs):

-0.3V to VCC +0.3V



Top Layer

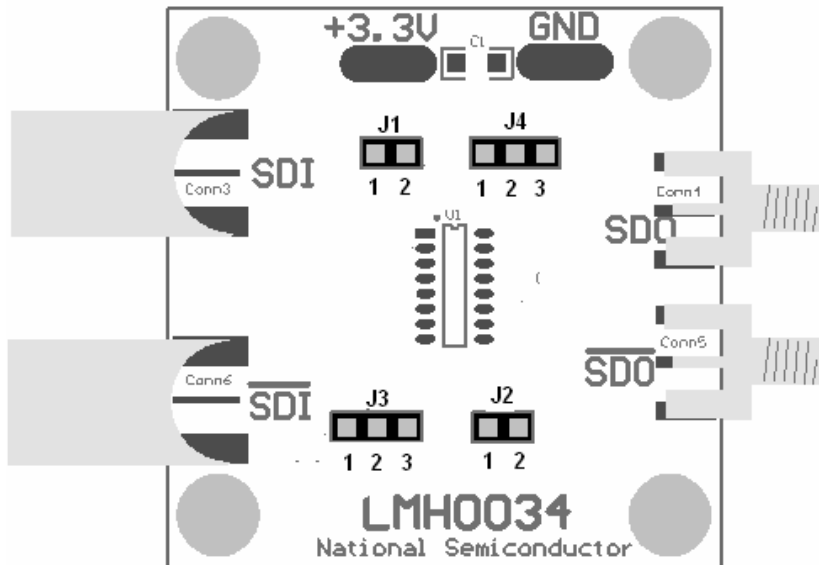


Bottom Layer (view from the top)

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Using Jumpers to configure and monitor the LMH0044



Jumper Configurations

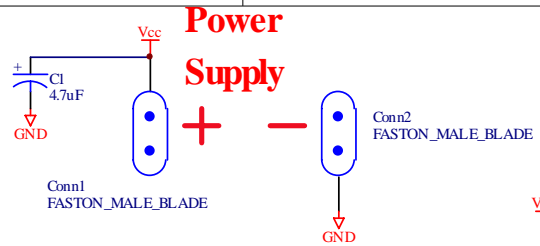
	J3	J4
Normal Operation	Connect pin 2 to pin 3	Monitor pin 2
Force Mute		Connect pin 2 to pin 3
Disable Mute		Connect pin 1 to pin 2
Enable Bypass	Connect pin 1 to pin 2	

Other Jumper Pin Functions

J1	Pin 2	CLI	This pin gives an indication of the cable length attached to the equalizer input.
	Pin 1	Ground	A handy ground reference when connecting the CLI output to a DMM
J2	Pin 1	MuteRef	Force a voltage on this pin to adjust the internal reference that the Mute circuit uses to detect the presence of a signal. Float this pin to maximize the cable length that can be equalized.
	Pin 2	Ground	A handy ground reference when forcing a voltage onto the MuteRef pin.

LMH0034 Adaptive Cable Equalizer for SMPTE 292M and 259M

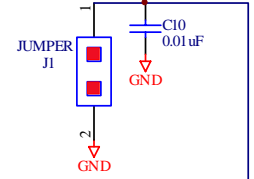
Power Supply



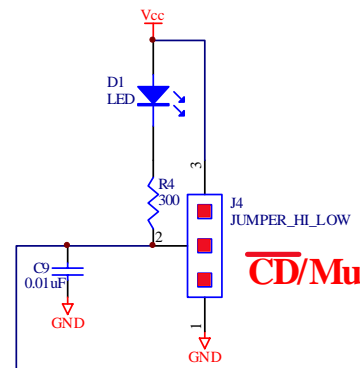
Layout Considerations

- Use dual via pairs
- 6 mil dielectric between power and ground plane
- Open the planes under the AEC pins and capacitor

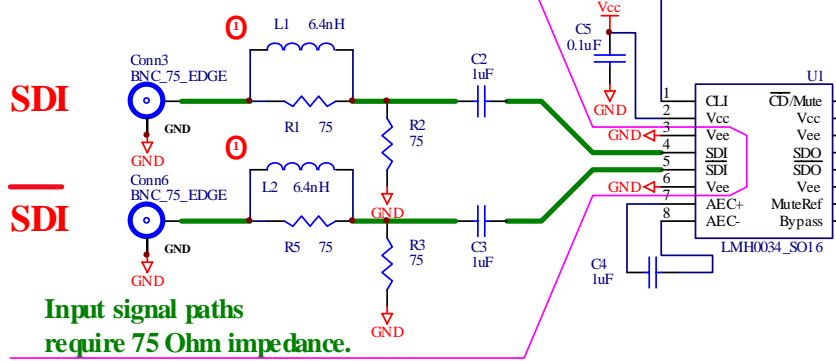
CLI



CD/Mute



Isolate this area with a grounded guard ring



SDI

SDO

Input signal paths require 75 Ohm impedance.

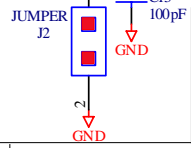
Output signal paths require 50 ohm impedance

Notes
 ① Inductor placed atop resistor

Bypass



MUTEref



Title		
LMH0034 Apps Eval PCB		
Size	Number	Revision
A	SD034ASM	D
Date:	28-Jun-2006	Sheet of
File:	H:\LabData_CTD\LMH0034\LMH0034 Apps Eval PCB\LMH0034 Apps Rev 2.ddb	

Bill of Materials for National Semiconductor SD034ASM Rev D PCB assembly

Designator	Qty	Manufacturer	Manufacturer Part Number	Description
C9 C10	2	Kemet	C0603C103K5RACTU	Capacitor, 0.01uF, 0603
C5 C6	2	Kemet	C0603C104J3RACTU	Capacitor, 0.1uF, 0603
C12 C13	2	Kemet	C0603C101J5GACTU	Capacitor, 100pF, 0603
C2 C3	2	Panasonic - ECG	ECJ-0EB0J105M	Capacitor, 1uF, 0402
C4	1	Panasonic - ECG	ECJ-1VB1C105K	Capacitor, 1uF, 0603
R4	1	Panasonic - ECG	ERJ-3GEYJ301V	Resistor, 300 Ohm, 0603
C7 C8	2	Panasonic - ECG	ECJ-1VB0J475M	Capacitor, 4.7uF, 0603
C1	1	TDK	C3216X7R1C475K	Capacitor, 4.7uF, 1206
R1 R2 R3 R5	4	Yageo America	RC0402FR-0775RL	Resistor, 75 Ohm, 0402
Conn3 Conn6	2	Trompeter	UCBJE20-2	Connector, Edge, BNC, Female, 75 Ohm, 0.032"
Conn1 Conn2	2	Keystone	1287-ST	Connector, Faston, Blade, Male
J1 J2	2	3M/ESD	929834-02-36	Pin Jumper, 1x2
J3 J4	2	3M/ESD	929834-02-36	Pin Jumper, 1x3
D1	1	LITE-ON INC	LTST-C190GKT	LED, Green, 0603
U1	1	National Semiconductor	LMH0034	IC, LMH0034 Equalizer, SOIC16
Conn4 Conn5	2	Johnson Components	142-0701-881	Connector, Edge, SMA, 50 Ohm, Female, 0.032"
L1, L2	2	VISHAY DALE	ILC-0402 6.8NH 5%	Inductor, 6.8nH, 0402

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