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### ADS1299

(PREVIEW) Low-Noise, 8-Channel, 24-Bit Analog Front-End for Biopotential Measurements

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## Datasheet

Low-Noise, 8-Channel, 24-Bit Analog Front-End for Biopotential Measurements (PDF, 1289 KB) 02 Jul 2012

Description &

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ADS1298

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Featured Tools and Software

### Description

incorporates all commonly-required features for electroencephalogram (EEG) applications. With its high levels of integration and exceptional performance, the ADS1299 enables the creation of scalable medical.

The ADS1299 is a low-noise, multichannel, simultaneous-sampling, 24-bit, delta-sigma (ΔΣ) analog-to-digital converter (ADC) with a built-in programmable gain amplifier (PGA), internal reference, and an onboard oscillator. The ADS1299

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### Features

Diagrams (1)

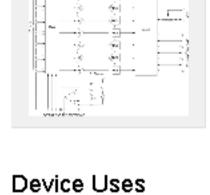
> Very Low Input-Referred Noise: 1.0 μV<sub>PP</sub> (70-Hz BW)

> Eight Low-Noise PGAs and Eight High-Resolution Simultaneous-Sampling ADCs

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ADS1191

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Functional Diagram

### > High-Precision, Simultaneous, Multichannel Signal Acquisition

SPI is a trademark of Motorola.

> Medical Instrumentation (EEG and ECG) Including:

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ADS1299

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- EEG, Bispectral index (BIS), Evoked audio potential (EAP), Sleep study monitor

- **Parametrics**

## Resolution (Bits)

# Input Channels	8	1	2	1	4	6	8
Input-referred Noise (Typ) (uVpp)	1	24	24	8	3	3	3
PGA Gain (Typ) (V/V)	1,2,4,6,8,12,24	1,2,3,4,6,8,12	1,2,3,4,6,8,12	1,2,3,4,6,8,12	1,2,3,4,6,8,12	1,2,3,4,6,8,12	1,2,3,4,6,8,12
Sample Rate (Max) (kSPS)	16	8	8	8	32	32	32
IAVDD Supply Current (Typ) (mA)					2.75	2.75	2.75
DVDD Supply Current (Typ) (mA)					0.5	0.5	0.5
Power/Channel (Typ) (mW)	5.125	0.335	0.335	0.35	0.75	0.88	0.75
Power Consumption (Typ) (mW)	41	0.335	0.67	0.35	3	5.3	6
NL (Typ) (ppm)					8	8	8
nterface	Serial SPI	Serial SPI	Serial SPI	Serial SPI	Serial SPI	Serial SPI	Serial SPI
Reference Mode	Int , Ext	Int , Ext	Int , Ext	Int , Ext	Int , Ext	Int , Ext	Int , Ext
Offset Error (Typ) (uV)					500	500	500
Offset error drift (Typ) (uV/C)					2	2	2
Gain Error (Typ) (%)					0.2	0.2	0.2
Digital Supply (Min) (V)	1.8	1.7	1.7	1.7	1.65	1.65	1.65
Digital Supply (Max) (V)	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Gain Drift (Typ) (ppm/degC)					5	5	5
SNR (Typ) (dB)	129.3				112	112	112
THD (Typ) (dB)					-98	-98	-98
Analog Voltage AV/DD (Min) (V)	4.75	2.7	2.7	2.7	2.7	2.7	2.7
Analog Voltage AV/DD (Max) (V)	5.25	5.25	5.25	5.25	5.25	5.25	5.25
Architecture	Delta-Sigma	Delta-Sigma	Delta-Sigma	Delta-Sigma	Delta-Sigma	Delta-Sigma	Delta-Sigma
Rating	Catalog	Catalog	Catalog	Catalog	Catalog	Catalog	Catalog
# Input Channels	8	1	2	1	4	6	8
	Sample & Buy	Sample & Buy	Sample & Buy	Sample & Buy	Sample & Buy	Sample & Buy	Sample & Buy

ADS1291

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ADS1192

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ADS1294

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Package QTY | ♦

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No Stock

TI 1k Lead Time

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Part# ▲	Name	<b>+</b>	Product F	amily \$	Comments				<b>\$</b>
ADS1191	Complete Low Power Analog Front End for B	_		FRONT END - nalog Front End	_	nnel, 16-bit ADC			

Top Side

Marking

View

Status Package|Pins

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ADS1192	Complete Low Power Integrated Analog Front End for ECG Applications	ANALOG FRONT END - Medical Analog Front End	Two-channel, 16-bit ADC
ADS1198	Low-Noise, 8 Channel, 16 Bit Analog Front End for ECG/EEG Measurements	ANALOG FRONT END - Medical Analog Front End	The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent. The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent.
ADS1291	Complete Low Power Integrated Analog Front End for ECG Applications	ANALOG FRONT END - Medical Analog Front End	Single-channel, 24-bit ADC
ADS1294	4-Channel, 24-Bit Analog-To-Digital Converter With Integrated ECG Front End	ANALOG FRONT END - Medical Analog Front End	Four-channel, 24-bit ADC
ADS1296	6-Channel, 24-Bit Analog-To-Digital Converter With Integrated ECG Front End	ANALOG FRONT END - Medical Analog Front End	Six-channel, 24-bit ADC
ADS1298	8-Channel, 24-Bit Analog-To-Digital Converter With Integrated ECG Front End	ANALOG FRONT END - Medical Analog Front End	The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent. The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent.
ADS1298	8-Channel, 24-Bit Analog-To-Digital Converter With Integrated ECG Front End	ANALOG FRONT END - Medical Analog Front End	The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent. The device has the SAME FUNCTIONALITY and PINOUT as the compared device but is NOT an exact equivalent.

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297

Date

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247,174

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On Demand

1,518

# Application Notes (8)

🔁 Low-Noise, 8-Channel, 24-Bit Analog Front-End for Biopotential Measurements

🔁 Improving Common-Mode Rejection Using the Right-Leg Drive Amplifier

Category

Eco Plan\*

IBIS Model | ZIP

Green (RoHS & no Sb/Br)

Green (RoHS & no Sb/Br)

Details "View" link in the table above for the latest availability information and additional product content details.

Footprints \$

View

Type Size (KB) Date

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### Title 🔁 A Glossary of Analog-to-Digital Specifications and Performance Characteristics (Rev. B)

Datasheet (1)

Title

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540 views

MSL Rating / Peak Reflow ◆

Level-3-260C-168 HR

Level-3-260C-168 HR

## Quality & Environmental Data

MADS1299CPAGR

ADS129x IBIS Model (Rev. F)

## MADS1299CPAG

Part#

Part#

ADS1299CPAG

Title

information.		
Symbols & Footprints		

16 Dec 2011

♦ Lead / Ball Finish ◆

\* The planned eco-friendly classification: Pb-Free (RoHS) or Pb-Free (RoHS Exempt) or Green (RoHS & no Sb/Br) - please click on the Product Content

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Training & Events
Name
Intro to Motor Drives and the Motor Signal Chain

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## This session will focus in on the analog drive section of the motor.

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Solutions for PLC (Programmable Logic Controller) I/O Modules This session will cover the PLC system and dive into I/O modules used to interface with sensors/actuators on the factory floor.	On-Line Training	On Demand
Bluetooth Low Energy and ANT: Very Low Power Wireless Connectivity Solutions The session will then cover on how to setup a quick BLE and ANT link.	On-Line Training	On Demand
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