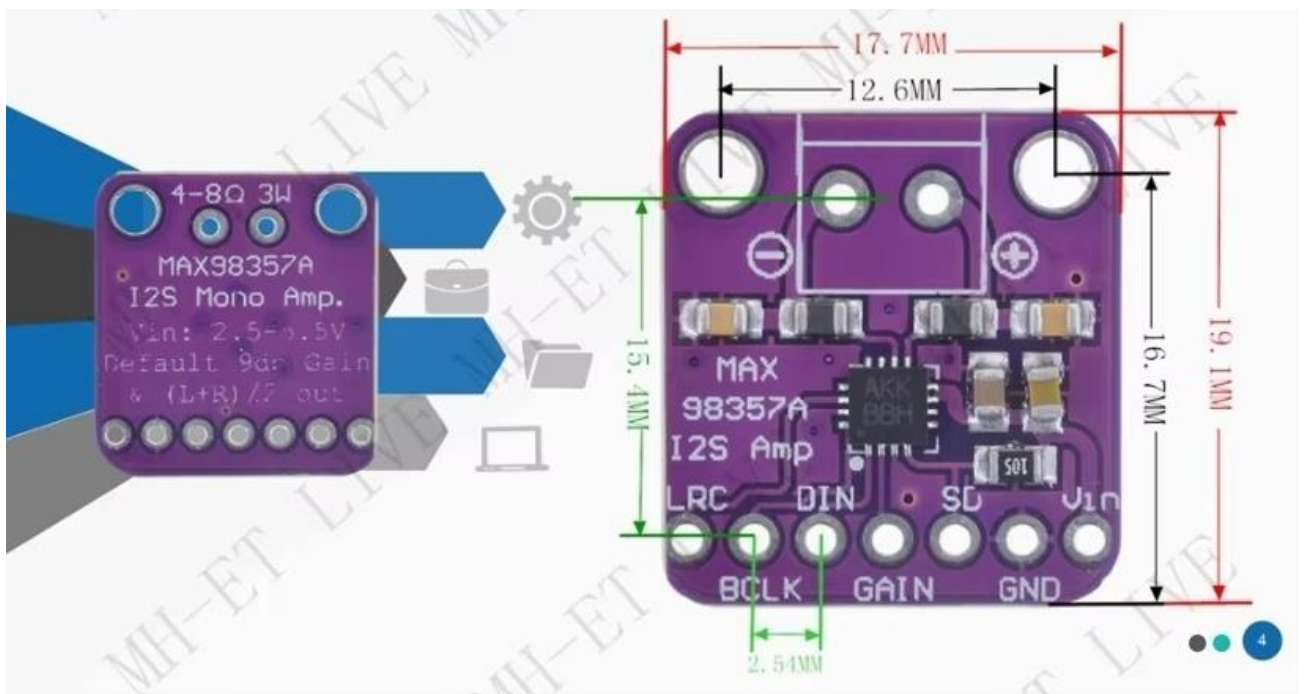



## MAX98357

Maxim announces the MAX98357 and MAX98358 digital input Class D audio power amplifiers, enabling designers to implement compact, efficient, plug-and-play solutions at a cost-effective price. In addition to its small form factor, the device is capable of achieving a 3.2W Class AB amplifier with Class D amplifier efficiency, resulting in excellent high fidelity sound for a variety of product applications.

The MAX98357 Pulse Code Modulation (PCM) and MAX98358 Pulse Density Modulation (PDM) plug-and-play speaker amplifiers take advantage of the flexibility of Maxim's pinout.

- 01** Output power: 3.2W at 4Ω and 10% THD  
1.8W at 8Ω and 10% THD
- 02** I2S sampling rate: 8kHz-96kHz
- 03** Class D gain optional : 3dB/6dB/9dB/12dB/15dB
- 04** No master clock (MCLK) required
- 05** Plug and Play: 35 different clocks and 128 digital audio formats can be automatically configured with a single power supply
- 06** Suitable for microcontrollers or development board systems with I2S audio output such as Raspberry Pi, Arduino and ESP32





