

100dB 192KHz Multi-Bit Audio A/D Converter

PRELIMINARY DATASHEET

General Description

The FH5340 is a complete analog-to-digital converter for digital audio systems. It performs sampling, analog-to-digital conversion, and anti-alias filtering, generating 24-bit values for both left and right inputs in serial format sample rates up to 200KHz per channel.

The FH5340 uses a 5th-order, multi-bit Delta-Sigma modulator followed by digital filtering and decimation, which removes the need for an external anti-alias filter.

The FH5340 is available in a 16-pin TSSOP package for Commercial (-10°C to +70°C) and Automotive grades (-40°C to +85°C).

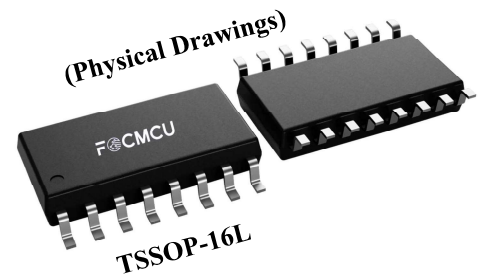
The FH5340 is ideal for audio systems requiring wide dynamic range, negligible distortion and low noise, such as set-top boxes, DVD-karaoke players, DVD recorders, A/V receivers, and automotive applications.

Key Features

- Advanced Multi-bit Delta-Sigma Architecture
- 24-bit Conversion
- Supports All Audio Sample Rates Including 192KHz
- -88dB THD+N
- 77 mW Power Consumption
- High-Pass Filter to Remove DC Offsets
- Analog/Digital Core Supplies from 3V to 3.6V
- Supports Logic Levels from 3V to 3.6V
- Auto-detect Mode Selection in Slave Mode
- Auto-Detect MCLK Divider

