



20W Stereo Class D Speaker Amplifier with Volume Control

MAX9744

General Description

The MAX9744 20W stereo Class D audio power amplifier provides Class AB amplifier performance with Class D efficiency, conserving board space and eliminating the need for a bulky heatsink. This device features single-supply operation, adjustable gain, shutdown mode, SYNC output, speaker mute, and industry-leading click-and-pop suppression.

The MAX9744 features a 64-step dual-mode (analog or digital), programmable volume control and mute function. The MAX9744 operates from a 4.5V to 14V single supply and can deliver up to 20W per channel into a 4Ω speaker with a 14V supply.

The MAX9744 offers two modulation schemes: a fixed-frequency modulation mode that allows one of several preset switching frequencies to be selected, and a spread-spectrum modulation mode that helps to reduce EMI-radiated emissions.

The MAX9744 features high 75dB PSRR, low 0.04% THD+N, and SNR in excess of 90dB. Robust short-circuit and thermal-overload protection prevent device damage during a fault condition. The MAX9744 is available in a 44-pin thin QFN-EP (7mm x 7mm x 0.8mm) package and is specified over the extended -40°C to +85°C temperature range.

Applications

Flat-Panel Televisions
PC Speaker Systems
Multimedia Docking Stations

Features

- ◆ Wide 4.5V to 14V Power-Supply Voltage Range
- ◆ Filterless Spread-Spectrum Modulation Lowers Radiated RF Emissions from Speaker Cables
- ◆ 20W Stereo Output (4Ω, $V_{DD} = 12V$, THD+N = 10%)
- ◆ Integrated Volume Control (I²C or Analog)
- ◆ Low 0.04% THD+N
- ◆ High 75dB PSRR
- ◆ High 93% Efficiency (20W, 8Ω)
- ◆ Integrated Click-and-Pop Suppression
- ◆ Low-Power Shutdown Mode
- ◆ Short-Circuit and Thermal-Overload Protection
- ◆ Available in a 44-Pin Thin QFN-EP (7mm x 7mm x 0.8mm)

Ordering Information

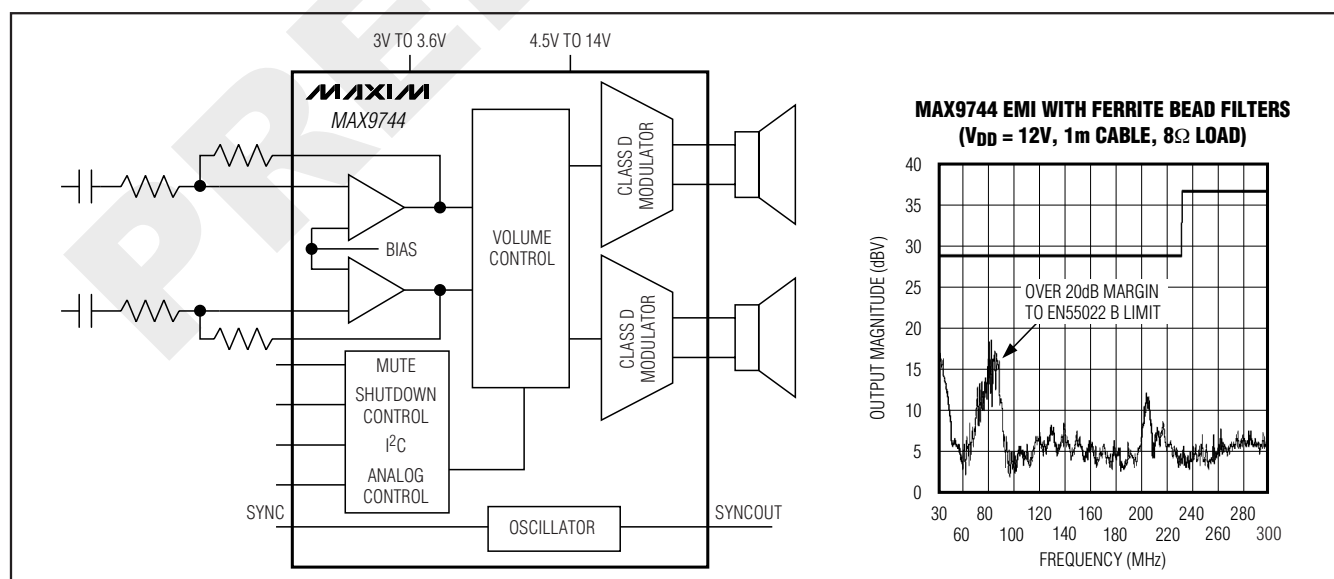
PART	TEMP RANGE	PIN-PACKAGE	PKG CODE
MAX9744ETH+	-40°C to +85°C	44 TQFN-EP*	T4477-3

+Denotes a lead-free package.

*EP = Exposed paddle.

Pin Configuration appears at end of data sheet.

Simplified Block Diagram



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For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.