

SP Amp Differential ADC Driver Single  $\pm 5.5V/11V$  8-Pin MSOP T/R

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	MSOP-8
Product Type	Amplifier ICs
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for AD8138ARMZ-REEL7 or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The AD8138 is a major advancement over op amps for differential signal processing. The AD8138 can be used as a single-ended-to-differential amplifier or as a differential-to-differential amplifier. The AD8138 is as easy to use as an opamp and greatly simplifies differential signal amplification and driving. Manufactured on the proprietary ADI XFCB bipolar process, the AD8138 has a  $-3$  dB bandwidth of 320 MHz and delivers a differential signal with the lowest harmonic distortion available in a differential amplifier. The AD8138 has a unique internal feedback feature that provides balanced output gain and phase matching, suppressing even order harmonics. The internal feedback circuit also minimizes any gain error that would be associated with the mismatches in the external gain setting resistors.

The differential output of the AD8138 helps balance the input to differential ADCs, maximizing the performance of the ADC. The AD8138 eliminates the need for a transformer with high performance ADCs, preserving the low frequency and dc information. The common-mode level of the differential output is adjustable by a voltage on the VO<sub>CM</sub> pin, easily level-shifting the input signals for driving single-supply ADCs. Fast overload recovery preserves sampling accuracy.

The AD8138 distortion performance makes it an ideal ADC driver for communication systems, with distortion performance good enough to drive state-of-the-art 10-bit to 16-bit converters at high frequencies. The high bandwidth and IP<sub>3</sub> of the AD8138 also make it appropriate for use as a gain block in IF and baseband signal chains. The AD8138 offset and dynamic performance makes it well suited for a wide variety of signal processing and data acquisition applications.

The AD8138 is available in both SOIC and MSOP packages for operation over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  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/ $\mu$ s

Fast overdrive recovery of 4 ns

Low input voltage noise of 5 nV/ $\sqrt{\text{Hz}}$

See data sheet for additional features

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

[Download\(pdf\)](#)

Extended temperature range:  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$

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

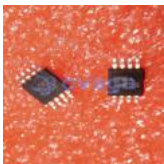


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