THC63LVDM83D / THC63LVDF(R)84C Evaluation Kit

LVDS Single Link Evaluation Board

Parts Number: THEVAM83D, THEVAF(R)84C

1.General Description

THEVAM83D and, THEVAF(R)84C boards are designed to support video data transmission between the host and display. One high-speed lane can carry up to 24bits data and 3bits of synchronizing signals at a pixel clock frequency from 8MHz to 160MHz.

Table 1 Clock Frequency

Type	Parts Number	TTL Clock Freq.
Tx	THEVAM83D	8MHz to 160MHz
Rx	THEVAF(R)84C	8MHz to 112MHz

2. Features

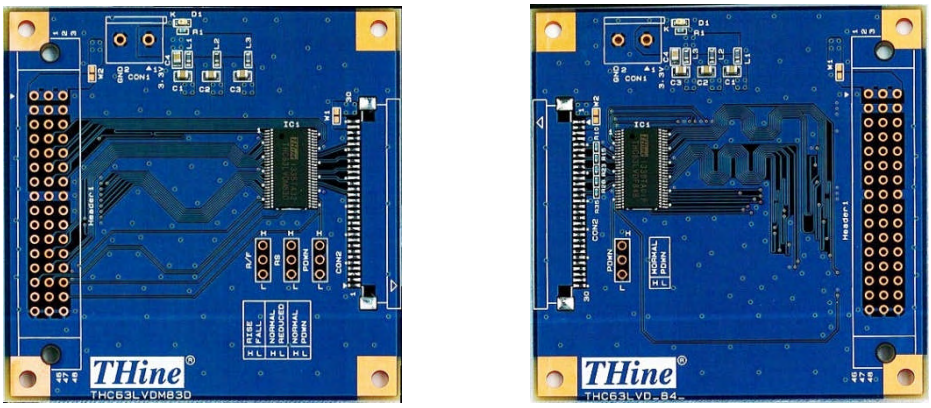
・Compatible with TIA/EIA-644 LVDS Standard
・7:1 LVDS Transmitter and Receiver
・Single power supply
・Power Down Mode

< THEVAM83D>

・LVDS swing is reducible as 200mV by RS-pin to reduce EMI and power consumption.
・Input clock triggering edge is selectable by R/F-pin

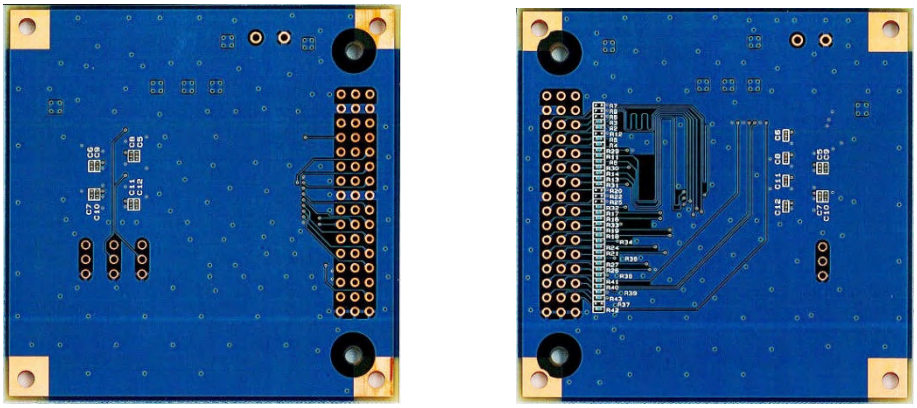
< THEVAF84C>・Falling Edge Clock
< THEVAR84C>・Rising Edge Clock

3. Overview



(a) THEVAM83D (Top Side) (b) THEVAF(R)84C (Top Side)

Figure 1 THEVAM83D and THEVAF(R)84C Top Side View



(a) THEVAM83D (Bottom Side) (b)THEVAF(R)84C (Bottom Side)

