

IS31AP4066D CLASS-AB AUDIO AMPLIFIER

DESCRIPTION

The IS31AP4066D demo board is a fully assembled and tested PCB that uses the IS31AP4066D Class-AB dual bridge-connected audio power amplifier. Designed to drive speaker impedance of 8Ω or larger. The demo board provides dual BTL output, capable of delivering 1.6W into an 8Ω speaker at 5V.

FEATURES

- Supply voltage range from 2.7V to 5.5V
- Delivers 1.6W into an 8Ω speaker at 5V supply (THD+N=10%)
- Delivers 1.3W into an 8Ω speaker at 5V supply (THD+N=1%)
- Available in QFN-16 (3mm × 3mm) package

QUICK START



Figure 1: Photo of IS31AP4066D Evaluation Board

RECOMMENDED EQUIPMENT

- 5.0V, 2A power supply
- Audio source (i.e. MP3 player, Notebook PC, etc.)
- 8Ω or larger speaker

ABSOLUTE MAXIMUM RATINGS

- ≤ 5.5V power supply
- ≥ 8Ω speaker

Caution: Do not exceed the conditions listed above; otherwise the board will be damaged.

PROCEDURE

The IS31AP4066D demo board is fully assembled and tested. Follow the steps listed below to verify board operation.

Caution: Do not turn on the power supply until all connections are completed.

- 1) Connect 8Ω (or larger) speakers across the (OUTA+, OUTA-) terminal and (OUTB+, OUTB-) terminal. Or connect speakers to the connector (OUTA, OUTB).
- 2) Connect the ground terminal of the power supply to the GND and the positive terminal to the VCC. Or connect DC power to connector (DC CON).
- 3) Connect the audio sources to the INA terminal (left channel) and INB terminal (right channel); or connect audio sources to the connector (AUDIO IN).
- 4) Turn on the power supply.
- 5) Turn on the audio sources.

ORDERING INFORMATION

Part No.	Temperature Range	Package
IS31AP4066D-QFLS2-EB	-40°C to +85°C (Industrial)	QFN-16, Lead-free

Table 1: Ordering Information

For pricing, delivery, and ordering information, please contacts ISSI's analog marketing team at analog@issi.com or (408) 969-6600.

IS31AP4066D CLASS-AB AUDIO AMPLIFIER

DETAILED DESCRIPTION

The IS31AP4066D demo board features the IS31AP4066D Class-AB power amplifier IC, designed to drive speaker impedance of 8Ω or larger.

CUSTOMIZING THE GAIN

The IS31AP4066D demo board is shipped with a gain of 18.3dB and is set by resistors R_I (R_1 , R_2) and R_F (R_3 , R_4). Change resistors R_I and R_F to reconfigure the gain of the board. Gain determined in Equation (1) and refer to IS31AP4066D data sheet for more detail.

$$Gain = \frac{2 \times R_F}{R_I} \left(\frac{V}{V} \right) \quad (1)$$

HIGH-PASS FILTER

The input capacitors C_1 (C_5 , C_6) and input resistors R_I (R_1 , R_2) form a high-pass filter with the corner frequency, f_c determined in Equation (2).

$$f_c = \frac{1}{(2\pi R_I C_I)} \quad (2)$$

SHUTDOWN MODE

Jumper (J1) controls the shutdown pin of the IS31AP4066D IC. Connect the shunt across pin 1 and 2 of the jumper (J1) to enter the shutdown mode of the board.

