

1.50W Mono Fully Differential Class-AB Audio Power Amplifier

PRELIMINARY DATASHEET

DESCRIPTION

The FH8107 is a fully differential audio power amplifier that is designed for portable communication device applications and demanding applications in mobile phones. It is capable of delivering 1.5W of continuous average power into an 8Ω load with typically 1% distortion (THD+N) from a 5.0V battery voltage. It operates from 2.5V to 5.5V power supply.

The FH8107 features a low power consumption shutdown mode. To facilitate this, shutdown may be enabled by logic low. Additionally, the FH8107 features an internal thermal shutdown protection mechanism.

The FH8107 contains advanced pop/click circuitry, with a minimal amount of external components. All these features make FH8107 ideal for wireless handsets and other low voltage applications where minimal power consumption is a primary requirement.

The FH8107 is available in Green DFN-2×2-8L package. It operates over an ambient temperature range of -40°C to +85°C.

FEATURES

- Fully Differential Amplifier
- Excellent PSRR: Direct Connection to Battery
- 1.5W into 8Ω Load from 5V Supply at THD+N=1%(typ.)
- Operation Voltage: 2.5V to 6.0V
- Low Shutdown Current
- Improved Pop/Click Circuitry
- Support Single-Ended or Differential Input
- Thermal Overload Protection Circuitry
- No Output Coupling Capacitors, Bootstrap Capacitors Required
- External Gain Configuration Capability
- Operating Temperature Range: -40°C to +85°C
- Available in Green DFN-2×2-8L Package

APPLICATIONS

- Portable Systems
- Wireless Handsets
- PDAs
- Mobile Phone
- Handheld Computers
- GPS

Application Circuit

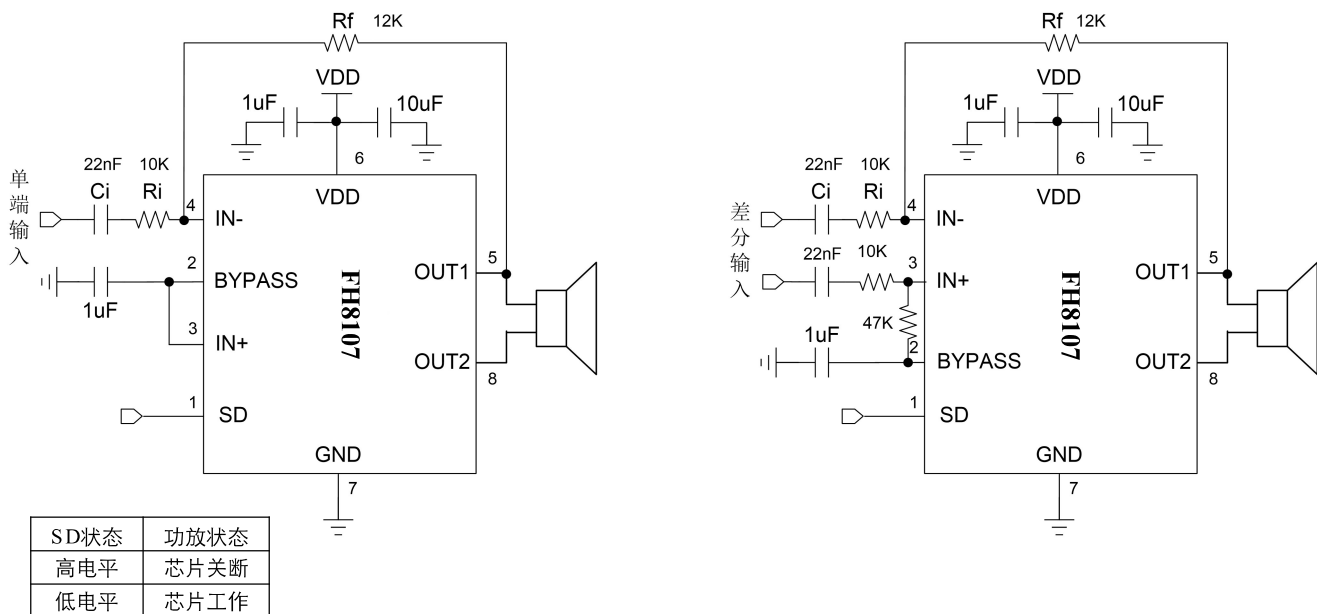
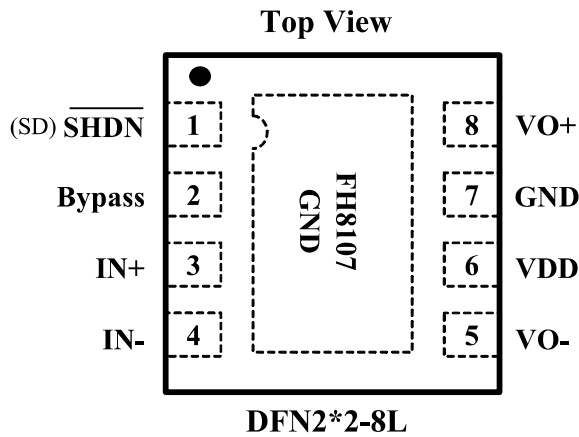
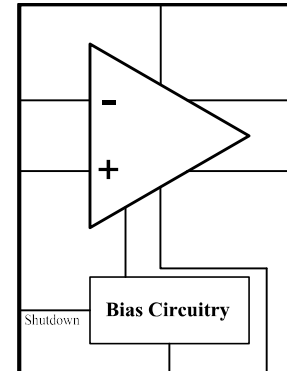


