Middle Power Class-D Speaker Amplifier Series

BD28623MUV Evaluation Board Information

BD28623MUV-EVK-001

●General

BD28623MUV is a Class D Speaker Amplifier designed for Flat-panel TVs in particular for space-saving and low-power consumption. This IC delivers an output power of 20W+20W. This IC employs state-of-the-art Bipolar, CMOS, and DMOS (BCD) process technology. With this technology, the IC can achieve high efficiency. In addition, the IC is packaged in a compact back-surface heat-sink type power package to achieve low power consumption and low heat generation and to eliminate need for external heat-sink. With this package, total output power is only 34W as compared to 40W total output power of package with external heat-sink This product satisfies all needs for drastic downsizing, low-profile structures and powerful high quality playback of sound systems.

●Index

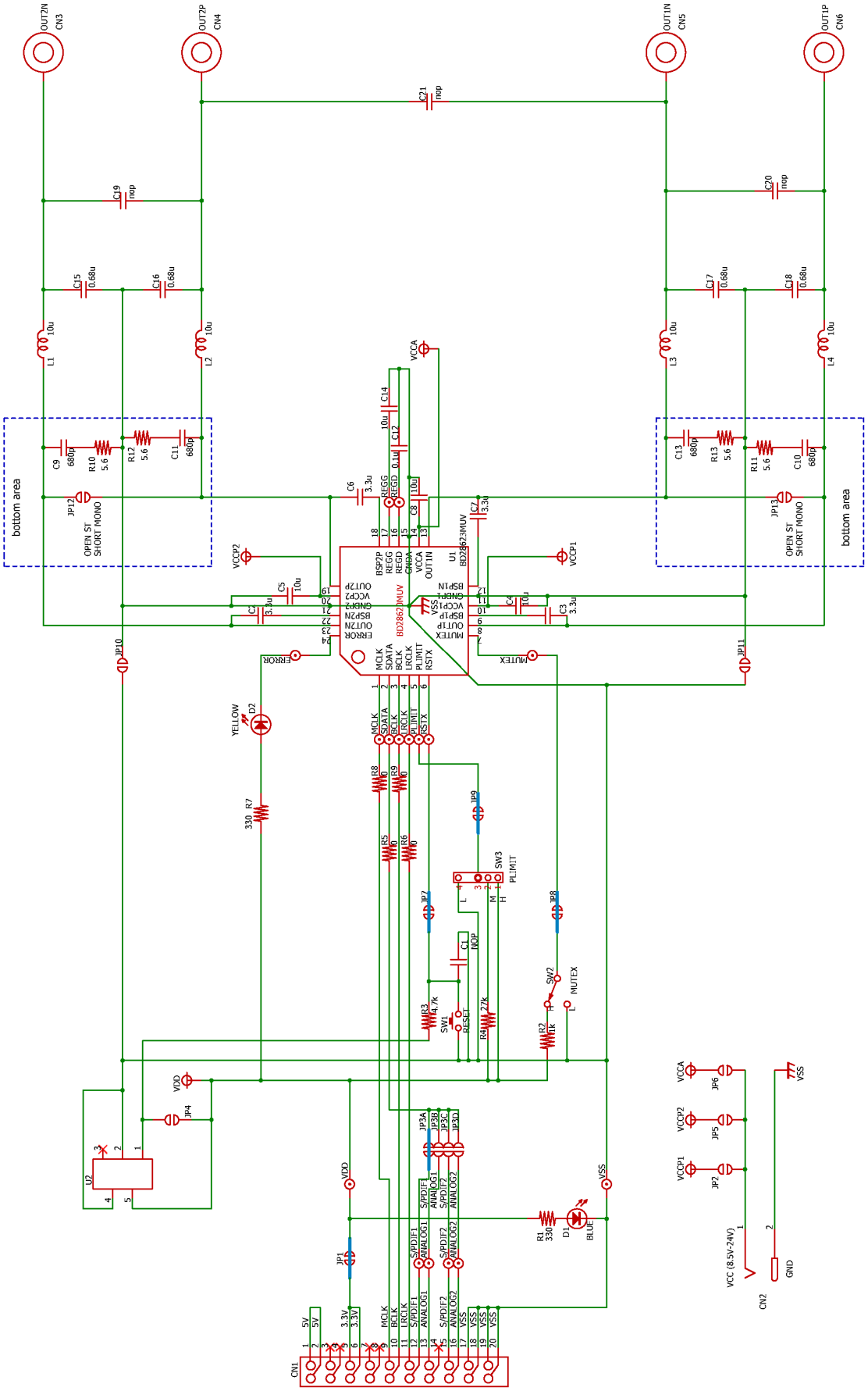
●General 1
●Index 1
●Conditions 1
●Circuit Diagram.....2
●PCB layout(4-layer) 3
●Usage.....6
●BOM List 7
●Appendix 8

●Conditions

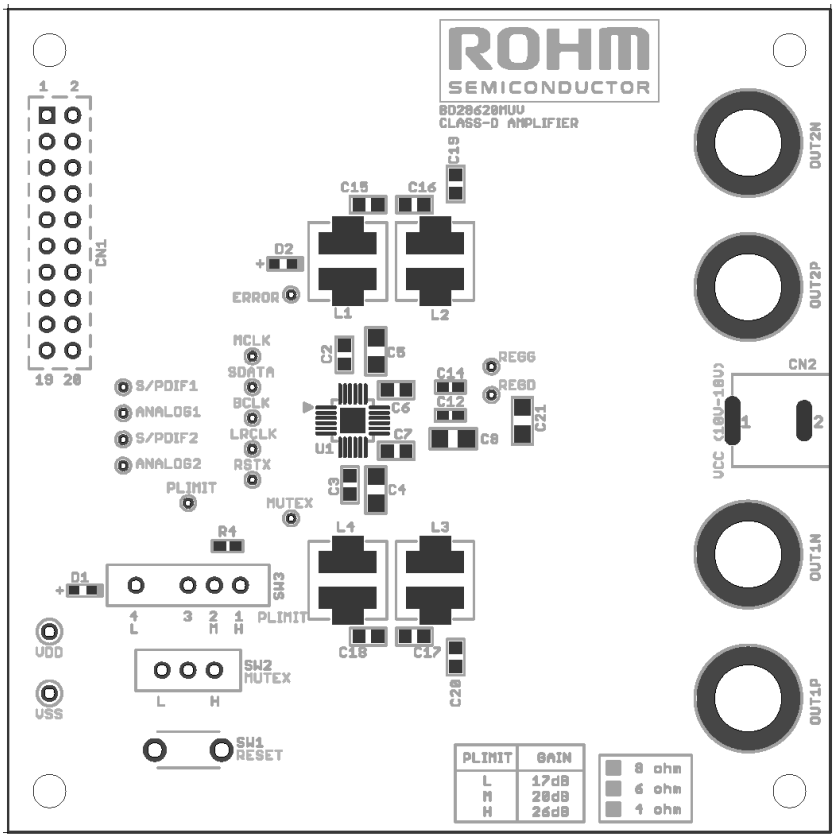
Item	Symbol	Range	Condition	Unit
Power Supply Voltage	V_{CC}	+8.5 ～ +24	–	V
Minimum Load Impedance(*)	R_L	6.4	21V＜Vcc≦24V	Ω
		4.8	14V＜Vcc≦21V	
		3.6	Vcc≦14V	

This document is information of the evaluation board when we evaluated the device.
This information will help you when designing your evaluation board.
Notice, the evaluation board is not available for sale.