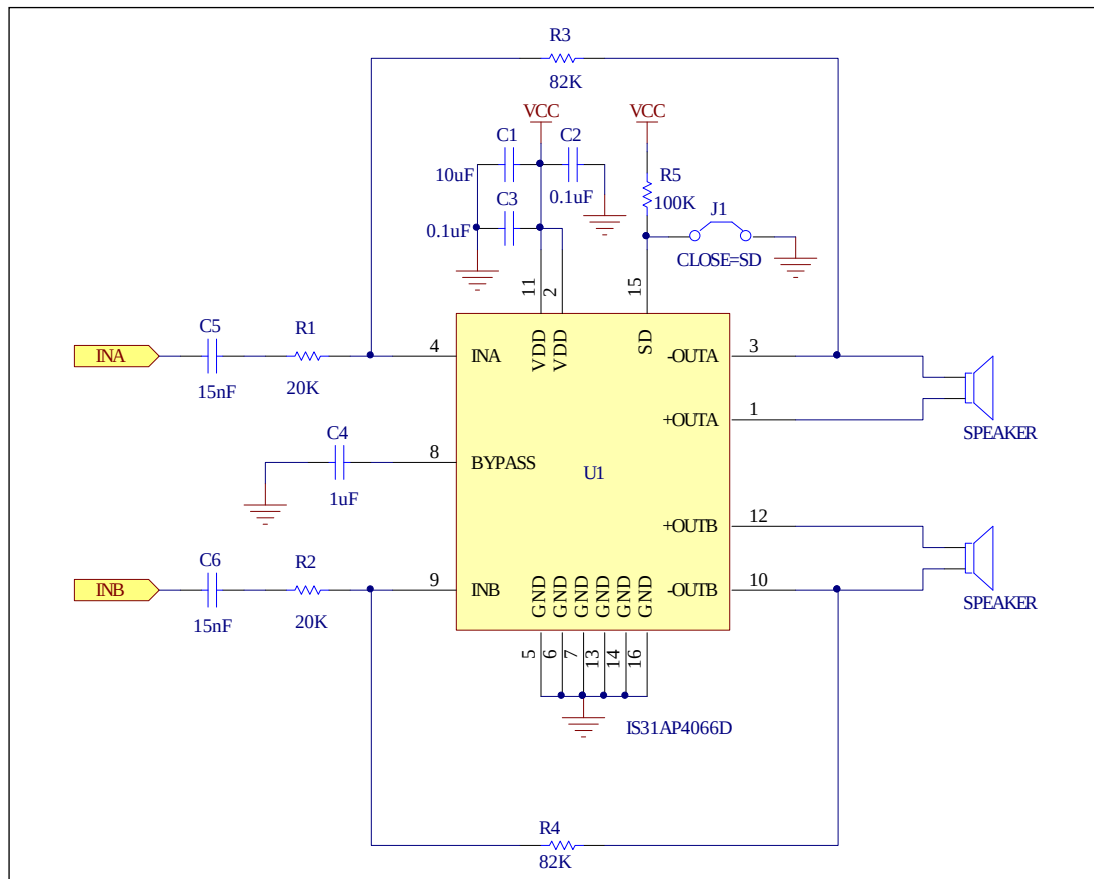


Figure 2: IS31AP4066D Application Circuit

IS31AP4066D CLASS-AB AUDIO AMPLIFIER

BILL OF MATERIALS

Name	Symbol	Description	Qty	Supplier	Part No.
Amplifier	U1	Class- AB power amplifier	1	ISSI	IS31AP4066D
Resistor	R1,R2	RES,20k,1/16W,±1%,SMD	2	Yageo	RC0603JR-0720KL
Resistor	R3,R4	RES,82k,1/16W,±1%,SMD	2	Yageo	RC0603JR-0782KL
Resistor	R5	RES,100k,1/16W,±5%,SMD	1	Yageo	RC0603FR-07100KL
Capacitor	C1	CAP,10μF,10V,±20%,SMD	1	Yageo	CC0805KKX7R6BB106
Capacitor	C2 ,C3	CAP, 0.1μF,50V,±10%,SMD	2	Yageo	CC0603KKX7R9BB104
Capacitor	C4	CAP,1μF,50V,±10%,SMD	1	Yageo	CC0603KKX7R9BB105
Capacitor	C5,C6	CAP,15nF,50V,±10%,SMD	2	Yageo	CC0603KKX7R9BB153
Connector	DC IN	2.5 mm DC connector	1		
Connector	OUTA,OUTB	RCA –type connector	2		
Connector	AUDIO IN	3.5mm min connector	1		

Bill of materials, refers to Figure 2 above.

