

A Micropower, 2-channel, 125-kSPS, Serial-Output 12-bit SAR ADC

FEATURES

- ◆ Alternate Source for AD7887
- ◆ Single-supply Operation: +2.7V to +5.25V
- ◆ INL: ± 1 LSB - TSA7887B
 ± 2 LSBs - TSA7887A
- ◆ One or Two Single-ended Analog Inputs
- ◆ Internal Wide-bandwidth Track-and-Hold
- ◆ Internal +2.5-V Reference
- ◆ Flexible Power/Throughput-Rate Management
0.85mA at 125kSPS (Internal VREF ON)
0.7mA at 125kSPS (Internal VREF OFF)
- ◆ Shutdown-mode Supply Current: 1 μ A (max)
- ◆ SPI[®]/QSPI[™]/MICROWIRE[™]/DSP-Compatible Serial Interfaces¹
- ◆ Operating Temperature Range: -40°C to +125°C
- ◆ 8-pin SOIC and MSOP Packaging

APPLICATIONS

Instrumentation and Control Systems
High-Speed Modems
Battery-powered systems:
Personal Digital Assistants, Medical Instruments, Mobile Communications

DESCRIPTION

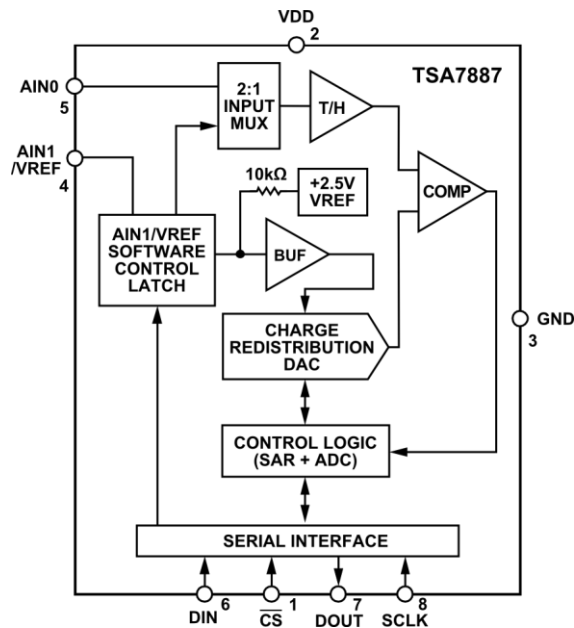
The TSA7887 – an alternate source for the AD7887 – is a self-contained, 2-channel, high-speed, micropower, 12-bit analog-to-digital converter (ADC) that operates from a single +2.7V to +5.25V power supply. The TSA7887 is capable of 125-kSPS throughput rate with an external 2MHz serial clock and draws 0.85mA supply current.

The wideband input track-and-hold acquires signals in 500ns and features a single-ended sampling topology. Output data coding is straight binary and the ADC is capable of converting full power signals of up to 2.5 MHz. The ADC also contains an integrated 2.5V reference or the V_{REF} pin can be overdriven by an external reference.

The TSA7887's provides one or two analog inputs each with an analog input range from 0 to V_{REF}. In two-channel operation, the analog input range is 0V to VDD. Efficient circuit design ensures low power consumption of 2mW (typical) for normal operation and 3 μ W in power-down operation.

The TSA7887 is fully specified from -40°C to +125°C and is available in 8-pin SOIC and MSOP packages.

FUNCTIONAL BLOCK DIAGRAM



¹ SPI and QSPI are trademarks of Motorola, Inc. MICROWIRE is a trademark of National Semiconductor Corporation.

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TSA7887 Product Brief



PACKAGE/ORDERING INFORMATION

<p style="text-align: center;">TOP VIEW</p> <p style="text-align: center;">8-pin SOIC R-8 Package</p>			
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSA7887ARZ	TS7887A	TUBE	97
TSA7887ARZ-REEL		Tape & Reel	2500
TSA7887BRZ	TS7887B	TUBE	97
TSA7887BRZ-REEL		Tape & Reel	2500
<p style="text-align: center;">TOP VIEW</p> <p style="text-align: center;">8-pin MSOP RM-8 Package</p>			
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSA7887ARMZ	TAAV	TUBE	50
TSA7887ARMZ-REEL		Tape & Reel	2500

Lead-free Program: Touchstone Semiconductor supplies only lead-free packaging.

Consult Touchstone Semiconductor for products specified with wider operating temperature ranges.

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