Figure 1. FH8107 Typical Application Circuit

PIN CONFIGURATION



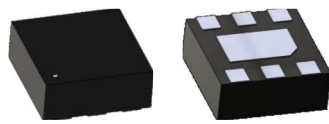
Functional Block Diagram



PIN FUNCTIONS

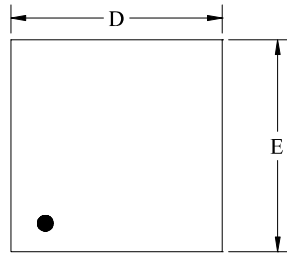
PIN		I/O	DESCRIPTION
NAME	NO.		
BYPASS	2	—	Mid-supply voltage, adding a bypass capacitor improves PSRR
IN-	4	I	Negative differential input
IN+	3	I	Positive differential input
GND	7	I	High-current ground
$\overline{\text{SHDN}}$ (SD)	1	I	Shutdown terminal (active low logic)
Thermal Pad	—	—	Connect to ground. Thermal pad must be soldered down in all applications to properly secure device on the PCB.
V _{DD}	6	I	Power supply
V _{O+}	8	O	Positive BTL output
V _{O-}	5	O	Negative BTL output

引脚序号	符号	功能描述
1	$\overline{\text{SHDN}}$ (SD)	关断控制端, 高电平关断
2	BYPASS	偏置电压输出端
3	IN+(INP)	无连接, 芯片内部连接至 BYPASS
4	IN-(INN)	负相输入端
5	VO-(VON)	负相输出端
6	VDD(VCC)	电源
7	GND	接地
8	VO+(VOP)	正相输出端

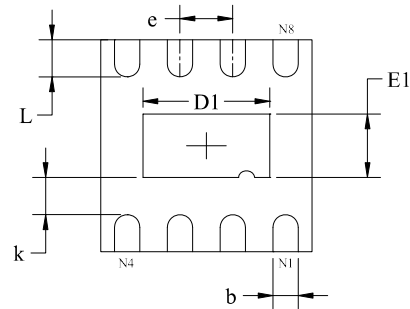


PACKAGE OUTLINE DIMENSIONS

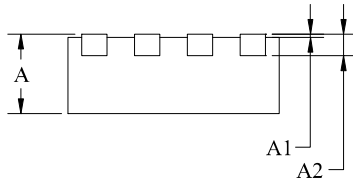
- Type: DFN-2×2-8L



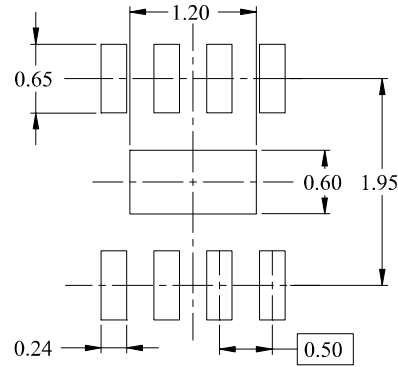
TOP VIEW



BOTTOM VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN

(Unit: mm)

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A2	0.203 REF		0.008 REF	
D	1.900	2.100	0.075	0.083
D1	1.100	1.300	0.043	0.051
E	1.900	2.100	0.075	0.083
E1	0.500	0.700	0.020	0.028
k	0.200 MIN		0.008 MIN	
b	0.180	0.300	0.007	0.012
e	0.500 TYP		0.020 TYP	
L	0.250	0.450	0.010	0.018

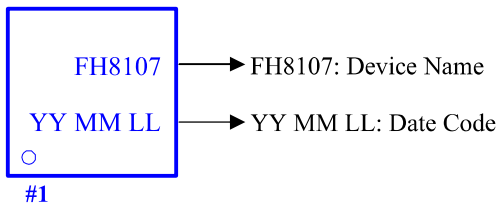
ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH8107D8	2.5V ~ 6.0V	<ul style="list-style-type: none"> • Audio Amplifier Class-AB • Power Output: 1.5W • Single-End or Differential Input 	-40°C to 85°C	DFN2*2-8L	8107 <u>YY MM LL</u>	5000PCS/Reel

Note:

- **FH8107** 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: DFN2x2-8L



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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▲ Update by Jan.2022