Figure 2 THEVAM83D and THEVAF(R)84C Bottom Side View

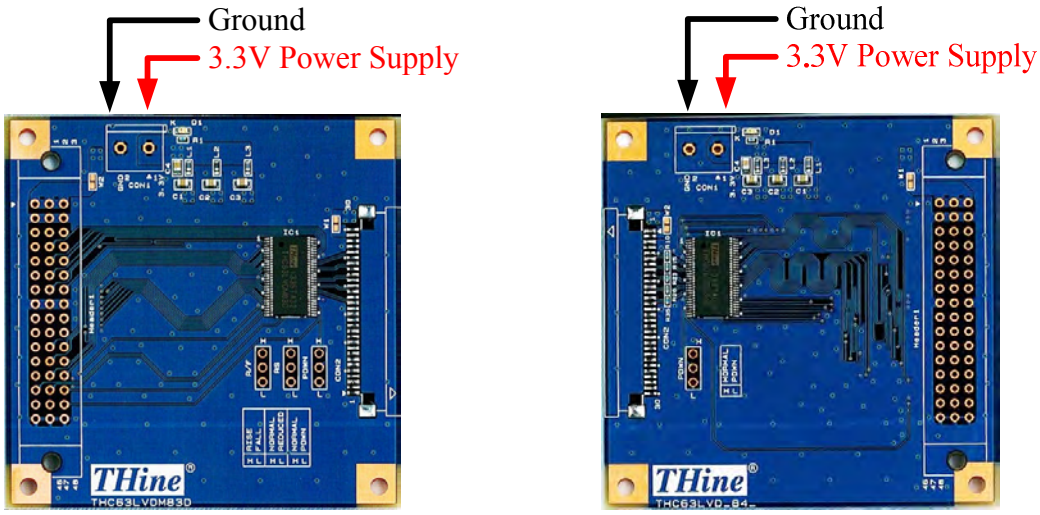
4. Power Supply Set Up

This chapter shows power supply condition.

Caution: Please check if there is no power-GND short on below red trace before supplying any power.

3.3V Power Supply to Each Board

Each evaluation board require 3.3V power supply. Please use "CON1" connector typically.



(a)THEVAM83D (b) THEVAF(R)84C

Figure 3 Power Supply for Evaluation Board

Power Supply from / to Connector

3.3V power supply can be connected to Header1 and CON2 by using W1 and W2solder jumper.

THEVAM83D

W1: Connect the 3.3V power supply with pin#29 and 30 of CON2.
W2: Connect the 3.3V power supply with pin#1, 2 and 3 of Header1.

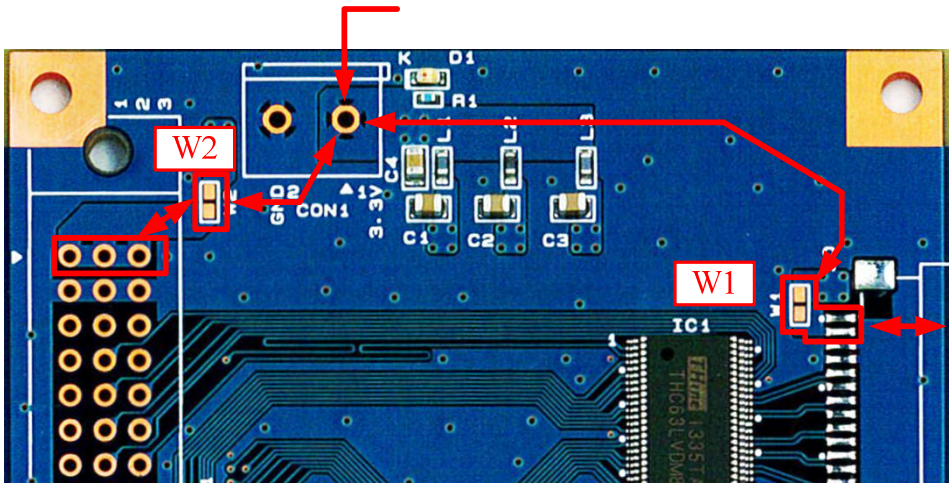


Figure 4 THEVAM83D Power Supply from / to Each Connector

THEVAF(R)84C

W1: Connect the 3.3V power supply with pin#1, 2 and 3 of Header1.
W2: Connect the 3.3V power supply with pin#1 and 2 of CON2.