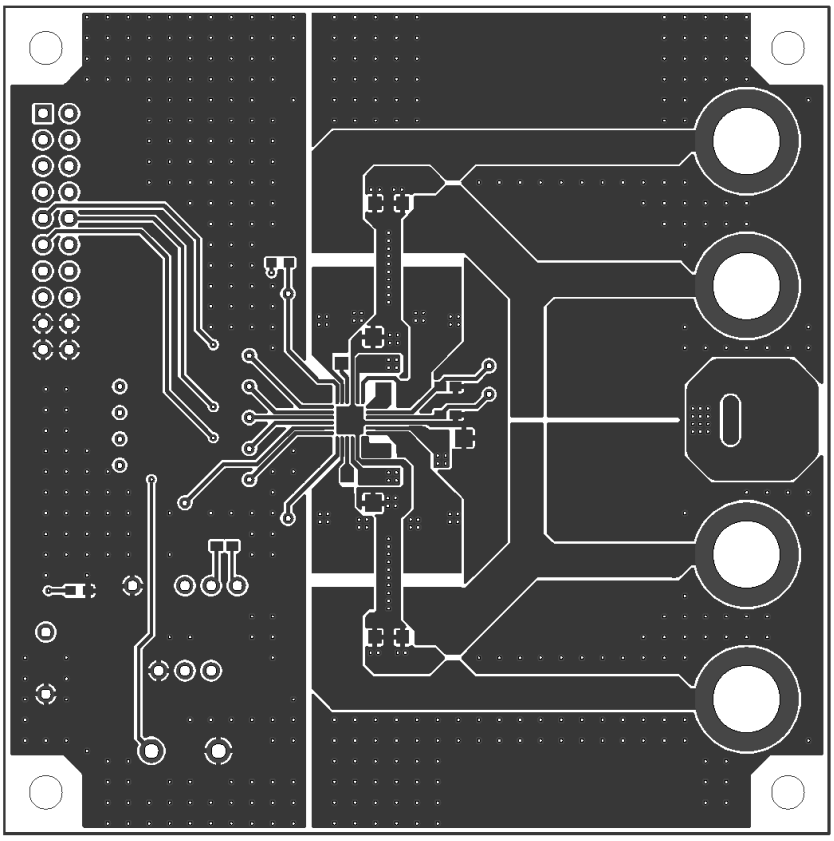
●Circuit Diagram



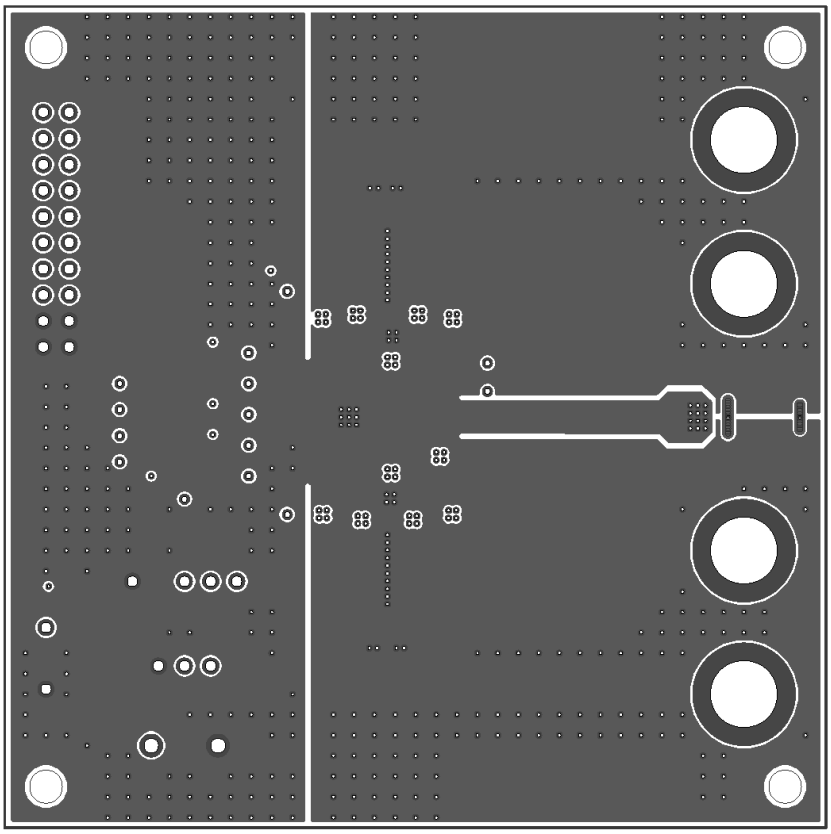
●PCB layout(4-layer)



