Key Features

- Factory-programmed segmented linear temperature compensation (TC) delivers ultralow thermal drift
  - Sensitivity error ±1% (from 25°C to 150°C)
  - Offset error ±5 mV
- Onboard supply regulator with reverse-battery protection ensures high immunity to electrical overstress (EOS)
- Very fast response time: 2 µs
- High operating bandwidth: DC to 240 kHz
- Compliant with AEC-Q100 Grade 0 qualified for automotive applications
- Customer-programmable, high-resolution offset and sensitivity trim
- Selectable sensitivity range: 0.5 mV/G to 11.5 mV/G
- Undervoltage detection (UVD)
- Low-voltage programming capability, RJM2311 only
- Open-GND pin detection (wire-break diagnosis)
- Wide operating temperature range: –40 °C to 150 °C

Applications

- Automotive Electronics and Electric Drive Systems
- Renewable Energy Systems
- Testing and Measurement Equipment
- Industrial Automation and Motor Control
- Circuit Protection and Monitoring
- Consumer and Home Appliances

Description

The RJM2310/1 features undervoltage detection (UVD).The RJM2311 offers all the features of the RJM2310 with the addition of low-voltage programming that eliminates the need for voltages greater than VCC during user programming. The RJM2311 is backward-compatible with the RJM2310, making it a drop-in replacement.

The RJM2310/1 integrated circuit combines Hall-element technology with a BiCMOS process in a monolithic design, delivering a fully integrated linear current-sensing solution. The device is highly sensitive to magnetic flux density perpendicular to the package surface and provides an analog voltage output proportional to the applied magnetic field. The RJM2310/1 is specifically designed to operate with a ferromagnetic core, enabling high-accuracy, non-contact current sensing.

Factory programming of gain and offset over a wide temperature range from 25°C to 150°C ensures typical sensitivity error within ±1% and offset error within ±5 mV, providing excellent measurement accuracy in real-world applications. Additionally, the device supports post-manufacture programming of absolute gain and offset values, offering further flexibility for system calibration and meeting stringent requirements for high-precision current measurement.

Device Information

Part Number	Factory-Programmed Sensitivity (mV/G))	Programmable Sens Range (mV/G)	*Programming method*	Package
RJM2310-001-QTOR	1	0.5 to 1.2	High-voltage	TO-94
RJM2310-2P5-QTOR	2.5	1.2 to 2.5	High-voltage	
RJM2310-005-QTOR	5	2.5 to 5.5	High-voltage	
RJM2310-010-QTOR	10	5.5 to 11.5	High-voltage	
RJM2311-001-QTOR	1	0.5 to 1.2	Low-voltage	
RJM2311-2P5-QTOR	2.5	1.2 to 2.5	Low-voltage	
RJM2311-005-QTOR	5	2.5 to 5.5	Low-voltage	
RJM2311-010-QTOR	10	5.5 to 11.5	Low-voltage	

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