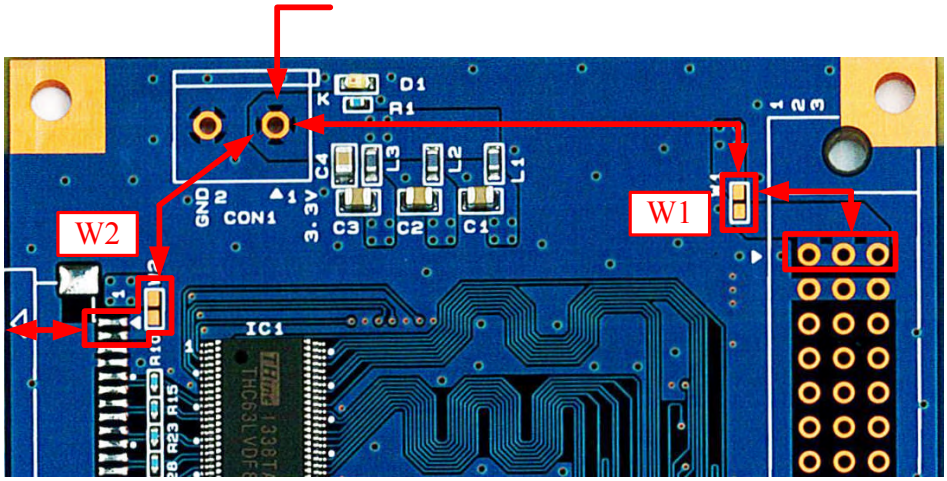
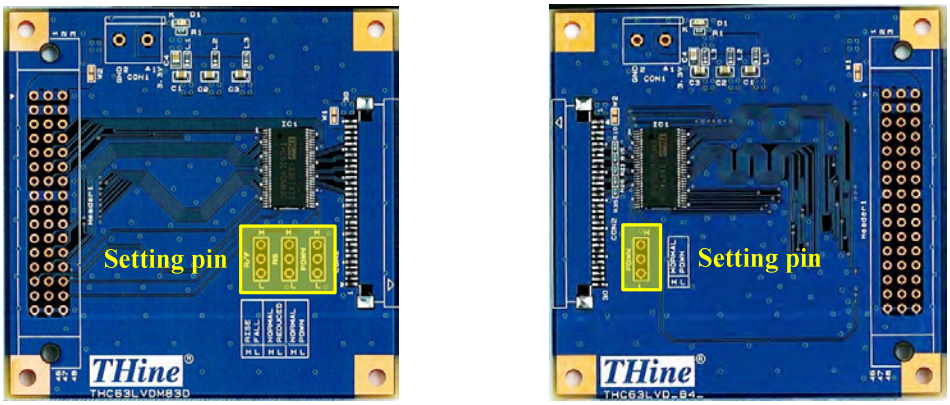


Figure 5 THEVAF(R)84C Power Supply from / to Each Connect

5. Function Setting

Setting pin of each boards are shown in yellow area of figure 6. HEADER is connected to IC's setting pin. Each setting pin's high or low setting can set by connecting HEADER and high level or low level.



(a)THEVAM83D (b) THEVAF(R)84C

Figure 6 Position of Function Setting Pin

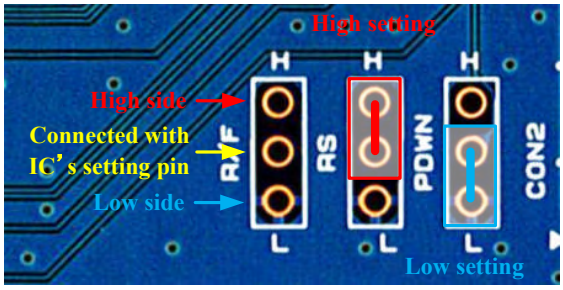


Figure 7 High / Low Setting Description

5. Function

This chapter shows function setting of THEVAM83D and THEVAF(R)84C.