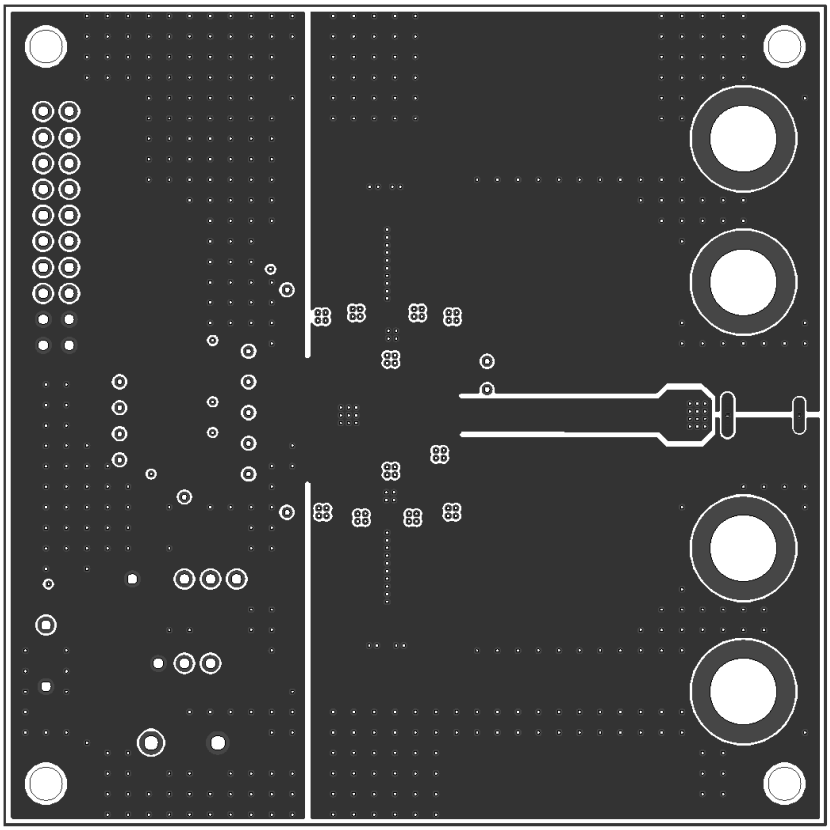
TOP SILKSCREEN – TOP VIEW



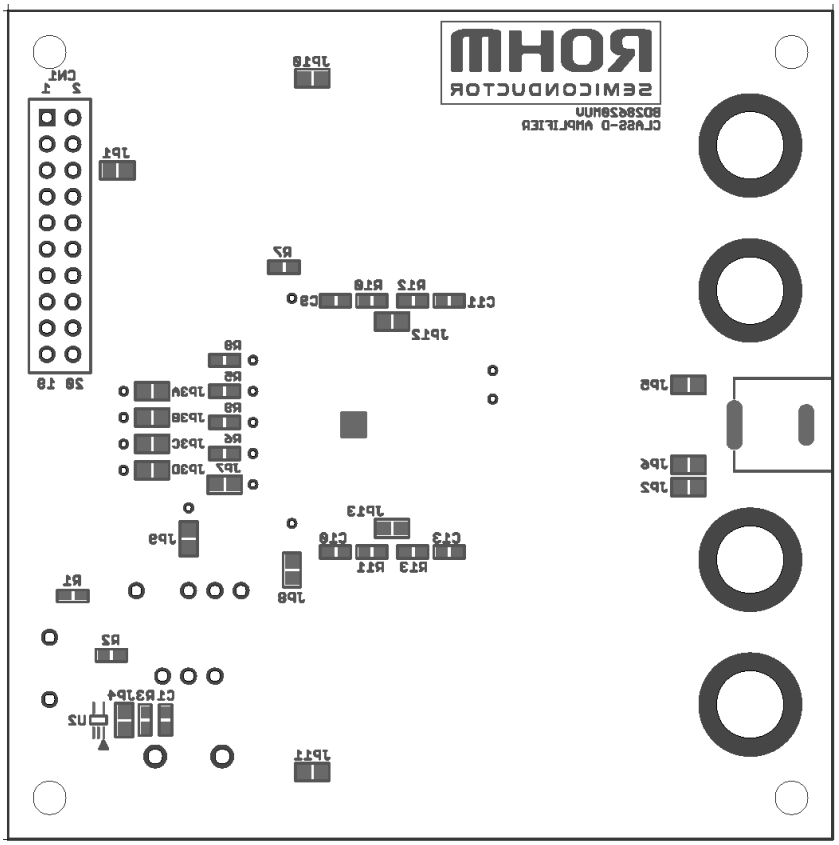
TOP LAYER – TOP VIEW



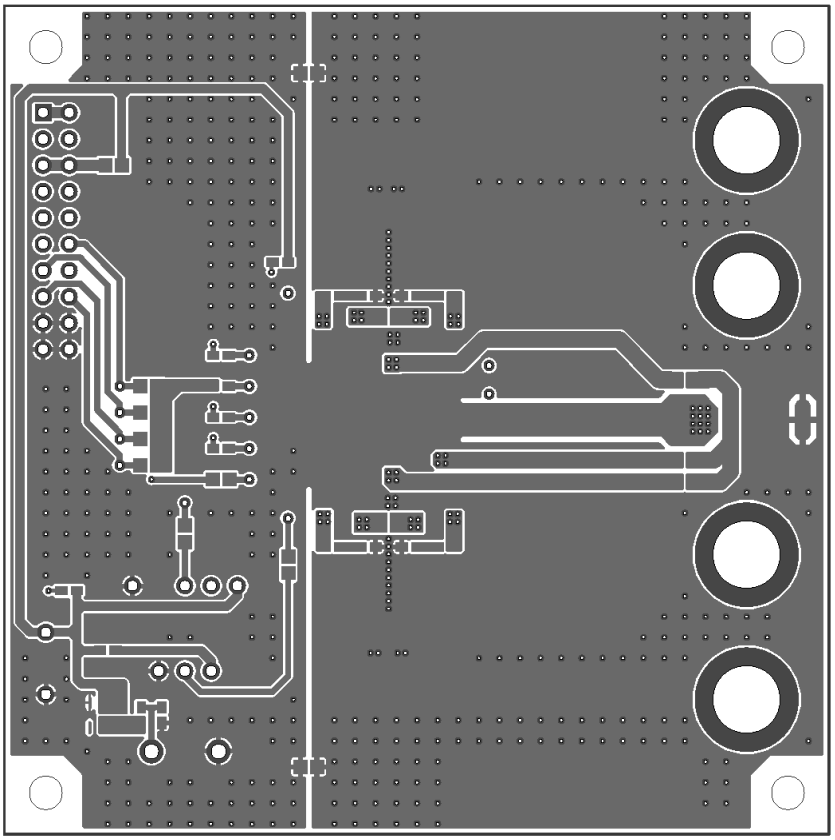
MID1 LAYER – TOP VIEW



MID2 LAYER – TOP VIEW



