24-Bit, 192kHz立体声D/A转换器

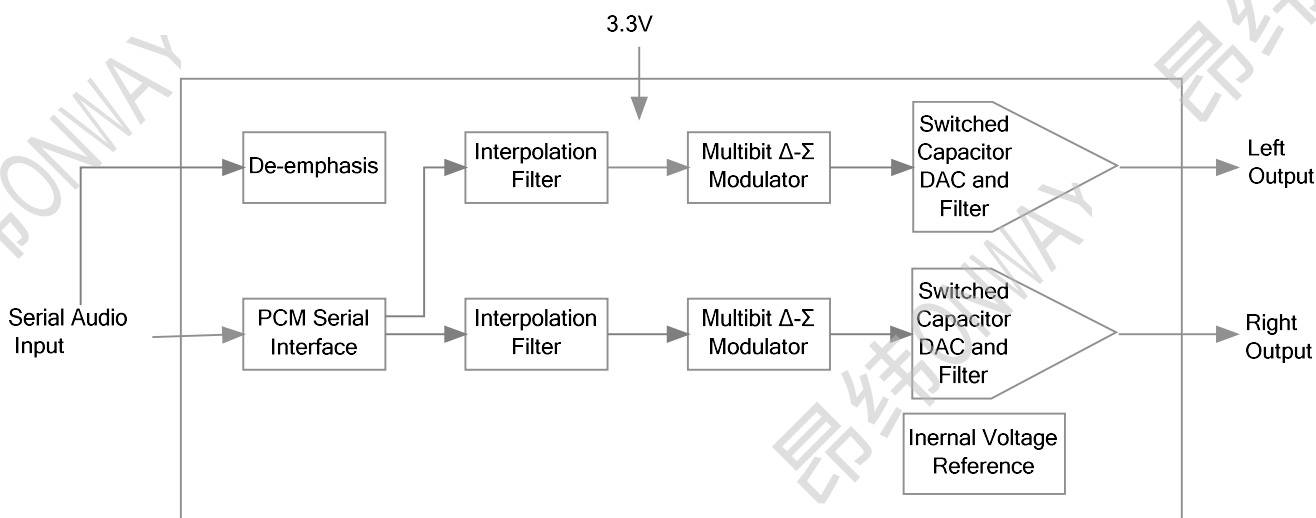## ■ FEATURES

· 支持多种音频数字输入格式, 最大支持24-bit字节

· 可自动检测采样频率, 最高192kHz

· 105dB动态范围

· -90dB THD+N

· 集成多比特位的Δ-Σ调制器

· 支持3.3V单电源供电

· 具有强抗时钟抖动能力

· 内部集成输出滤波

· 集成数字去重, 外部无需SCLK

· 输出pop声抑制

· MSOP10封装

■ APPLICATIONS

· 音响   · DVD   · 电视机

· 机顶盒 · 数码相框 · 家庭影院

■ DESCRIPTION

HT5010/1/2系列产品是一款低成本的立体声DA转换器, 内部集成了内插滤波器、DA转换器和输出模拟滤波等电路。其可支持多种音频数字输入格式, 最大支持24-bit字节。

该系列产品基于一个多比特位的Δ-Σ调制器, 将数字信号转化成两个声道的模拟信号并经过模拟滤波器滤波。该Δ-Σ调制器对时钟抖动的敏感度很低, 且在带宽范围外具有极低的噪声。其还可使用采样率和主时钟比作为自采样率(2kHz – 200kHz), 从而实现自动检测采样频率的功能。