APPLICATIONS

- Soundbar
- Audio Interface
- Digital TV
- A/V Receiver
- DVR
- NVR



Function Block Diagram

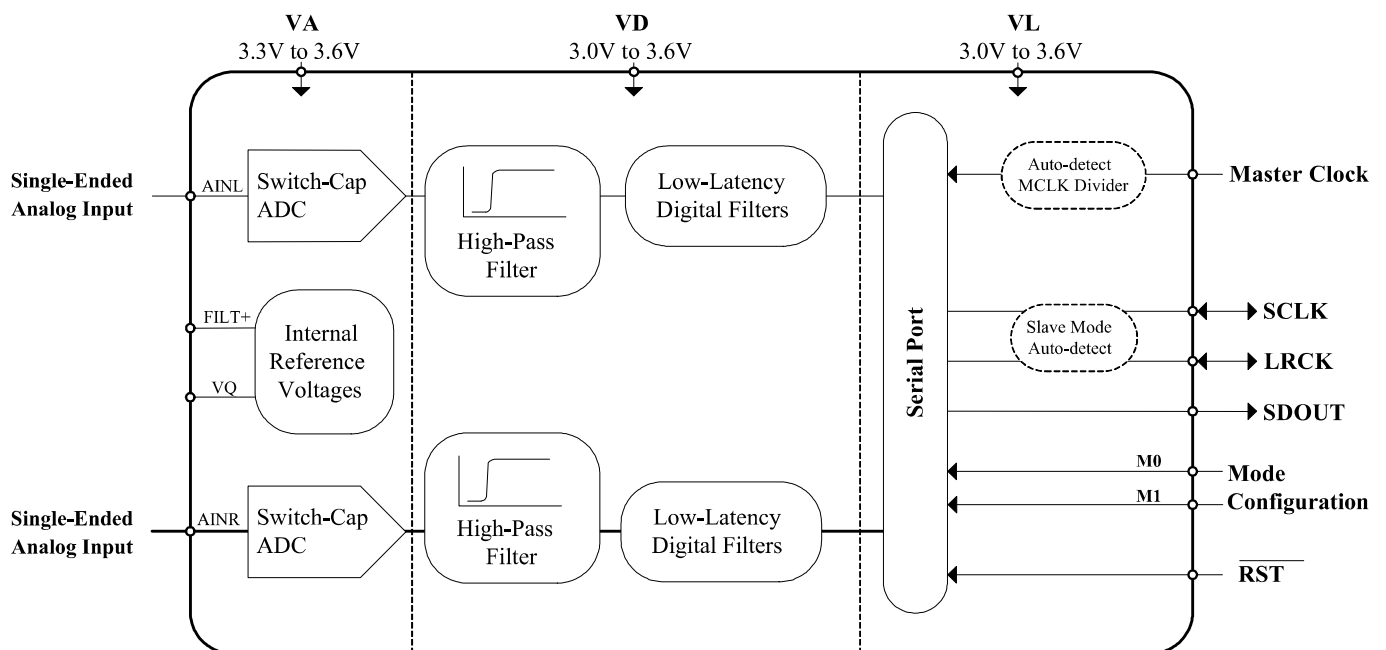
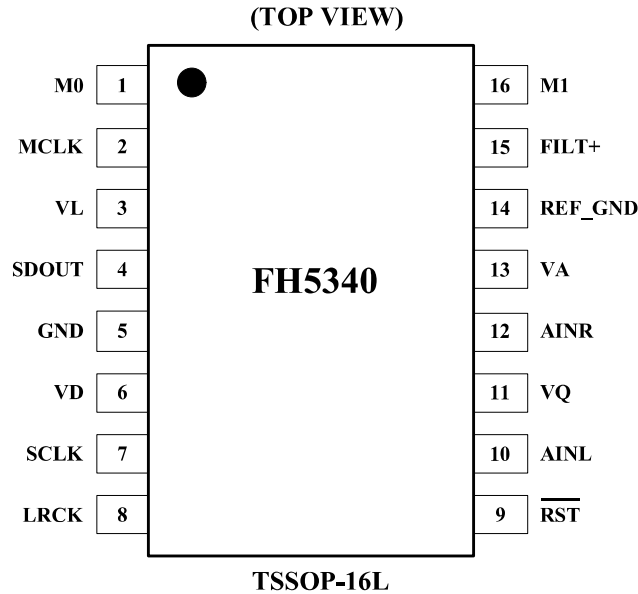


Figure 1. FH5340 Block Diagram

PIN CONFIGURATIONS



PIN DESCRIPTION

Pin Number	Pin Name	I/O	Pin Description
1	M0	I	Mode Selection (Input) - Determines the operational mode of the device.
16	M1	I	
2	MCLK	I	Master Clock (Input) - Clock source for the delta-sigma modulator and digital filters.
3	VL	I	Logic Power (Input) - Positive power for the digital input/output.
4	SDOUT	O	Serial Audio Data Output (Output) - Output for two's complement serial audio data.
5,14	GND	I	Ground (Input) - Ground reference. Must be connected to analog ground.
6	VD	I	Digital Power (Input) - Positive power supply for the digital section.
7	SCLK	I/O	Serial Clock (Input/Output) - Serial clock for the serial audio interface.
8	LRCK	I/O	Left Right Clock (Input/Output) - Determines which channel, Left or Right, is currently active on the serial audio data line.
9	/RST	I	Reset (Input) - The device enters a low power mode when low.
10	AINL	I	Analog Input (Input) - The full-scale analog input level is specified in the Analog Characteristics specification table.
12	AINR	I	
11	VQ	O	Quiescent Voltage (Output) - Filter connection for the internal quiescent reference voltage.
13	VA	I	Analog Power (Input) - Positive power supply for the analog section.
15	FILT+	O	Positive Voltage Reference (Output) - Positive reference voltage for the internal sampling circuits.