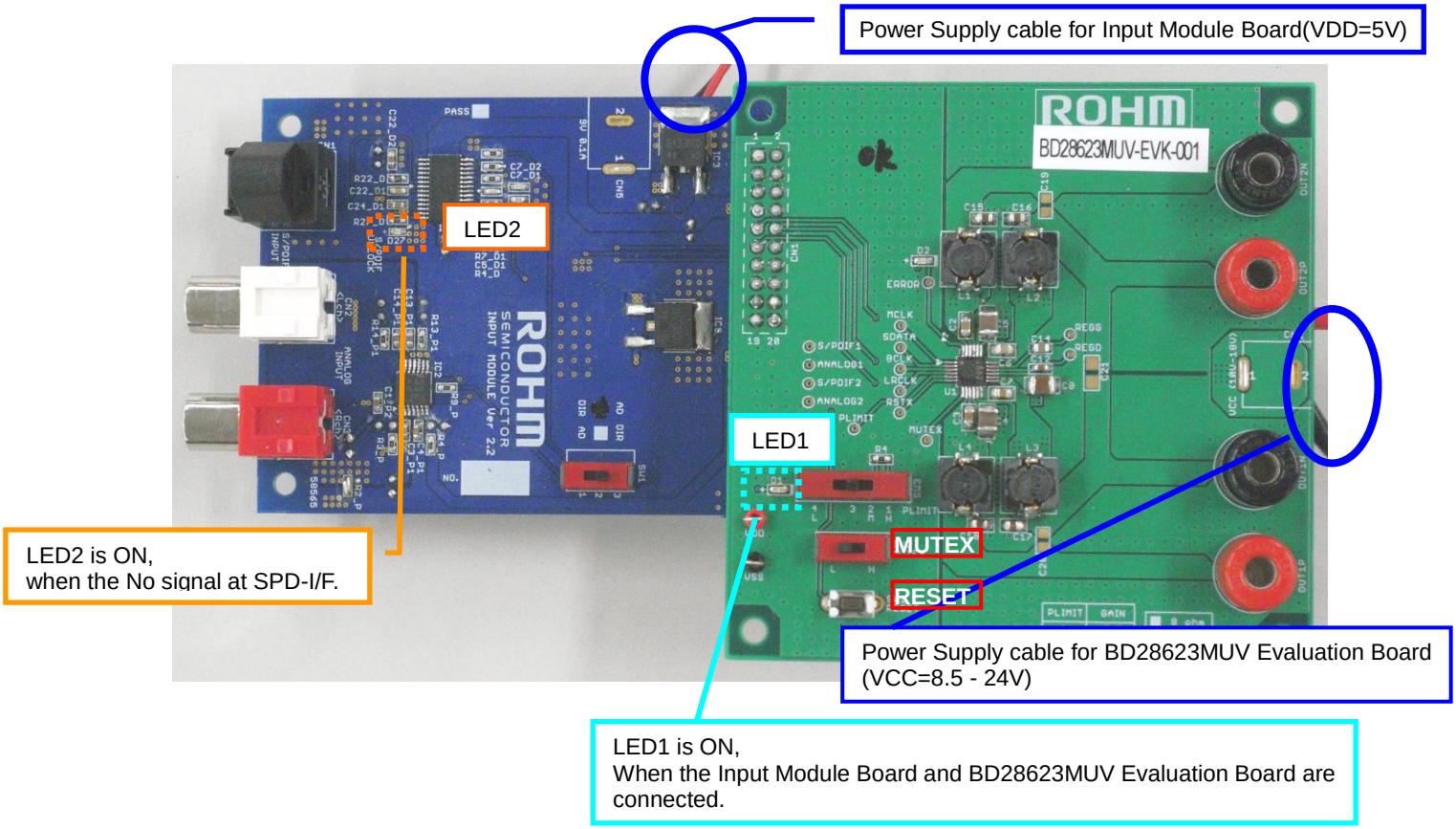
BOTTOM SILKSCREEN – TOP VIEW



BOTTOM LAYER – TOP VIEW

●Usage

When using the eva-board, it must be executed the following procedure due to avoid the break of the eva-board and speaker.