该系列产品还集成了数字去重, 3.3V单电源供电, 无需外部SCLK, 简化了外围电路, 适用于DVD、数字电视、家庭影院、机顶盒等。

该系列产品为MSOP10封装。

■ BLOCK DIAGRAM

24-Bit, 192kHz Stereo D/A Converter

■ FEATURES

· Multiple audio data interface formats, up to 24-bit

· Automatically Detects Sample Rates up to 192kHz

· 105dB Dynamic Range

· -90dB THD+N

· Multi-bit Delta-Sigma Modulator

· 3.3V Single Power Supply

· Low Clock-Jitter Sensitivity

· Filtered Line-Level Outputs

· On-chip Digital De-emphasis

· Output pop-noise Minimization

· Small 10-pin MSOP Package

■ APPLICATIONS

· Speakers   · TV sets

· DVD Player   · Set top box

· Digital Photo Frame · DVD recorder

· Home theater · Automotive audio system

■ DESCRIPTION

The HT5010/1/2 family is a low-cost stereo digital to analog converter, including interpolation, multibit D/A conversion and output analog filtering in a 10-pin package.
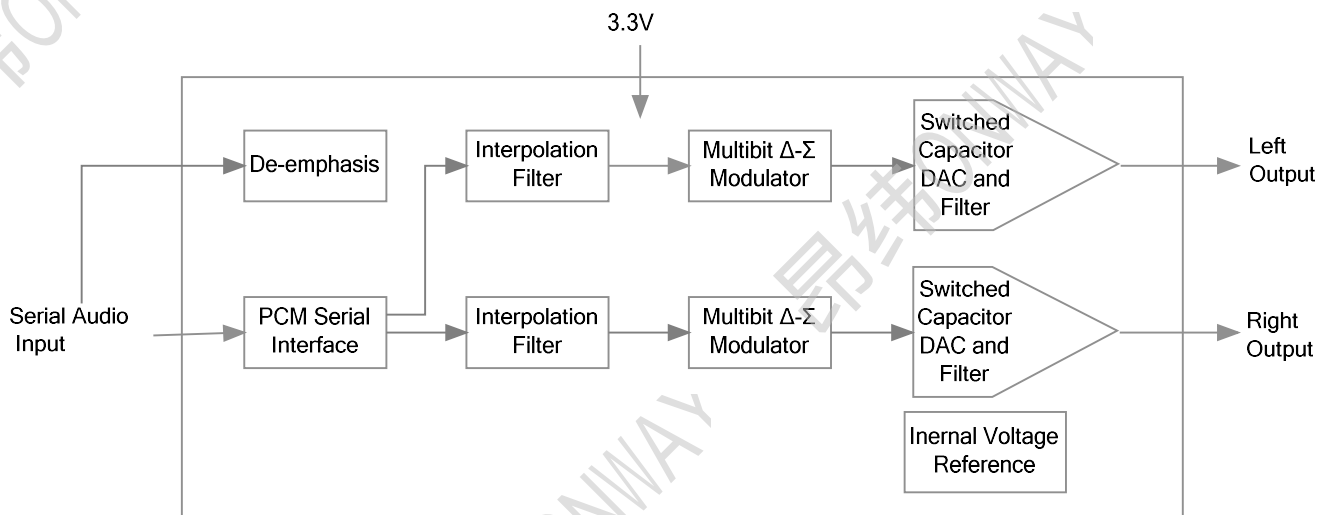
The device family can accept multiple audio formats up to 24-bit word length.

The device family is based on an advanced multi-bit Δ-Σ modulator to convert data into two channel analog outputs with a linear analog low-pass filter. The multi-bit Δ-Σ modulator makes the device with very low sensitivity to clock jitter and very low out-of-band noise. It also includes auto speed mode detection using both sample rate and master clock ratio as a method of auto-selecting sampling rates between 2 kHz and 200 kHz.
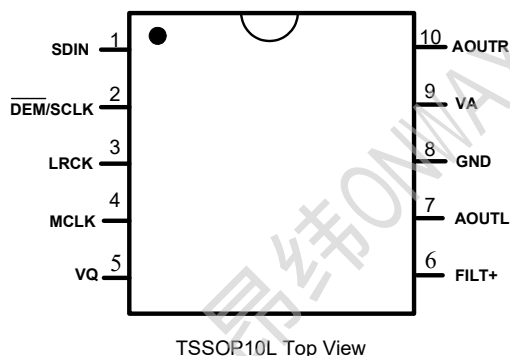
The device family contains on-chip digital deemphasis, operates from a single +3.3 V power supply, and requires minimal support circuitry. These features are ideal for DVD players & recorders, digital televisions, home theater and set top box products, and automotive audio systems.

The device family is available in a 10-pin MSOP package.

■ BLOCK DIAGRAM

■ TERMINAL CONFIGURATION

TSSOP10L Top View

■ TERMINAL FUNCTION

Terminal No.	NAME	I/O[1]	Description
1	SDIN	I	Serial audio data input.
2	$\overline{DEM}/SCLK$	I	De-emphasis / external serial clock input
3	LRCK	I	Left right clock
4	MCLK	I	Master clock
5	VQ	O	Filter connection for internal quiescent voltage
6	FILT+	O	Positive reference voltage for the internal sampling
7	AOUTL	O	Left channel analog output
8	GND	G	Ground
9	VA	P	Analog power supply
10	AOUTR	O	Right channel analog output

■ ORDERING INFORMATION

Part Number	Data Format	Package Type	Marking	Operating Temperature Range	Container
HT5010	I²S	MSOP-10	HT5010 UVWXYZ[2]	-40℃～85℃	Tape and Reel
HT5011	Left Justified	MSOP-10	HT5011 UVWXYZ	-40℃～85℃	Tape and Reel
HT5012	Right Justified	MSOP-10	HT5012 UVWXYZ	-40℃～85℃	Tape and Reel

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[1] I: input   O: output G: GNDP: Power
[2] UVWXYZ is production track code.