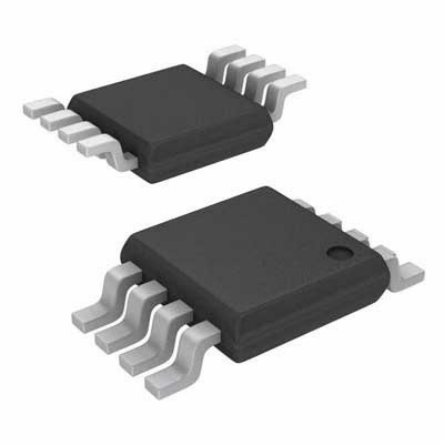
AD8138ARMZ

Data Sheet

Differential Amplifier, Low Distortion, 1 Amplifiers, 3.5 mV, 1.005 dB, 320 MHz, -40 °C, 85 °C

Manufacturers	Analog Devices, Inc
Package/Case	MSOP8
Product Type	Amplifier ICs
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for AD8138ARMZ or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

The AD8138 is a major advancement over op amps fordifferential signal processing. The AD8138 can be used as asingle-ended-to-differential amplifier or as a differential-to-differentialamplifier. The AD8138 is as easy to use as an opamp and greatly simplifies differential signal amplification anddriving. Manufactured on the proprietary ADI XFCB bipolarprocess, the AD8138 has a −3 dB bandwidth of 320 MHz anddelivers a differential signal with the lowest harmonic distortionavailable in a differential amplifier. The AD8138 has a uniqueinternal feedback feature that provides balanced output gainand phase matching, suppressing even order harmonics. Theinternal feedback circuit also minimizes any gain error thatwould be associated with the mismatches in the external gainsetting resistors.

The differential output of the AD8138 helps balance the inputto differential ADCs, maximizing the performance of the ADC. The AD8138 eliminates the need for a transformer with highperformance ADCs, preserving the low frequency and dc information.The common-mode level of the differential output isadjustable by a voltage on the VOCM pin, easily level-shifting theinput signals for driving single-supply ADCs. Fast overloadrecovery preserves sampling accuracy.

The AD8138 distortion performance makes it an ideal ADCdriver for communication systems, with distortion performancegood enough to drive state-of-the-art 10-bit to 16-bit convertersat high frequencies. The high bandwidth and IP3 of theAD8138 also make it appropriate for use as a gain block in IFand baseband signal chains. The AD8138 offset and dynamicperformance makes it well suited for a wide variety of signalprocessing and data acquisition applications.

The AD8138 is available in both SOIC and MSOP packages foroperation over −40°C to +85°C temperatures.

The AD8138-EP supports defense and aerospace applications (AQEC).

Features

Easy to use, single-ended-to-differential conversion

Adjustable output common-mode voltage

Externally adjustable gain

Low harmonic distortion -94 dBc SFDR at 5 MHz-85 dBc SFDR at 20 MHz

Fast settling to 0.01% of 16 ns

Slew rate 1150 V/µs

Fast overdrive recovery of 4 ns

Low input voltage noise of 5 nV/√Hz

See data sheet for additional features

AD8138-EP supports defense and aerospace applications (AQEC standard)

Download(pdf)

Extended temperature range: −55°C to +105°C

Controlled manufacturing baseline

One assembly/test site

One fabrication site

Enhanced product change notification

Qualification data available on request

V62/12665-01XE DSCC Drawing Number

Related Products

AD8418BRMZ-RL

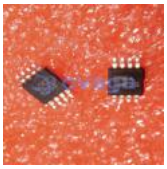
Analog Devices, Inc

MSOP-8

ADA4528-2ARMZ-R7

Analog Devices, Inc

MSOP-8



ADA4084-2ARMZ

Analog Devices, Inc

MSOP-8

AD8062ARMZ

Analog Devices, Inc

MSOP8

[AD8567ARUZ]

Analog Devices, Inc

TSSOP-14

[AD8628AUJZ]

Analog Devices, Inc

SOP23

[AD8022ARMZ]

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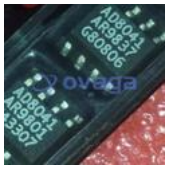
MSOP-8



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Analog Devices, Inc

SOP-8