

A 1 μ A, 200 μ V_{OS} Bidirectional Precision Current-Sense Amplifier

FEATURES

- ◆ Ultra-Low Supply Current: 1 μ A
- ◆ Wide Input Common Mode Range: +2V to +25V
- ◆ Low Input Offset Voltage: 200 μ V (max)
- ◆ Low Gain Error: 0.6% (max)
- ◆ Voltage Output
- ◆ Four Gain Options Available:
 - TS1103-25: Gain = 25V/V
 - TS1103-50: Gain = 50V/V
 - TS1103-100: Gain = 100V/V
 - TS1103-200: Gain = 200V/V
- ◆ 6-Lead SOT23 Packaging

APPLICATIONS

Notebook Computers
 Current-Shunt Measurement
 Power Management Systems
 Battery Monitoring
 Motor Control
 Load Protection
 Smart Battery Packs/Chargers

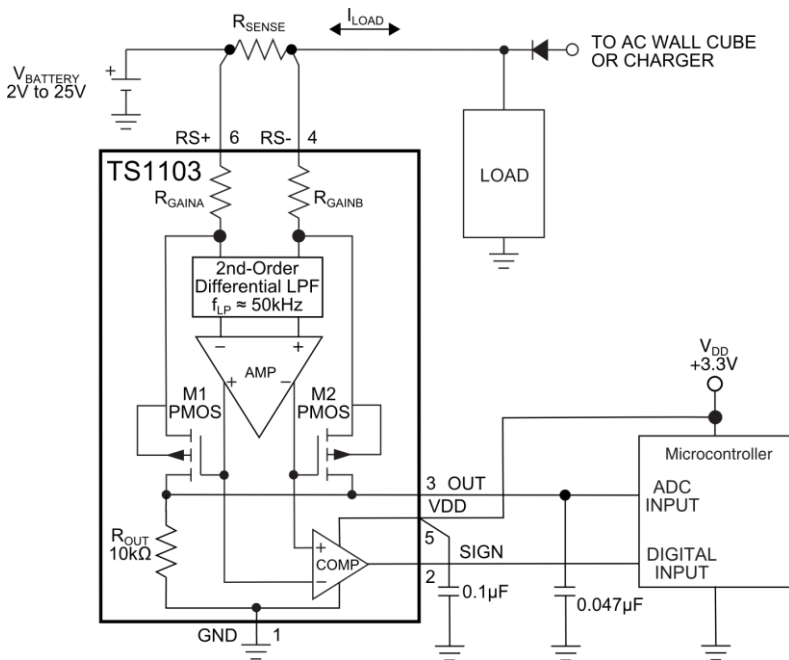
DESCRIPTION

The TS1103 is the latest addition to the TS1103 family of bi-directional current-sense amplifiers. Consuming a very low 1 μ A supply current, the TS1103 high-side current-sense amplifiers combine a 200- μ V (max) V_{OS} and a 0.6% (max) gain error for cost-sensitive applications. For all high-side bidirectional current-sensing applications, the TS1103s are self-powered and feature a wide input common-mode voltage range from 2V to 25V. A SIGN comparator digital output is also provided that indicates the direction of current flow depending on the external connections to the TS1103's RS+ and RS- input terminals.

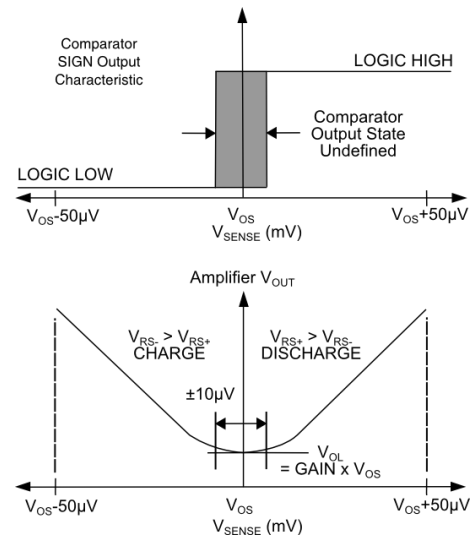
The SOT23 package makes the TS1103 an ideal choice for pcb-area-critical, supply-current-sensitive, high-accuracy current-sense applications in all battery-powered and portable instruments.

All TS1103s are specified for operation over the -40 $^{\circ}$ C to +105 $^{\circ}$ C extended temperature range.

TYPICAL APPLICATION CIRCUIT



SIGN Comparator's Symmetric I_{LOAD} Crossover



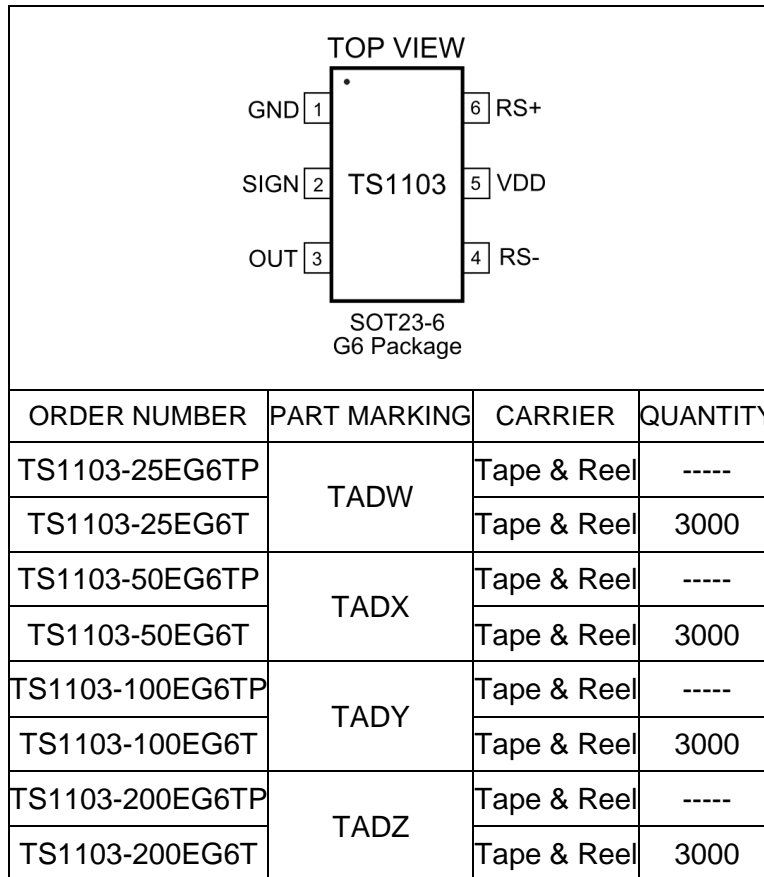
PART	GAIN OPTION
TS1103-25	25 V/V
TS1103-50	50 V/V
TS1103-100	100 V/V
TS1103-200	200 V/V

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TS1103 Product Brief



PACKAGE/ORDERING INFORMATION



Lead-free Program: Touchstone Semiconductor supplies only lead-free packaging.

Consult Touchstone Semiconductor for products specified with wider operating temperature ranges.

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