

18W 单声道 AB/D 类双模式音频功率放大器

PRELIMINARY DATASHEET

器件概述

FH8511 是一款 20W 单声道 AB/D 类切换音频功率放大器，支持差分输入，超低 EMI，无需滤波器。可通过不同电平控制芯片的工作模式：CTRL 脚电压为 2.0V-5.0V，芯片进入 D 类工作模式，0.9-1.5V 时芯片进入 AB 类工作模式，0.5V 以下时芯片关断，应用灵活方便。FH8511 采用先进的技术，在全带宽范围内极大地降低了 EMI 干扰，最大限度地减少了对其他外部元件的影响。其输出无需滤波器的 PWM 调制结构减少了外部元件、PCB 面积和系统成本。FH8511 在 12.0V 的工作电压时，能够向 4Ω 负载提供高达 18W 的输出功率，90% 以上的效率更加适合便携式音频系统。

FH8511 内置过流保护、过热保护及欠压保护功能，有效保护芯片在异常工作状况下不被损坏。

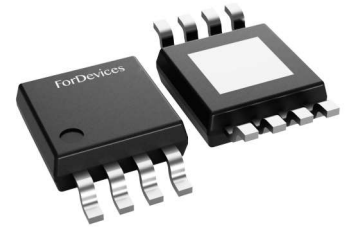
FH8511 提供 ESOP-8L 封装，额定的工作温度范围为-40°C至 85°C。

电气特性

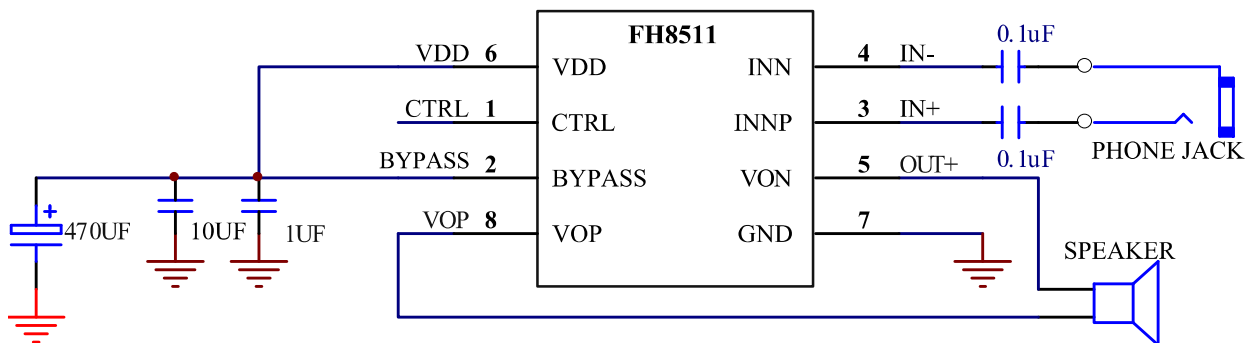
- 工作电压范围：6V-14V
- 输出功率：
 - 7W (CLASS D, 7.4V/4Ω, THD=10%)
 - 10W (CLASS D, 9V/4Ω, THD=10%)
 - 18W (CLASS D, 12V/4Ω, THD=10%)
- 最高可达 92%效率 (12V/8Ω)
- 电平设置工作模式
- 无需输出滤波器
- 差分输入
- 优异的“上电，掉电”噪声抑制
- 过流保护、过热保护、欠压保护
- 封装：ESOP-8L