TYPICAL CONNECTION DIAGRAM

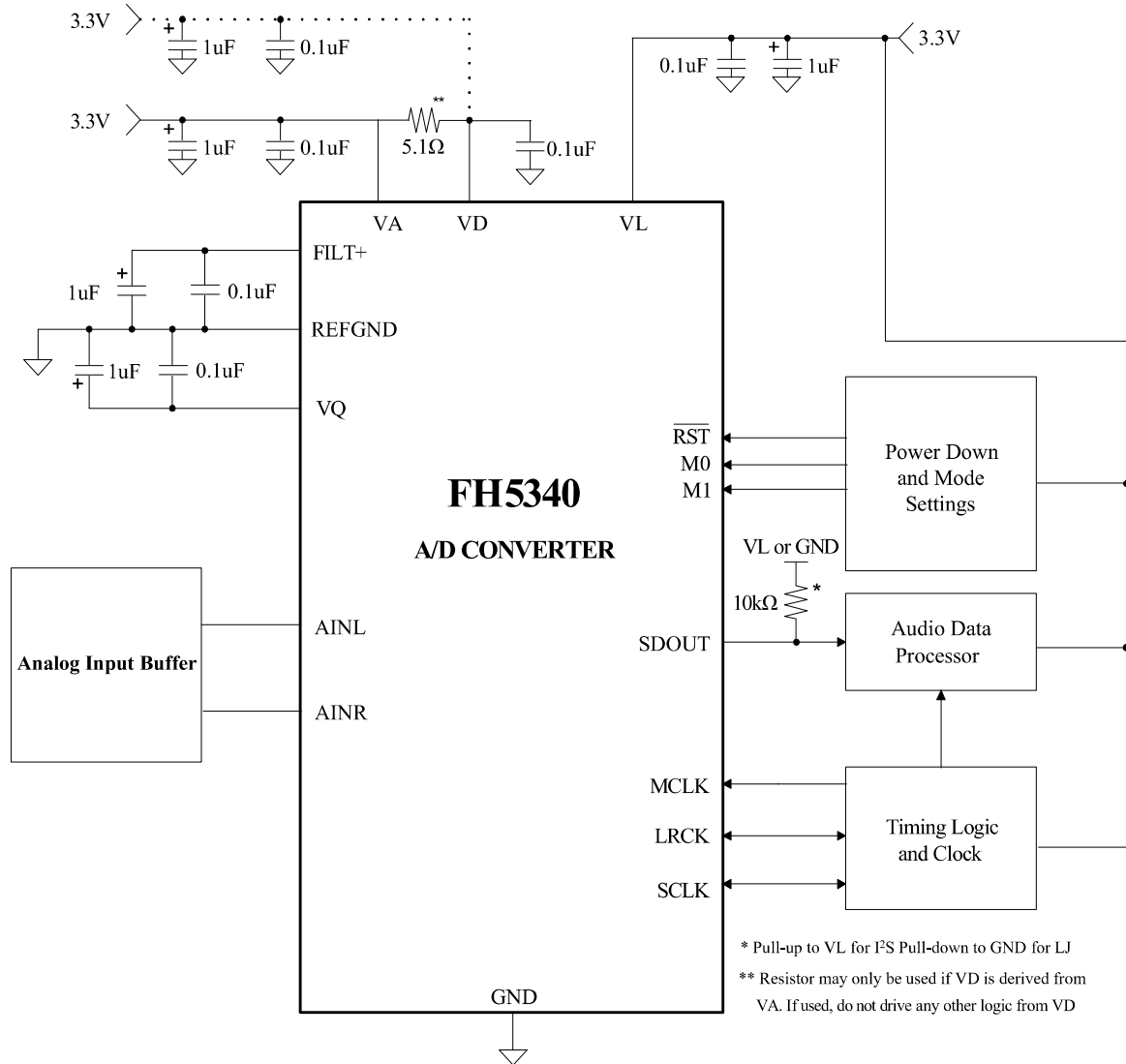


Figure 2. FH5340 Typical Connection Diagram

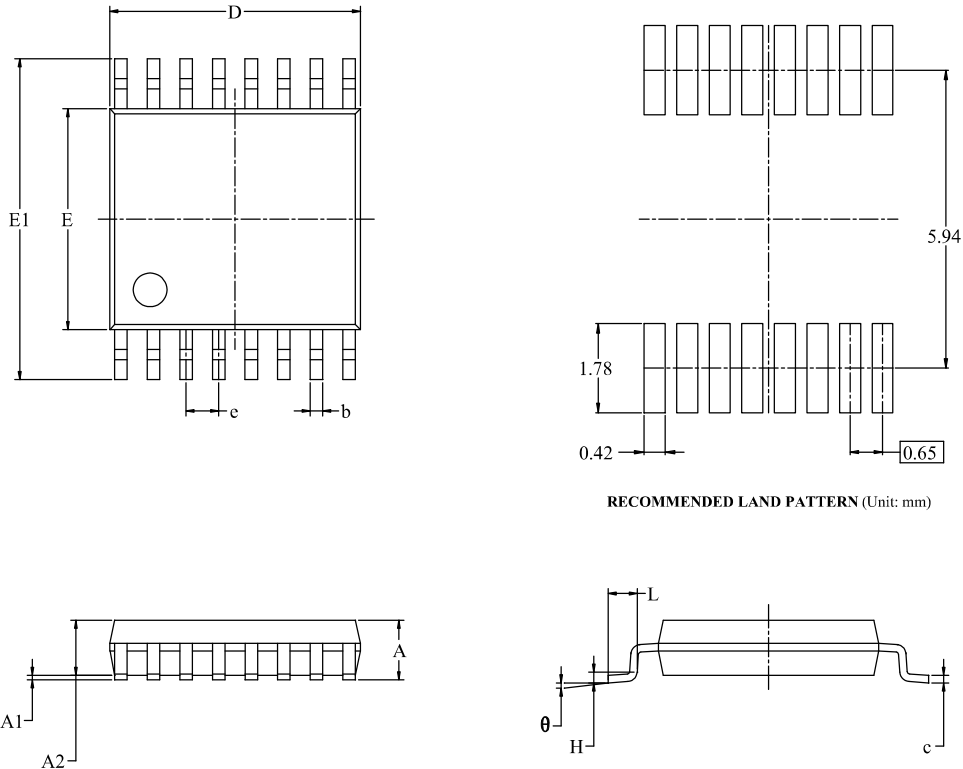
Handling of Unused Pin

The unused input pins should be processed appropriately as below.

Classification	Pin Name	Setting
Analog	AINL	This pin should be open.
	AINR	This pin should be open.

PACKAGE OUTLINE DIMENSIONS

Type: TSSOP-16L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A		1.200		0.047
A1	0.050	0.150	0.002	0.006
A2	0.800	1.050	0.031	0.041
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
D	4.860	5.100	0.191	0.201
E	4.300	4.500	0.169	0.177
E1	6.200	6.600	0.244	0.260
e	0.650 BSC		0.026 BSC	
L	0.500	0.700	0.02	0.028
H	0.25 TYP		0.01 TYP	
θ	1°	7°	1°	7°

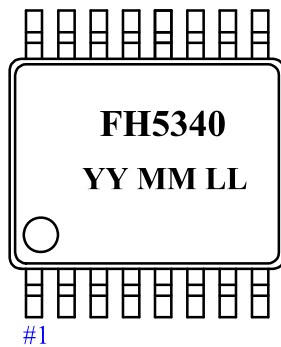
ORDERING INFORMATION

Part Number	A/D Core Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH5340TS16	3.0V ~ 3.6V	<ul style="list-style-type: none"> • 24-bit Audio ADC • Sample Rates Including 192KHz • -88dB THD+N • Dynamic Range: 96dB(typ.) 	-40°C to +85°C	TSSOP-16L	FH5340 YY MM LL	2500EA/Reel

Note:

- **FH5340** 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: TSSOP-16L



- 1) Pin #1 indication
- 2) Date Code: YY MM LL
LL: Lot#
YY MM: Date Code
- 3) Marketing Code: FH5340



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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Note:

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