


## 5-Channel Single ADC Delta-Sigma 7.2ksps 24-bit Serial Automotive 32-Pin VQFN EP T/R

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| <b>Manufacturer:</b> | <a href="#">Texas Instruments, Inc</a>   |
| <b>Package/Case:</b> | VQFN32   |
| <b>Product Type:</b> | Data Conversion ICs  |
| <b>RoHS:</b>         | RoHS Compliant/Lead free  |
| <b>Lifecycle:</b>    | Active   |



Images are for reference only

[Inquiry](#)

### General Description

The ADS1235-Q1 is a precision, 7200-SPS, delta-sigma ( $\Delta\Sigma$ ) analog-to-digital converter (ADC) with an integrated programmable gain amplifier (PGA). This device also includes diagnostic features such as PGA overrange and reference monitors. The ADC provides high-accuracy, zero-drift conversion data for high-precision equipment, including weigh scales, strain gauges, and resistive pressure sensors.

The ADC has signal and reference multiplexers that support three differential signal inputs and two reference inputs. The ADC also includes a low-noise PGA that provides gains of 1, 64, and 128. The ADC also has a 24-bit  $\Delta\Sigma$  modulator and programmable digital filter.

The high-impedance inputs (1 G $\Omega$ ) of the PGA reduce measurement error that is caused by sensor loading.

The ADC supports ac-bridge excitation to remove the drift errors from the sensor wiring. The ADC provides the clock control signals for the ac-excitation operation.

The flexible digital filter is programmable for single-cycle settled conversions, and provides 50-Hz and 60-Hz line cycle rejection at the same time.

The ADS1235-Q1 is available in a 5-mm  $\times$  5-mm VQFN package, and is specified across the  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  temperature range.

## Key Features

AEC-Q100 qualified for automotive applications

Temperature grade 1: -40°C to +125°C, T

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24-bit, high-precision ADC:

120,000 noise-free counts

Gain drift: 0.5 ppm/°C

Three differential or five single-ended inputs

Two reference inputs

Wide input voltage range:  $\pm 7$  mV to  $\pm 5$  V

Data rate: 2.5 SPS to 7200 SPS

AC- or DC-bridge excitation option

Chop mode for zero-drift operation

Simultaneous 50-Hz and 60-Hz rejection mode

Single-cycle settling mode

Missing reference input monitor

Signal overrange monitor

Temperature sensor

Cyclic redundancy check (CRC)

5-V or  $\pm 2.5$ -V power supply

## Recommended For You

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### ADS8326IDGKT

Texas Instruments, Inc

MSOP8

### ADS7816U

Texas Instruments, Inc

SOP8

### ADS1110A0IDBVR

Texas Instruments, Inc

SOT23-6

### ADS1015BQDGSRQ1

Texas Instruments, Inc

VSSOP-10

### ADS7805UB

Texas Instruments, Inc

SOP28

### ADS774KU

Texas Instruments, Inc

SOP28

### ADS7846E

Texas Instruments, Inc

SSOP16

### ADS8344NB

Texas Instruments, Inc

SSOP20

### ADS1254E

Texas Instruments, Inc

SSOP20

**ADS7842E**

Texas Instruments, Inc  
SSOP28

**ADS1282IPW**

Texas Instruments, Inc  
TSSOP-28

**ADS7843E/2K5**

Texas Instruments, Inc  
SSOP16

**ADS1226IRGVT**

Texas Instruments, Inc  
QFN16

**ADS825E**

Texas Instruments, Inc  
SSOP28

**ADS7825U**

Texas Instruments, Inc  
SOP28