

AFE General Purpose 1 ADC 16bit 3.3V 80-Pin LQFP T/R

Manufacturer:	Texas Instruments, Inc	<input type="text" value="AFE4300PNR Image"/>
Package/Case:	LQFP80	Images are for reference only
Product Type:	Data Conversion ICs	<input type="button" value="Inquiry"/>
RoHS:	RoHS Compliant/Lead free 	
Lifecycle:	Active	

General Description

The AFE4300 is a low-cost analog front-end incorporating two separate signal chains: one chain for weight-scale (WS) measurement and the other for body composition measurement (BCM) analysis. A 16-bit, 860-SPS analog-to-digital converter (ADC) is multiplexed between both chains. The weight measurement chain includes an instrumentation amplifier (INA) with the gain set by an external resistor, followed by a 6-bit digital-to-analog converter (DAC) for offset correction, and a circuit to drive the external bridge/load cell with a fixed 1.7 V for ratiometric measurements.

The AFE4300 can also measure body composition by applying a sinusoidal current into the body. The sinusoidal current is generated with an internal pattern generator and a 6-bit, 1-MSPSDAC. A voltage-to-current converter applies this sinusoidal current into the body, between two terminals. The voltage created across these two terminals as a result of the impedance of the body is measured back with a differential amplifier, rectified, and the amplitude is extracted and measured by the 16-bit ADC.

The AFE4300 operates from 2 V to 3.6 V, is specified from 0°C to +70°C, and is available in a LQFP-80 package.

Key Features

Weight-scale front-end:

Supports up to four load cell inputs

On-chip load cell 1.7-V excitation voltage for ratiometric measurement

68-nVrms Input-Referred noise (0.1 Hz to 2 Hz)

Best-fit linearity: 0.01% of full-scale

Weight-scale measurement : 540 μ A

Body composition front-end:

Supports up to three tetra-polar complex impedance measurements

6-Bit, 1-MSPS sine-wave generation digital-to-analog converter (DAC)

247.5- μ A rms, \pm 20% Excitation source

0.1- Ω Measurement RMS noise in 2-Hz BW

Body composition measurement : 970 μ A

Analog-to-digital converter (ADC):

16 Bits, 860 SPS

Supply current: 110 μ A

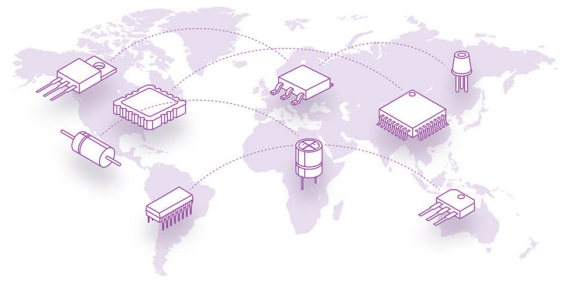
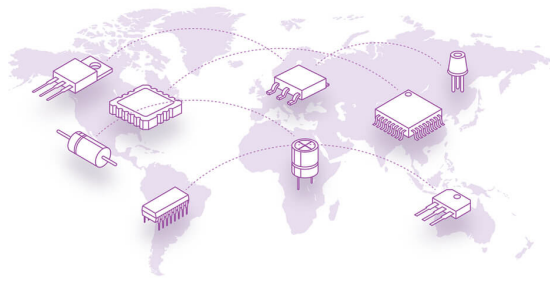
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Recommended For You

AFE5807ZCF

Texas Instruments, Inc

BGA

AFE1205E

Texas Instruments, Inc

XX

AFE1104E

Texas Instruments, Inc

SSOP

AFE2124E

Texas Instruments, Inc

SSOP48

AFE1103E

Texas Instruments, Inc

SSOP

AFE5818ZBV

Texas Instruments, Inc

BGA

AFE4403VZPT

Texas Instruments, Inc

DSBGA36

AFE4403VZPR

Texas Instruments, Inc

DSBGA36

AFE4404VZPR

Texas Instruments, Inc

DSBGA15

AFE4400RHAT

Texas Instruments, Inc

VQFN40

AFE4490RHAT

Texas Instruments, Inc

QFN

AFE4405VZR

Texas Instruments, Inc

DSBGA

AFE4404YZPT

Texas Instruments, Inc

DSBGA15

AFE5808AZCF

Texas Instruments, Inc

BGA

AFE5812ZCF

Texas Instruments, Inc

BGA135