# smPWR-PAM8904

20.4x12.7mm 1x,2x,3x Boost Piezo Driver 18Vpp
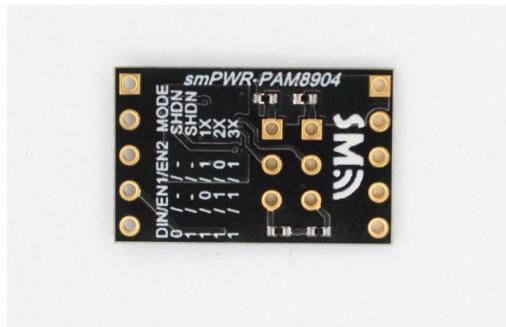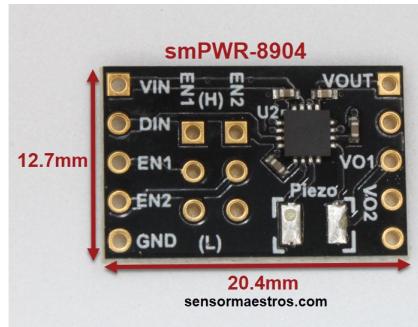
Features

- 1X, 2X, 3X Selectable Boost Mode
- 1MHz Boost Converter Operation
- 18Vpp from 3.3Vin / 24Vpp from 5.5Vin
- Automatic Standby and Wake-Up Control
- Only 4 External Caps Required
- Vin = 1.8-5.5V / 4kHz Fin Typical

- Differential or Single-Ended Operation
- Micro-Size Eval Board(12.7x20.4mm)
- 2.54mm(0.1") headers on 17.78mm(0.7") spacing
- Low Power Consumption
  - 50uA @ 1X / 720uA @ 2X / 1.7mA @ 3X No Load
  - 1uA Sleep

Applications

- Alarm Clocks
- Doorbell
- Security System

- Audible Indicators
- Security Systems
- 'Find Me' Mode

Description

The PAM8904 is a 1X/2X/3X selectable Boost Converter that accepts an input voltage ranging from 1.8-5.5V. The Boost converter can produce up to 12Vmax. The PAM8904 can be operated in a Differential or Single-Ended output and is intended to drive Piezo speaker that require larger voltage ranges to get Maximum Sound Pressure Levels. The 1X-3X mode is selectable via EN1 & EN1 pins. The smPWR-8904 Eval Board provides the ability to set EN1 & EN2 HIGH or LOW through the 3pin 2.54mm Headers. The PAM8904 can drive up to 15nF loads and the Boost operates at 1.0MHz. The PAM8904 only requires 4 external capacitors to provide a complete piezo driver solution all while providing excellent integrated features such as 'Automatic Standby' and 'Wake-Up Control'. The PAM8904 comes in 3 package options being a 16pin 3x3mm QFN, 12pin 3x3 QFN and a 12pin 2x2mm QFN. The smPWR-PAM8904 utilizes the 16pin 3x3 QFN.

Design Services

Custom Embedded PCB/Software, Wireless/Mobile Applications, and general design services can be provided by Sensor for your own application. To have Sensor Maestros review your project needs please go to www.sensormaestros.com and fill out a Project Questionnaire form on the Design Services page.