应用范围

- 大功率蓝牙音响
- 移动音箱扩音器
- 其他消费类音频设备

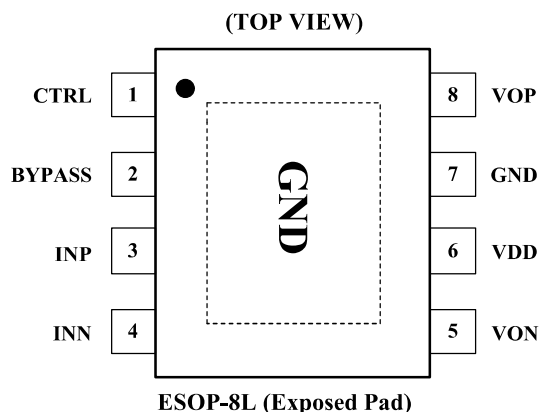


典型应用电路



图一、FH8511 应用电路图

引脚配置

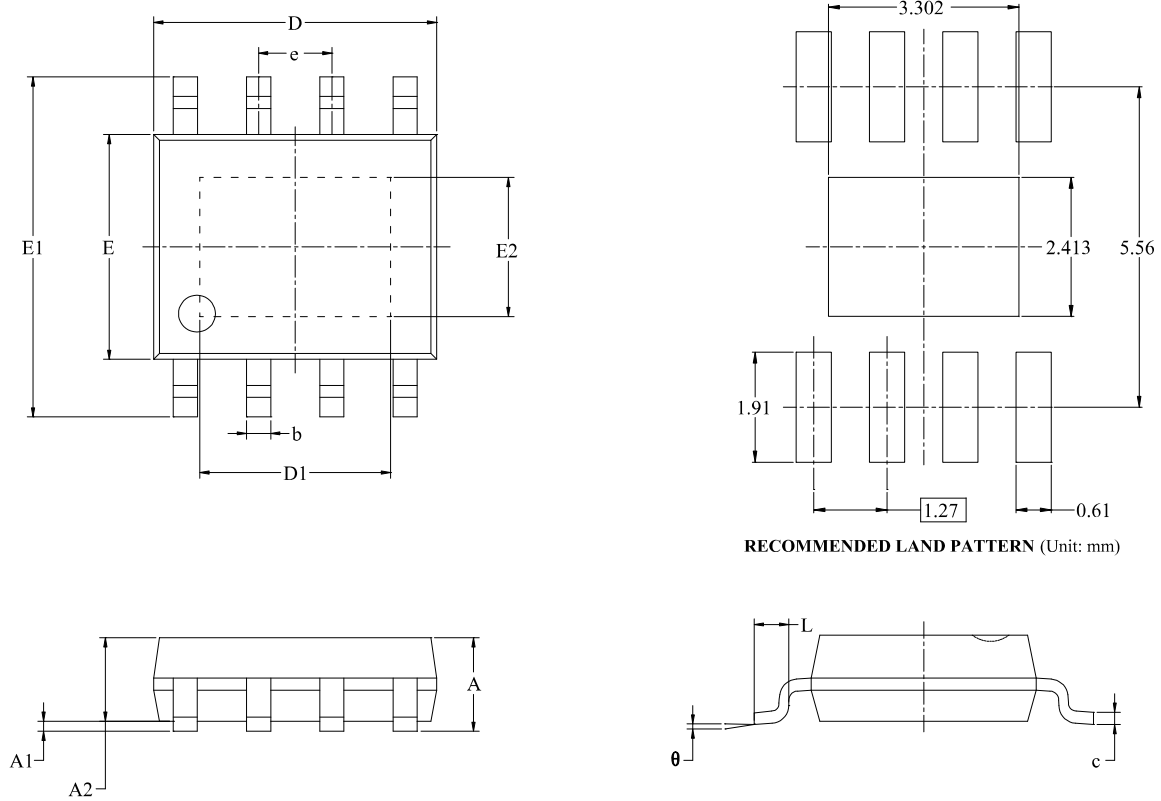


引脚描述

编号	管脚名称	管脚描述
1	CTRL	模式控制端
2	BYPASS	内部参考电压外接去耦电容
3	INP	放大器正输入端
4	INN	放大器负输入端
5	VON	输出负端
6	VDD	电源输入
7	GND	电源地
8	VOP	输出正端

PACKAGE OUTLINE DIMENSIONS

ESOP-8L (Exposed Pad)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A		1.700		0.067
A1	0.000	0.100	0.000	0.004
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
D1	3.202	3.402	0.126	0.134
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
E2	2.313	2.513	0.091	0.099
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

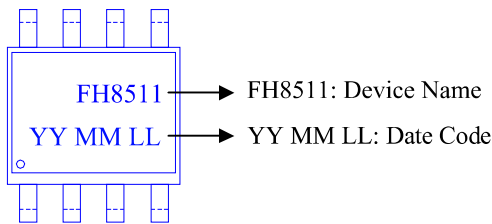
ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH8511S8	6.0V ~ 14.0V	<ul style="list-style-type: none"> • Audio Amplifier AB/D • Power Output: 18.0W • Efficiency: 92%(Typ.) • I_{SD}: 0.1uA • PSRR: -85dB(Typ.) 	-40°C to 85°C	ESOP-8L	FH8511 YY MM LL	3000PCS/Reel

Note:

- **FH8511** devices are Pb-free and RoHs compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.
- ForDevices reserves the right to amend and legally interpret the electrical parameters of this chip device. (<http://www.fordevices.com>)

Device Name: ESOP-8L



ESD SENSITIVITY CAUTION

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.



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Note:

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