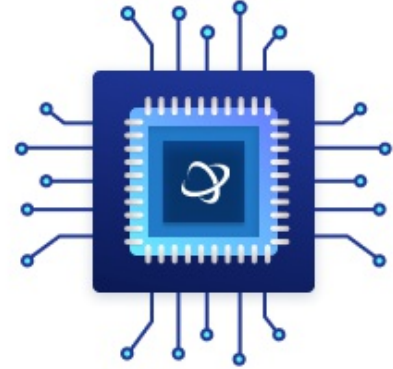


Advanced Differential Sensor Signal Conditioner with Multiple Output Options

Manufacturers	<a href="#">Renesas Technology Corp</a>
Package/Case	
Product Type	Integrated Circuits (ICs)
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ZSC31050FAG1-R or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

RFQ

## General Description

The ZSC31050 is a CMOS integrated circuit for amplification and sensor-specific correction of bridge sensor signals. The device provides digital compensation of sensor offset, sensitivity, temperature drift and non-linearity by a 16-bit RISC microcontroller running a correction algorithm. The ZSC31050 accommodates virtually any resistive bridge sensor (e.g., piezo-resistive and steel-membrane-based pressure sensors). In addition, the device can interface to a separate temperature sensor. The bi-directional digital interfaces (I2C, SPI, ZACwire™) can be used for a simple PC-controlled calibration procedure, encompassing writing and programming a set of calibration coefficients into an on-chip EEPROM. The ZSC31050 has been designed for industrial, medical and consumer applications and is specifically suited for most pressure sensors. It can also be used with force, torque, acceleration, angle, position and revolution sensors.

## Features

Digital compensation of sensor offset, sensitivity, temperature drift and non-linearity

Accommodates nearly all bridge sensors via PGA and programmable ADC

Capable of conditioning bridge sensor signals ranging from 1 to 275mV/V

Sensor connections check and aging detection

Temperature compensation via internal diode, external diode or bridge sensor element

Output options: voltage (0 to 5V), current (4 to 20mA), PWM, I2C , SPI, ZACwire™ (one-wire interface), alarm

Adjustable ADC resolution (up to 15-bit) versus sampling rate (up to 3.9kHz)

Selectable bridge excitation: ratiometric voltage, constant voltage or constant current

Input channel for separate temperature sensor

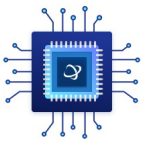
Operation temperature range, depending on product version, up to -40°C to +150°C

AEC-Q100 qualification (temperature grade 0)

Supply voltage: +2.7V to +5.5V, with external JFET: 5 to 40 V

Available in SSOP16 or as die

## Related Products



[ZSC31050FIG1-R](#)

Renesas Technology Corp



[X9313ZSZ-3T1](#)

Renesas Technology Corp  
8-SOIC



[X9313ZSZ-3](#)

Renesas Technology Corp  
SOP-8



[X9313ZSIZT1](#)

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SOP8



[X9313ZSIZ-3T1](#)

Renesas Technology Corp  
8-SOIC



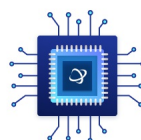
[X9313ZSIZ-3](#)

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PQFN-24



[ZSSC3218BI2B](#)

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