

## 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.

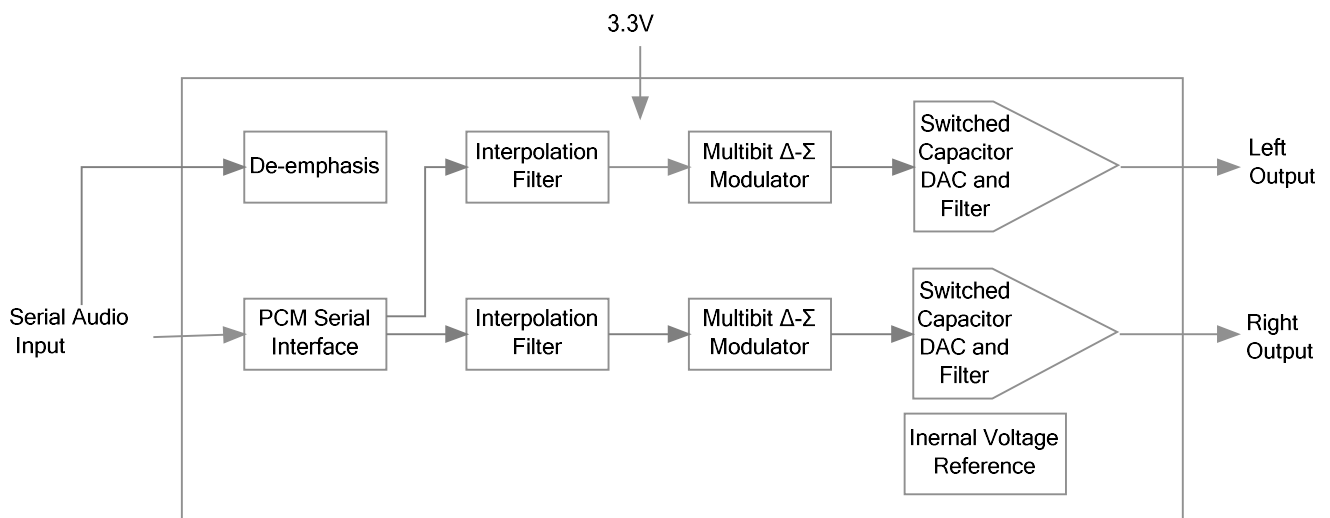
The device family can accept multiple audio formats up to 24-bit word length.

The device family is based on an advanced multi-bit  $\Delta$ - $\Sigma$  modulator to convert data into two channel analog outputs with a linear analog low-pass filter. The multi-bit  $\Delta$ - $\Sigma$  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.

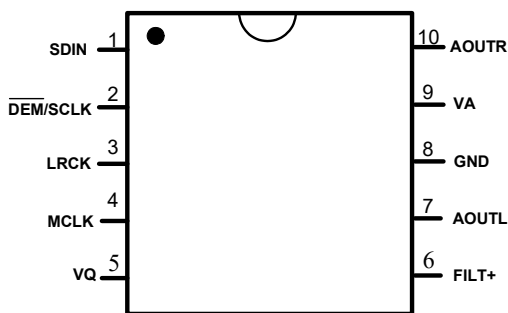
The device family contains on-chip digital deemphasis, operates from a single +3.3 V power supply, and requires minimal support circuitry. These features are ideal for DVD players & recorders, digital televisions, home theater and set top box products, and automotive audio systems.

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 <sup>1</sup>	Description
1	SDIN	I	Serial audio data input.
2	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	I <sup>2</sup> S	MSOP-10	HT5010 UVWXYZ <sup>2</sup>	-40°C~85°C	Tape and Reel
HT5011	Left Justified	MSOP-10	HT5011 UVWXYZ	-40°C~85°C	Tape and Reel
HT5012	Right Justified	MSOP-10	HT5012 UVWXYZ	-40°C~85°C	Tape and Reel

<sup>1</sup> I: input O: output G: GNDP: Power

<sup>2</sup> UVWXYZ is production track code.

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