Table 2 THEVAM83D Function Setting Description

<table>
<tr><th>Silk</th><th>Symbol</th><th>Function</th></tr>
<tr><td>RF</td><td>RF</td><td>Input clock triggering edge select input for latching input data
H: Rising edge L: Falling edge</td></tr>
<tr><td>RS</td><td>RS</td><td>LVDS Swing Mode.
<table>
<tr><th>RS</th><th>LVDS Swing</th><th>Small Swing Input Support</th></tr>
<tr><td>VCC</td><td>350mV</td><td>N/A</td></tr>
<tr><td>0.6 to 1.4V</td><td>350mV</td><td>RS=V_{REF}</td></tr>
<tr><td>GND</td><td>200mV</td><td>N/A</td></tr>
</table>
V_{REF} : is Input Reference Voltage</td></tr>
<tr><td>PWDN</td><td>PWDN</td><td>Power down input.
H: Normal operation L: Power down</td></tr>
</table>

Table 3 THEVAF(R)84C Function Setting Description

Silk	Symbol	Function
PWDN	PWDN	Power down input. H: Normal Operation L: Power Down

6. Schematic

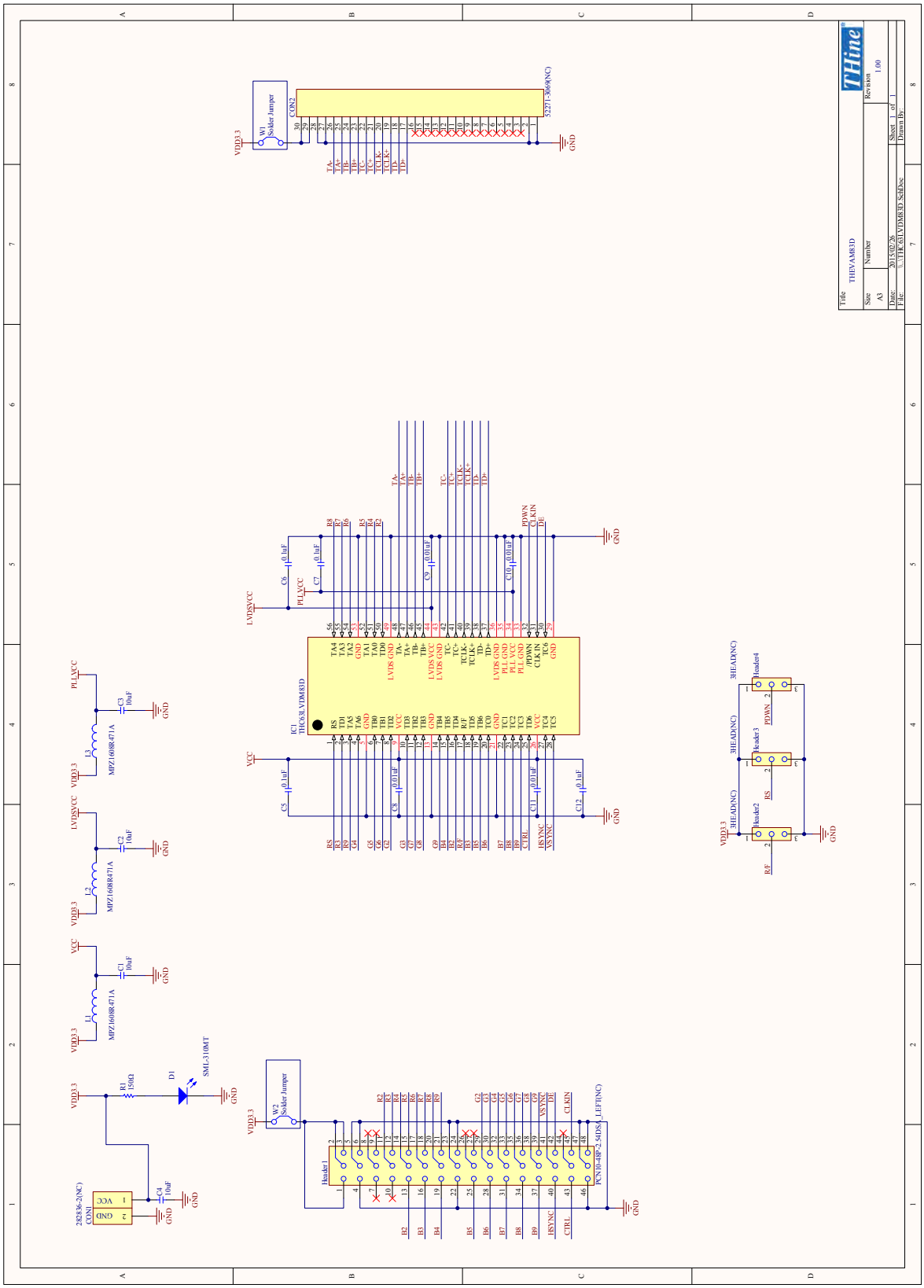


Figure 8 THEVAM83D Schematic

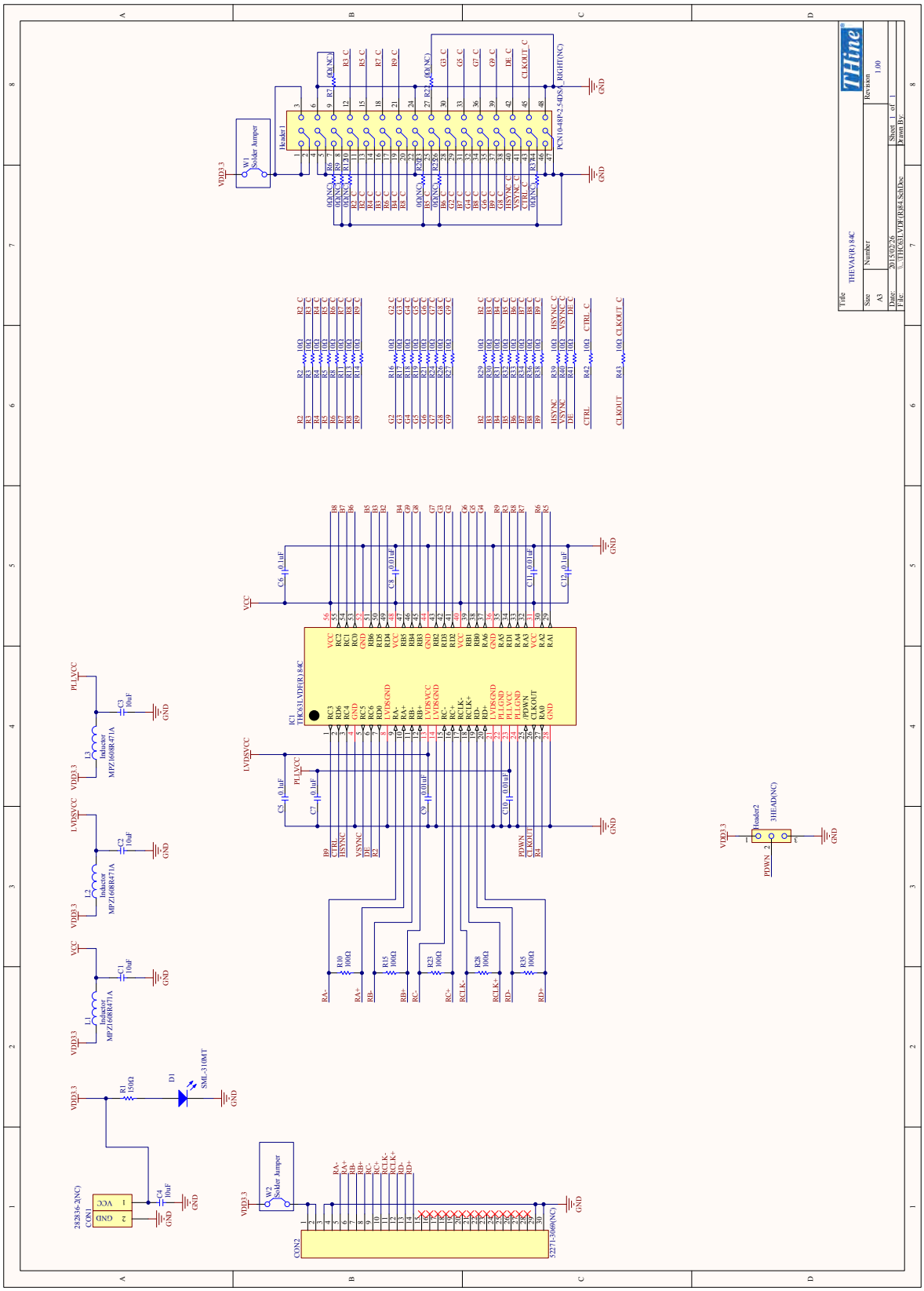