Operation procedure of startup

① Set to MUTE(MUTEX=”L”) on the BD28623MUV Evaluation Board.
② Connect the BD28623MUV Evaluation Board and the Input Module Board.
③ Input the source signal.
③ Turn ON Power Supply the BD28623MUV Evaluation Board(8.5～24V) and next turn ON Power supply the Input Module(5V)
③ Check lighting the LED1 and LED2.
※ LED1(Blue) :3.3V is supplied to the BD28623MUV evaluation board thru the Input Module
※ LED2(Yellow) : SPD-I/F Data (I2S data) is not detected at the Input Module Board.
④ Push the switch of RSTX
⑤ When the MUTEX switch is changed to “H”, the output signal of speaker is appeared.

Operation procedure of termination

① Stop the output signal by the MUTEX switch is changed to “L”.
② Set the RSTX switch to “L”.
③ Turn off Power Supply the input Module Board and next turn off Power Supply the BD28623MUV Evaluation Board.

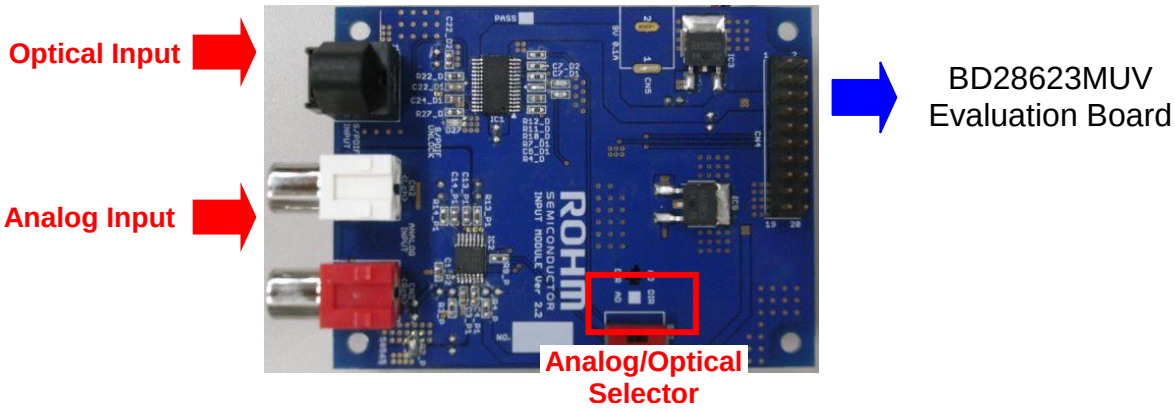
Note：Refer to Appendix about Input Module.