PAM8904 Datasheet
https://www.diodes.com/_files/datasheets/PAM8904.pdf

Contents

smPWR-PAM8904 Pin Descriptions
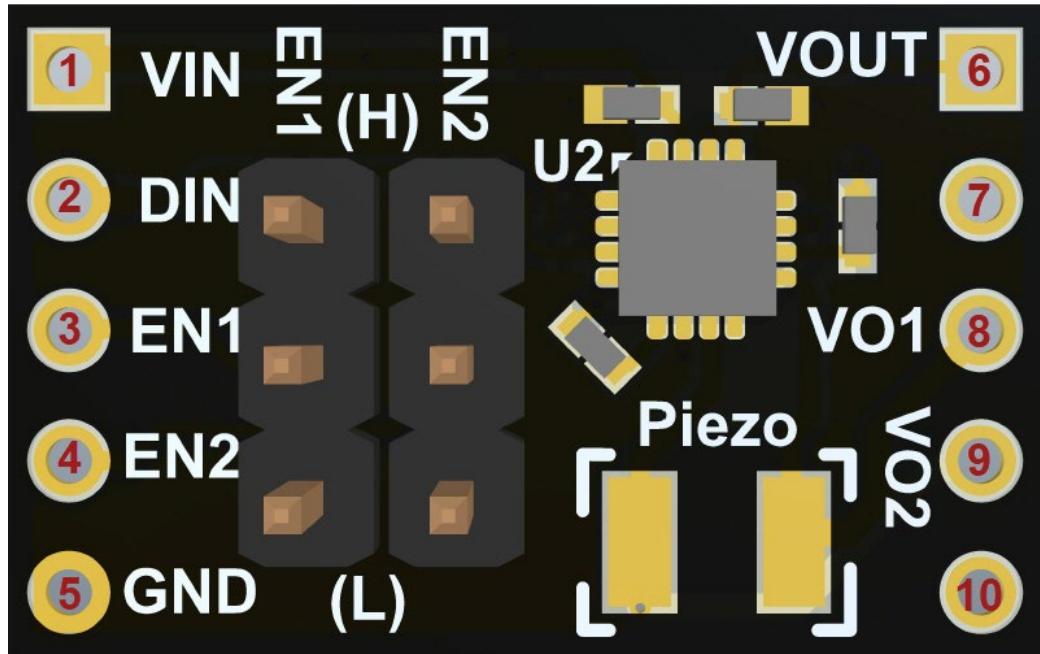
Pin	Name	Type	Function
1	VIN	Power	Power Supply, 1.8-5.5V
2	DIN	Signal	Rectangular Pulse signal Input 4kHz Typical
3	EN1	Input	Select L/R: High = Left Low = Right
4	EN2	Input	Word Strobe
5	GND	Power	Serial Data Output
6	VOUT	Power	Bit Clock(BCLK)
7	N/C	N/A	No Connect
8	VO1	Power	Negative Output
9	VO2	Power	Positive Output
10	N/C	N/A	No Connect

smPWR-PAM8904 Operation

DIN	EN1	EN2	MODE
0	--	--	Shutdown Mode
1	0	0	Shutdown Mode
1	0	1	1X Mode
1	1	0	2X Mode
1	1	1	3X Mode

NOTE: Care must be taken with using the 3X mode with a Vdd supply of 4.5V or more. This will force Vout to exceed its Absolute Max specification of 13.5V.

1X/2X   Mode => 1.8-5.5V
1X/2X/3X   Mode => 1.8V-4.5V
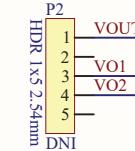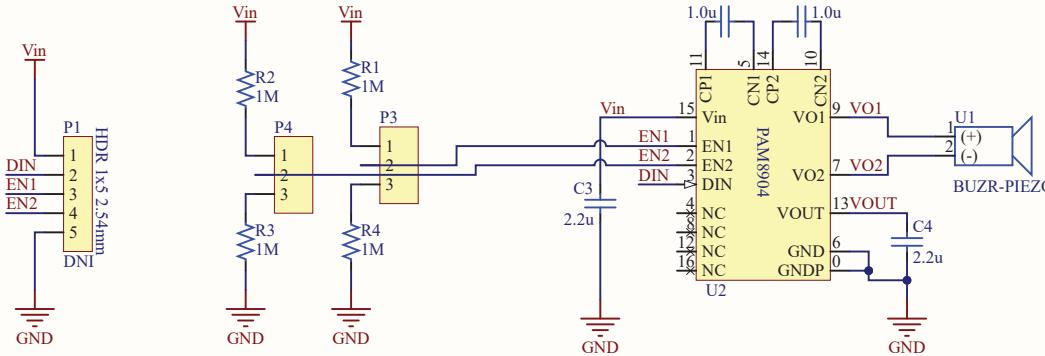
Operation Modes:

DIN	EN1	EN2	MODE
0	-	-	Shutdown
1	0	0	Shutdown
1	0	1	1x Mode
1	1	0	2x Mode
1	1	1	3x Mode

Vdd Range	Mode
1.5-4.5V	1x, 2x, 3x
1.5-5.5V	1x, 2x