Figure 9 THEVAF(R)84C Schematic

7. Bills of Materials

Table 4 THEVAM83D BOM

TYPE	Value / Part No.	Package	SPEC	Reference No.	Qty.
Capacitor	10uF	2012	16V	C1, C2, C3, C4	4
Capacitor	0.1uF	1005	16V	C5, C6, C7, C12	4
Capacitor	0.01uF	1005	16V	C8, C9, C10, C11	4
Connector	282836-2(NC)	5mm_pitch	2pin	CON1	1
Connector	52271-3069(NC)	1mm_pitch	30pin	CON2	1
Connector	PCN10-48P-2.54DSA_LEFT(NC)	2.54mm_pitch	48pin	Header1	1
Header	3HEAD(NC)	2.54mm_pitch	---	Header2, Header3, Header4	3
IC	THC63LVDM83D	TSSOP56	---	IC1	1
Inductor	MPZ1608R471A	1608	1.2A	L1, L2, L3	3
LED0	SML-310MT	1608	GREEN	D1	1
Resistor	150Ω	1005	0.1W	R1	1

Table 5 THEVAF(R)84C BOM

TYPE	Value / Part No.	Package	SPEC	Reference No.	Qty.
Capacitor	10uF	2012	16V	C1, C2, C3, C4	4
Capacitor	0.1uF	1005	16V	C5, C6, C7, C12	4
Capacitor	0.01uF	1005	16V	C8, C9, C10, C11	4
Connector	PCN10-48P-2.54DSA_RIGHT(NC)	2.54mm_pitch	48pin	Header1	1
Connector	52271-3069(NC)	1mm_pitch	30pin	CON2	1