**LRC** : Frame Clock. Left/right clock for I2S and LJ mode. Sync clock for TDM mode

**BCLK** : Bit Clock Input

**DIN** : Digital Input Signal

**GAIN** : Gain and Channel Selection.

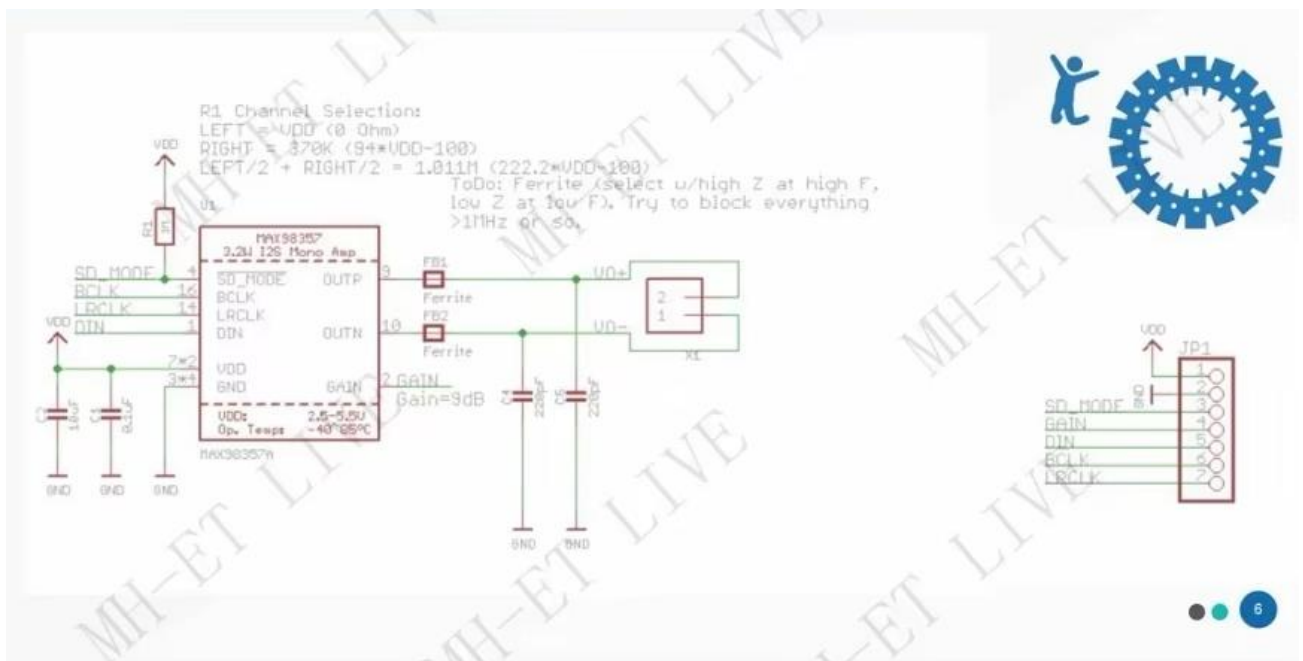
**SD** : Shutdown and Channel Select. Pull SD\_MODE low to place the device in shutdown.

**GND** : GND

**VCC**: DC 2.5V-5.5V

05

Schematic



## 06 Used with INMP441 to realize recording and broadcasting functions in the ESP32 development environment (wiring diagram)

### I2S MIC INMP441

3.3V - +V  
GND - GND  
GND - L/R  
IO22 - WS  
IO34 - SD  
IO26 - SCK



\*Capacitor 22pF between IO26 and GND will stabilize operation.  
IO34 should be pull down with 100kΩ.

### TF CARD

IO5 - SS ②  
IO23 - MOSI ③  
3.3V - 3.3V ④  
IO18 - SCK(SD) ⑤  
GND - GND ⑥  
IO19 - MISO ⑦



\*IO5, IO23, IO18, and IO19 should be pull up with 10kΩ.

### ESP32 Music Player



### MAX98357 I2S AMP

5V - VCC  
GND - GND  
IO22 - LRC  
IO25 - DIN  
IO26 - BCLK



Speaker -  
Speaker +

\*Capacitor 22pF between BCLK and GND will stabilize operation.

### TF CARD

IO5 - SS ②  
IO23 - MOSI ③  
3.3V - 3.3V ④  
IO18 - SCK ⑤  
GND - GND ⑥  
IO19 - MISO ⑦



\*SS, MOSI, SCK, and MISO should be pull up with 10kΩ.