●BOM List

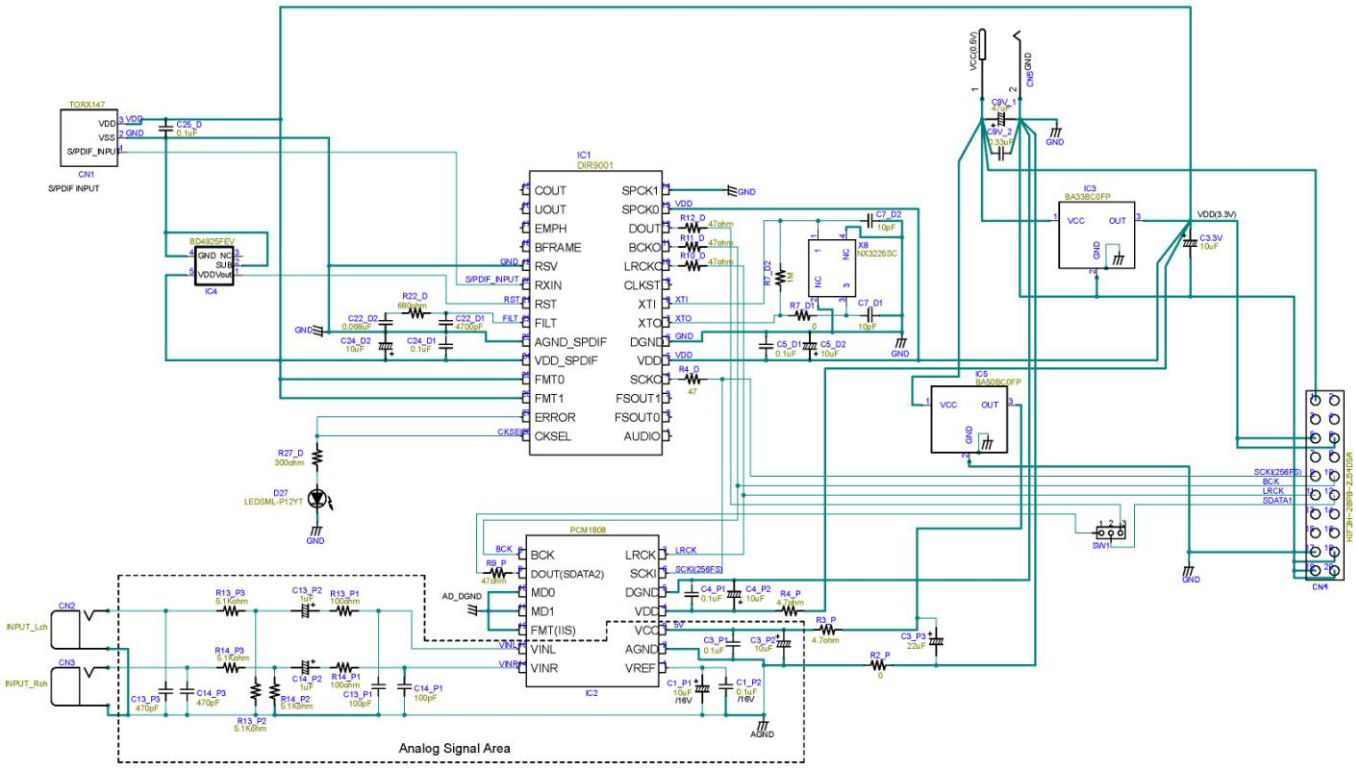
BD28623MUV PartsList

Parts	Parts No.	Product No.	Part Value	Rated Voltage, Power, Current	Tolerance	Size	Manufacture
Capacitor	C9, C10, C11, C13	—	NOP	50V	CH(±5%)	1005	
	C4, C5, C8	—	10uF	35V	B(±10%)	3225	
	C15, C16, C17, C18	—	0.68uF	50V	B(±10%)	2012	
	C19, C20	—	–	–	–	2012	
	C1	—	–	–	–	1608	
	C2, C3, C6, C7	—	3.3uF	25V	B(±10%)	2012	
	C14	—	10uF	16V	B(±10%)	2012	
	C12	—	0.1uF	10V	B(±10%)	1608	
LED	D1	—	BLUE	–		1608	
	D2	—	YELLOW	–		1608	
Coil	L1, L2, L3, L4	DS75LC B1047DS-100M	10uH	3.8A (20℃)		7.6 x 7.6	TOKO
Resister	R10, R11, R12, R13	—	NOP	1/4W	J(±5%)	2012	
	R5, R6, R8, R9	—	0	1/10W		1608	
	R1, R7	—	330	1/10W	J(±5%)	1608	
	R3	—	4.7k	1/10W	J(±5%)	1608	
	R4	—	47k	1/16W	J(±5%)	1608	
	R2	—	1k	1/10W	J(±5%)	1608	
IC	U2	BD28623MUV	–	–			
	U1	BD4925FVE	–	–			