Connector	282836-2(NC)	5mm_pitch	2pin	CON1	1
Header	3HEAD(NC)	2.54mm_pitch	---	Header2	1
IC	THC63LVDF(R)84C	TSSOP56	---	IC1	1
Inductor	MPZ1608R471A	1608	1.2A	L1, L2, L3	3
LED0	SML-310MT	1608	GREEN	D1	1
Resistor	150Ω	1005	0.1W	R1	1
Resistor	100Ω	1005	0.1W	R10, R15, R23, R28, R35	5
Resistor	10Ω	1005	0.1W	R2, R3, R4, R5, R8, R11, R13, R14, R16, R17, R18, R19, R21, R24, R26, R27, R29, R30, R31, R32, R33, R34, R36, R38, R39, R40, R41, R42, R43	29
Resistor	0Ω(NC)	1005	1A	R6, R7, R9, R12, R20, R22, R25, R37	8

8. Set items

Table 6 Set Items

TYPE	Part No.
DC Connector	282836-2
FFC Connector for LVDS Link	52271-3069
FFC 30pin 1mm pitch for LVDS Link	98267-0475
Pin Header	---

It's possible to mount these parts on this board and use.

9. Notices and Requests

Please kindly read, understand and accept this "Notes and Requests" before using this product.

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THine Electronics, Inc.
sales@thine.co.jp