

Op Amp Single Zero Drift Amplifier 5.5V Automotive 8-Pin SOIC T/R

Manufacturer: [Texas Instruments, Inc](#)

INA240A2QDRQ1 Image

Package/Case: SOIC-8

Images are for reference only

Product Type: Amplifier ICs

[Inquiry](#)

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The INA240 -Q1 device is an automotive-qualified, voltage-output, current-sense amplifier with enhanced PWM rejection that can sense drops across shunt resistors over a wide common-mode voltage range from -4 V to 80 V , independent of the supply voltage. The negative common-mode voltage allows the device to operate below ground, accommodating the flyback period of typical solenoid applications. Enhanced PWM rejection provides high levels of suppression for large common-mode transients ($\Delta V/\Delta t$) in systems that use pulse width modulation (PWM) signals (such as motor drives and solenoid control systems). This feature allows for accurate current measurements without large transients and associated recovery ripple on the output voltage.

This device operates from a single 2.7-V to 5.5-V power supply, drawing a maximum of 2.4 mA of supply current. Four fixed gains are available: 20 V/V, 50 V/V, 100 V/V, and 200 V/V. The low offset of the zero-drift architecture enables current sensing with maximum drops across the shunt as low as 10-mV full-scale. Grade 1 versions are specified over the extended operating temperature range (-40°C to $+125^{\circ}\text{C}$) and are offered in an 8-pin TSSOP and 8-pin SOIC packages. Grade 0 versions are specified over the extended operating temperature range (-40°C to $+150^{\circ}\text{C}$) and are offered in an 8-pin SOIC package.

Key Features

AEC-Q100 Qualified for Automotive Applications

Temperature Grade 1: -40°C to $+125^{\circ}\text{C}$ Ambient Operating Temperature Range

Temperature Grade 0: -40°C to $+150^{\circ}\text{C}$ Ambient Operating Temperature Range

HBM ESD Classification Level H2

CDM ESD Classification Level C5

Functional Safety-Capable

Documentation available to aid functional safety system design

Enhanced PWM Rejection

Excellent CMRR:

132-dB DC CMRR

93-dB AC CMRR at 50 kHz

Wide Common-Mode Range: -4 V to 80 V

Accuracy:

Gain Error: 0.20% (Maximum) With 2.5 ppm/ $^{\circ}\text{C}$ (Maximum Drift)

Offset Voltage: $\pm 25\text{ }\mu\text{V}$ (Maximum) With 250 nV/ $^{\circ}\text{C}$ (Maximum Drift)

Available Gains:

INA240A1-Q1: 20 V/V

INA240A2-Q1: 50 V/V

INA240A3-Q1: 100 V/V

INA240A4-Q1: 200 V/V



Recommended For You

INA823DT

Texas Instruments, Inc
SOP8

INA333AIDRGR

Texas Instruments, Inc
SON-8

INA101AM

Texas Instruments, Inc
CAN10

INA141UA

Texas Instruments, Inc
SOP8

INA111AP

Texas Instruments, Inc
DIP8

INA101AG

Texas Instruments, Inc
DIP

INA116UA

Texas Instruments, Inc
SOP16

INA333AIDRGT

Texas Instruments, Inc
SON8

INA101SM

Texas Instruments, Inc
CAN10

INA129PA

Texas Instruments, Inc
DIP8

INA101CM

Texas Instruments, Inc
CAN10

INA141PA

Texas Instruments, Inc
DIP

TLV2254IN

Texas Instruments, Inc
DIP-14

TLV2464IN

Texas Instruments, Inc
DIP14

INA2126UA

Texas Instruments, Inc
SOP16