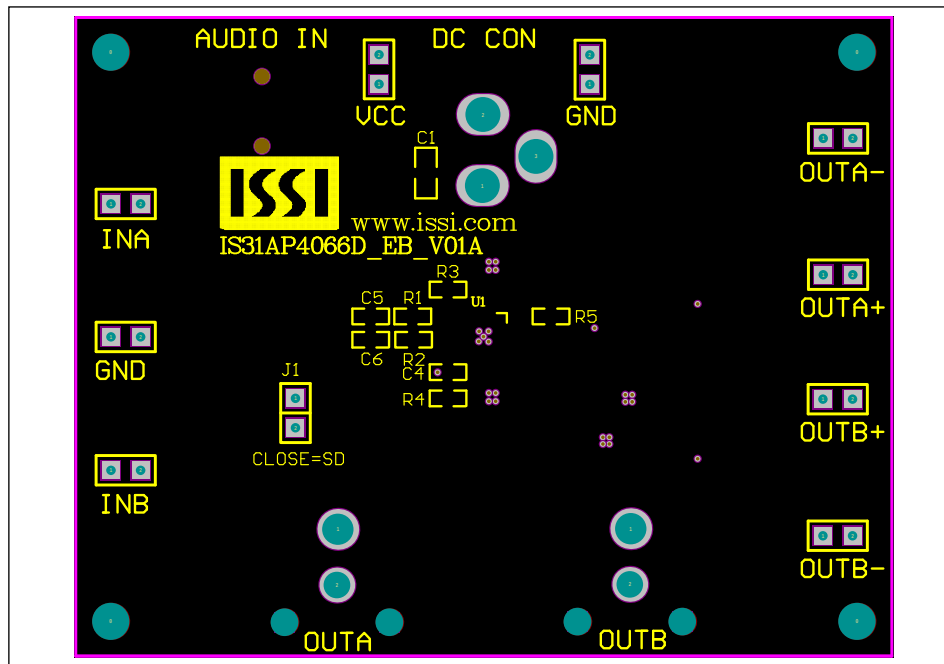


Figure 3: Board Component Placement Guide - Top Layer

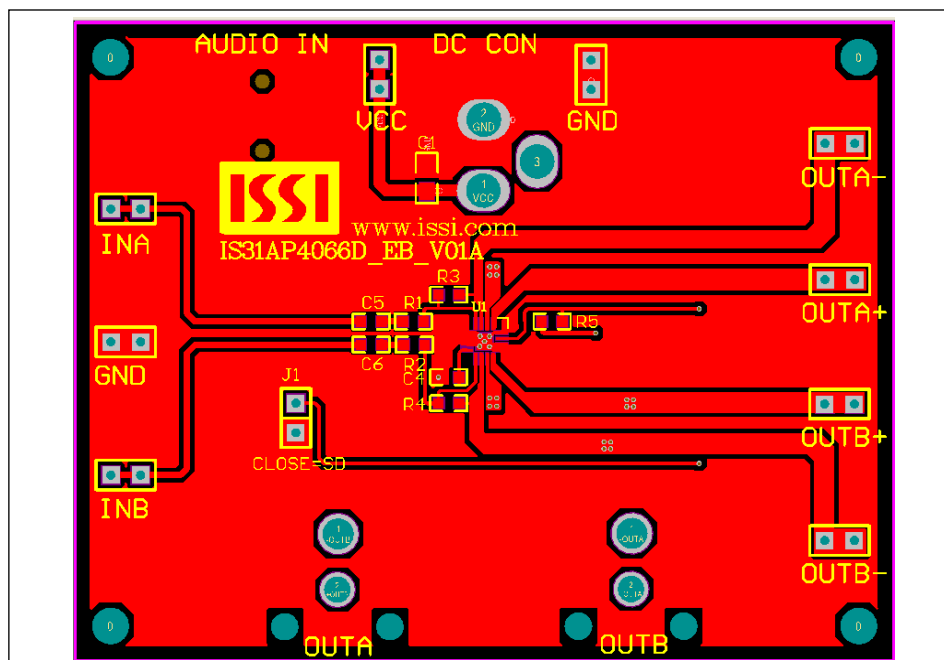


Figure 4: Board PCB Layout - Top Layer

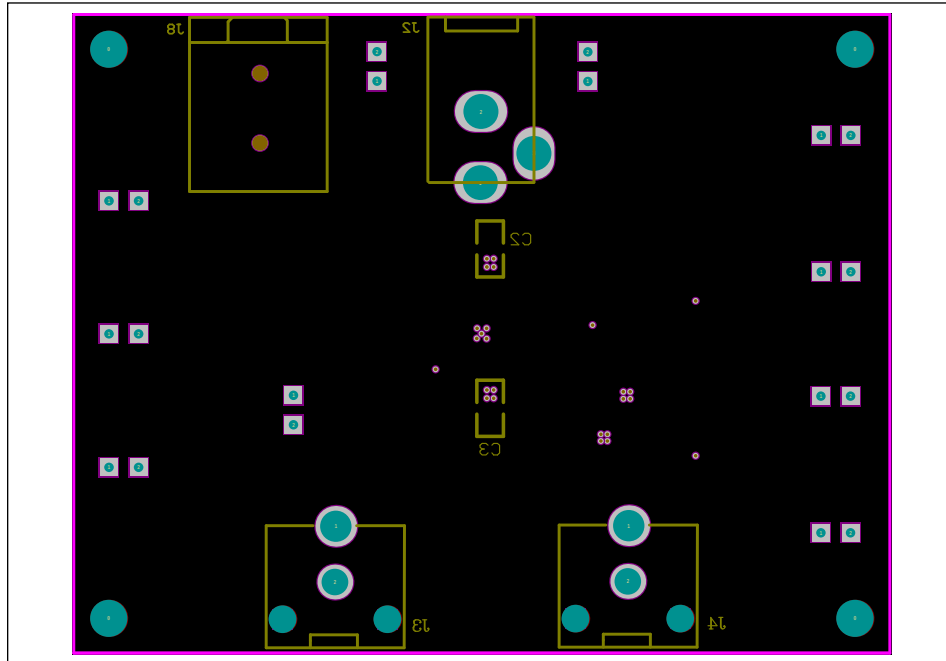


Figure 5: Board Component Placement Guide - Bottom Layer

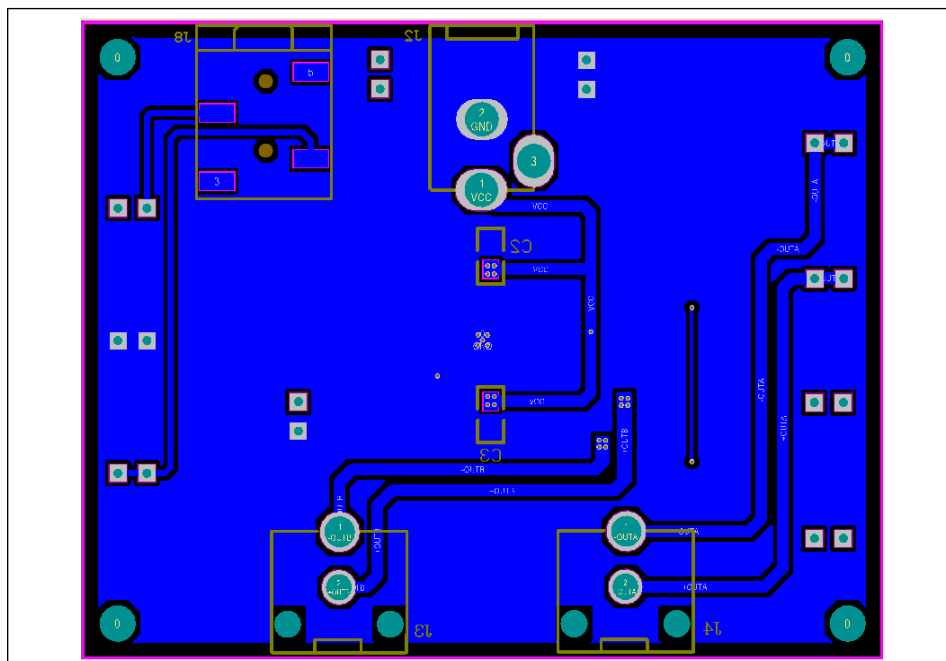


Figure 6: Board PCB Layout - Bottom Layer

Copyright © 2015 Integrated Silicon Solution, Inc. All rights reserved. ISSI reserves the right to make changes to this specification and its products at any time without notice. ISSI assumes no liability arising out of the application or use of any information, products or services described herein. Customers are advised to obtain the latest version of this device specification before relying on any published information and before placing orders for products. Integrated Silicon Solution, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of the life support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications unless Integrated Silicon Solution, Inc. receives written assurance to its satisfaction, that:

- a.) the risk of injury or damage has been minimized;
- b.) the user assume all such risks; and
- c.) potential liability of Integrated Silicon Solution, Inc is adequately protected under the circumstances

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9