TS7003 Product Brief

A 300ksps, Single-supply, 12-Bit Serial-output ADC

FEATURES

♦ Pin-Compatible, Single-channel Higher-Speed Upgrade to MAX1286
♦ Single-Supply Operation: +2.7V to +3.6V
♦ DNL & INL: ±1LSB (max)
♦ 300ksps Sampling Rate
♦ Low Conversion-Mode Supply Current: 0.95mA @ 300ksps
♦ Low Supply Current in Shutdown: 0.2µA
♦ Internal Track-and-Hold
♦ Internal +2.5V Reference
♦ SPI/QSPI/MICROWIRE 3-Wire Serial-Interface
♦ 8-Pin, 3mm x 3mm TDFN-EP Package

APPLICATIONS

Process Control and Factory Automation
Data and Low-frequency Signal Acquisition
Portable Data Logging
Pen Digitizers & Tablet Computers
Medical Instrumentation
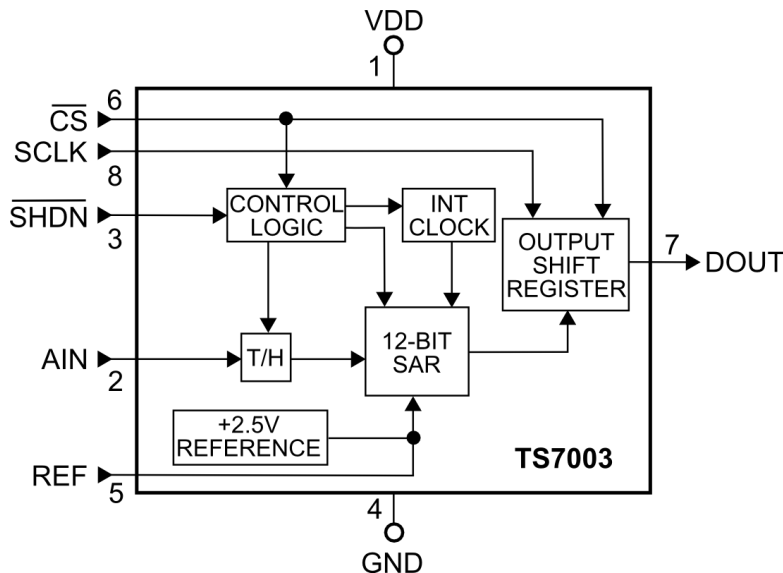Battery-powered Instruments

DESCRIPTION

The TS7003 – a single-supply, single-channel, 12-bit analog-to-digital converter (ADC) - is Touchstone Semiconductor's 1st successive-approximation ADC that combines a high-bandwidth track-and-hold (T/H), a high-speed serial digital interface, an internal +2.5V reference, and low conversion-mode power consumption. The TS7003 operates from a single +2.7V to+3.6V supply and draws less than 1mA at 300ksps.

Connecting directly to any SPI™/QSPI™/ MICROWIRE™ microcontrollers and other interface-compatible computing devices, the TS7003's 3-wire serial interface is easy to use and doesn't require separate, external logic. An external serial-interface clock controls the TS7003's conversion process and its output shift register operation.

In PCB-space-conscious, low-power remote-sensor and data-acquisition applications, the TS7003 is an excellent choice for its low-power, ease-of-use, and small-package-footprint attributes.

As a pin-compatible and higher-speed to the MAX1286, the TS7003 is fully specified over the -40°C to +85°C temperature range and is available in a low-profile, 8-pin 3x3mm TDFN package with an exposed back-side paddle.
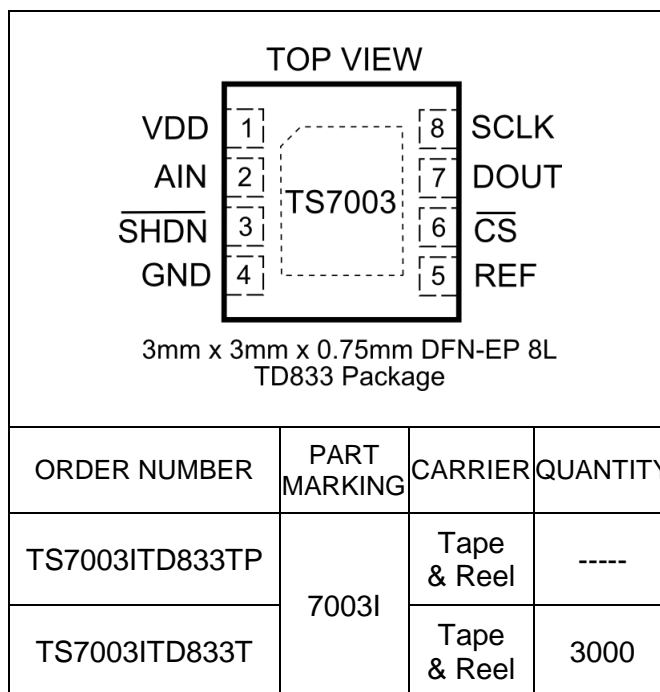
FUNCTIONAL BLOCK DIAGRAM

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PACKAGE/ORDERING INFORMATION

TOP VIEW

VDD 1	8 SCLK
AIN 2	7 DOUT
$\overline{\text{SHDN}}$ 3	6 $\overline{\text{CS}}$
GND 4	5 REF

TS7003

3mm x 3mm x 0.75mm DFN-EP 8L
TD833 Package

ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TS7003ITD833TP	7003I	Tape & Reel	-----
TS7003ITD833T		Tape & Reel	3000

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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TS7003PB r0p2b PRELIM
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