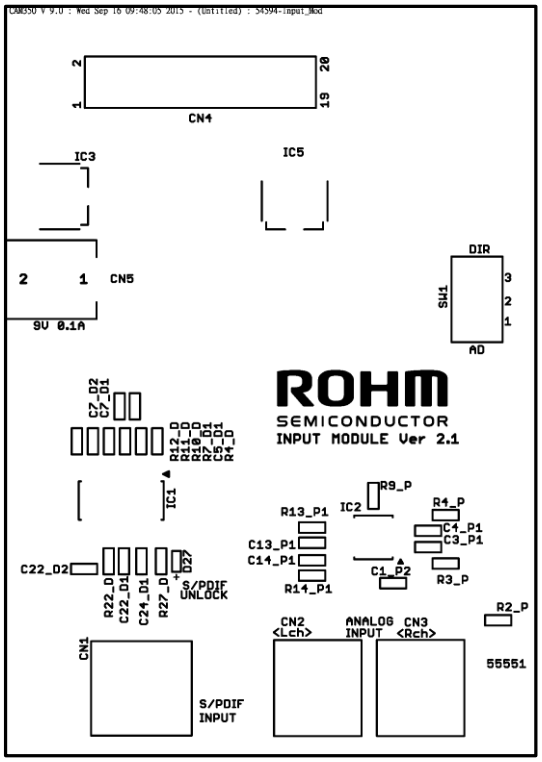
●Appendix



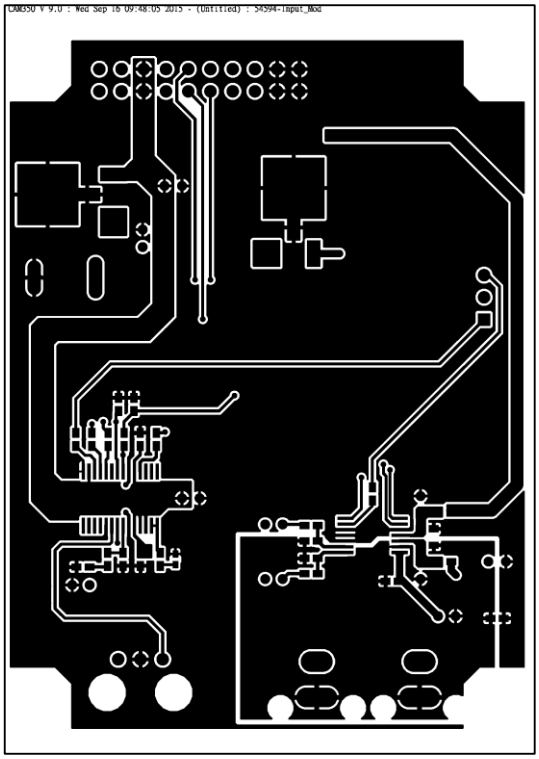
Input Module Ver.2.1　Overview



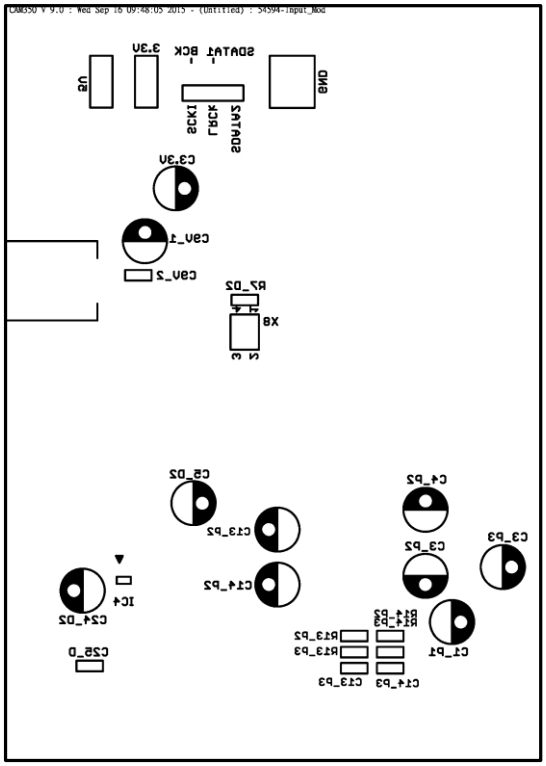
Input Module Ver.2.1　Circuit Diagram



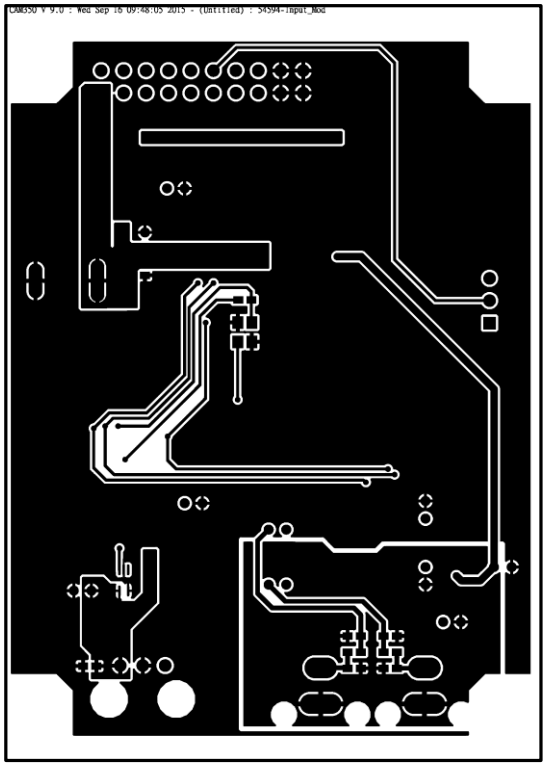
Top Overray (Silk Screen)



Top layer



Bottom Overray (Silk Screen)



Bottom layer

Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM.

4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.

6) The Products specified in this document are not designed to be radiation tolerant.

7) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

8) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

9) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.

10) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.

11) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.

12) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.

13) This document, in part or in whole, may not be reprinted or reproduced without prior consent of ROHM.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/