



CS5290E Overview:

CS5290E is a capacitive boost GF-class mono audio amplifier using CMOS technology. It can provide up to 5.2W continuous power for a 40W load. The 28-fold gain fixed inside the CS5290E chip effectively reduces the number of peripheral components. The amplifier integrates two working modes, Class D and Class AB, to ensure strong power output in Class D mode, while also eliminating the interference of the amplifier to the system when there is FM. CS5290E has a unique anti-crack (NCN) function, which can automatically adjust the gain of the amplifier according to the size of the output signal to achieve a more comfortable listening experience.

The CS5290E is only made of low-cost resistors and capacitors. In mobile audio devices powered by lithium batteries, the CS5290E is an ideal amplifier solution for the audio subsystem. The fully differential architecture and extremely high PSRR of the CS5290E effectively improve the CS5290E's ability to suppress RF noise. In addition, the CS5290E has built-in over-current protection and over-temperature protection, which effectively protect the chip from being damaged under abnormal working conditions.

CS5290E is available in ESOP10 package and is rated for operation in the temperature range of -40°C to 85°C.

CS5290E features:

Integrated Charge Pump boost module, integrated AB and D class working modes, GF class audio amplifier

Shaft power

Po at VBAT =5.0V, RL =4Ω+33uH

THD + N =10%5.2W(NCN OFF @ DMODE)

THD + N =1%4.3W(NCN OFF @ D MODE)

Po at VBAT =4.2V. RL =4Q+33uH

THD + N =10%4.8W(NCN OFF @ D MODE)

THD + N =1%4.1W(NCNOFF @ D MODE)

Po at VBAT =3.6V, RL =4Q+33uH

THD + N =10%3.45W(NCN OFF @ D MODE)

THD + N =1%3.00W(NCN OFF @ D MODE)

Input voltage range: 2.7~5.5V

Shutdown current: <1pA

Standby current: 15mA

Class D modulation frequency: 300KHz

Anti-breaking sound mode switch

AERC patented technology provides excellent full-bandwidth EMI suppression capability

Excellent "pop-noise" suppression capability

High power supply rejection ratio (PSRR): -80dB at 217Hz

Over temperature protection, short circuit protection, over voltage protection

CS5290E Applications:

Bluetooth Speaker

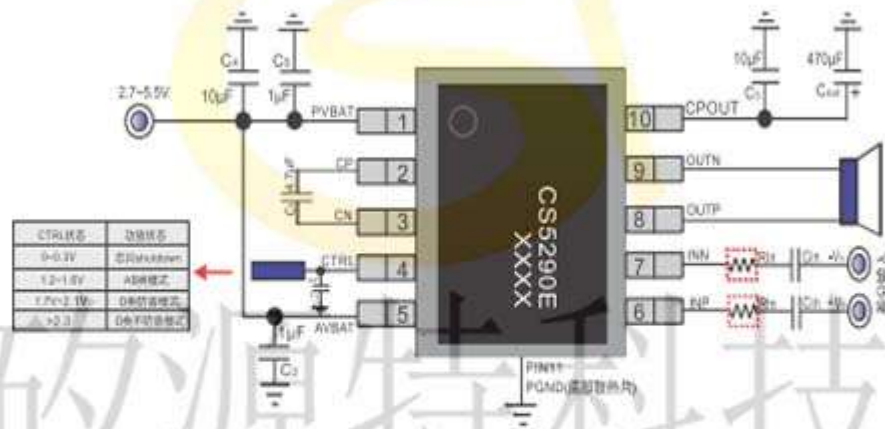
Portable audio equipment

CS5290E package:

ESOP10L

CS5290E typical application circuit diagram:

典型应用电路图



NOTES:

- (1) Cr (Flyin电容) 需要使用耐压为16V, X5R以上的贴片电容
- (2) 底部的散热片作为CS5290E的PIN11管脚(PGND), 要与大地相连。
- (3) 图中红框内Rin为预留输入电阻位置, CS5290E内置28倍增益, 内部集成的输入电阻为20K, 反馈电阻为560K, 若要增益小于28倍则放大倍数的计算为: $\text{Gain} = 560K / (20K + R_{in})$