New Product Announcement

AS2333

Precision zero-drift 1.8V, Micropower CMOS dual operational amplifier

The AS2333 is a dual channel operational amplifier using chopper stabilization to provide ultra-low input offset voltage (8μV) and near zero-drift over time and temperature.

It also provides reduced 1/f noise and input crossover-distortion – present in most rail-to-rail input op-amps.

This low quiescent current, high-precision amplifier offers low bias current inputs that have a common-mode range 100mV beyond the rails, and a rail-to-rail output that swings within 50mV of the rails.

Single or dual supplies as low as 1.8V (±0.9V) and up to 5V (±2.5V) can be used covering a wide number of battery topologies. These attributes of precision and micropower make the AS2333 suitable for the high amplification of very low-level signals from sensors in a wide variety of battery powered applications.

The AS2333 is available in SO-8 and MSOP-8 packages with operating temperature of – 40ºC to +125ºC.

The Diodes Advantage

- **Operating voltage from 1.8V to 5.5V**
  Supports typical battery voltage ranges - 2 & 3 NiMH cells as well as Li-rechargeable cells
- **High precision Low 8μV Offset Voltage with large 120dB open-loop gain**
  Maintains accuracy supporting large amplification of small signals
- **Near Zero-Offset Voltage Drift (0.2μV/ºC) over time and temperature**
  Higher accuracy readings with better repeatability
- **Low Quiescent Current of 12 μA per amplifier**
  Suited for use in battery / handheld applications.
- **Chopper Stabilized**
  Eliminates 1/f noise and Vos crossover distortion

Applications

- Battery-Powered Instruments
- Handheld Test Equipment
- Medical Instrumentation
- Laboratory Instrumentation
- Sensor Signal Conditioning
- Low Voltage Current Sensing

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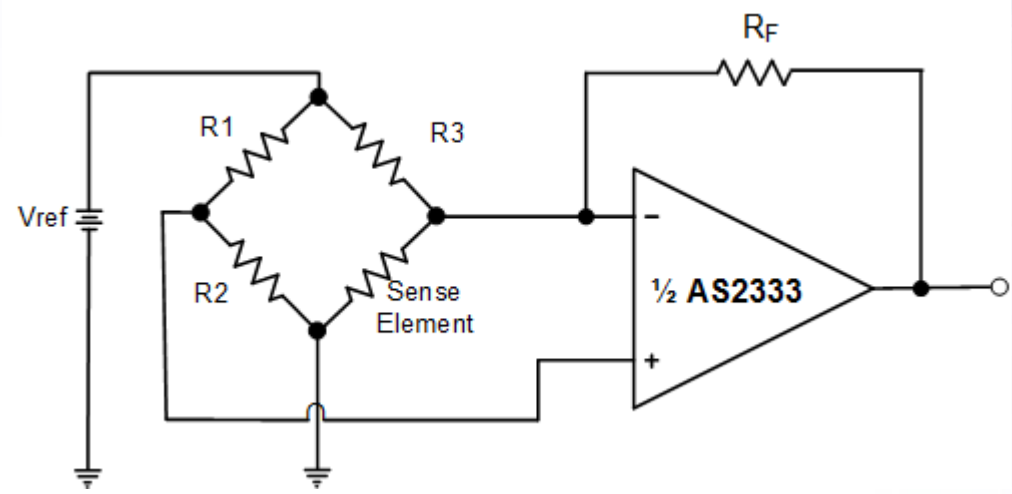
Conceptual Application



The Wheatstone Bridge circuit along with a precision amplifier is used to exercise a sense element such as a thermistor, strain gauge, or chemical sensor to measure temperature, weight, force, pressure or chemical concentration.

Low Supply Voltage Operational Amplifier Portfolio Overview

Part Number	Channels	Supply Voltage Range (V)	Supply Current @ 5V (/ch) (µA)	Input Offset Voltage (µV)	Input Bias Current (pA)	Max. Input Common-mode Voltage (V)	Rail-Rail	Ambient Temperature Range (ºC)	Packages
AZV831	1	1.6 to 5.5	900	500	1	V+ +0.2	Input/ Output	-40~85	SOT25
AZV832	2	1.6 to 5.5	900	500	1	V+ +0.2	Input/ Output	-40~85	MSOP-8, SO-8
AS2333	**2**	**1.8 to 5.5**	**12**	**8**	**70**	**V+ +0.1**	**Input/ Output**	**-40~125**	**MSOP-8, SO-8**
LMV321	1	2.5 to 5.5	110	1700	15	V+ - 1	Output	-40~125	SOT25, SOT353
LMV324	4	2.5 to 5.5	85	1700	15	V+ -1	Output	-40~125	SO-14, TSSOP-14
LMV358	2	2.5 to 5.5	95	1700	15	V+ -1	Output	-40~125	MSOP-8, SO-8
TLV271	1	2.7 to 16	550	500	1	V+ -1.35	Output	-40~125	SO-8, SOT25
TLV272	2	2.7 to 16	550	500	1	V+ -1.35	Output	-40~125	MSOP-8, SO-8

To find out more information:
Op Amp overview page https://www.diodes.com/products/analog/standard-linear-products/operational-amplifiers/
Datasheet https://www.diodes.com/assets/Datasheets/AS2333.pdf

Ordering information

Part Number	Packaging	Marking Identification	Tape and Reel Quantity	Tape Width	Reel size
AS2333S-13	SO-8	AS2333	2500	12mm	13"
AS2333M8-13	MSOP-8	AS2333	2500	12mm	13"

All variants are in packages using “Green” Molding Compound. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant