RAA788000

Rogowski Coil Based Power-Line Current Sensor with Amplifier

The RAA788000 is a low-power, power-line current sensor for contactless AC current measurements in the range of 2A to 5000A. The device consists of an on-chip Rogowski coil, a buffer amplifier, and a signal amplifier.

From an alternating power-line current, the magnetic flux flows through the on-chip coil, generating an electromotive force (EMF) that is amplified and filtered by a signal amplifier.

The amplifier output is typically fed into an analog-to-digital converter with a subsequent signal processor that calculates the current magnitude.

The RAA788000 operates from a single 2.7V to 3.6V supply. The device is available in a small 16 Ld TSSOP package and has an operation specified for the temperature range from -40°C to +105°C.

The RAA788000 is available in a 16 Ld thin shrink small outline package (TSSOP).

Features

- On-chip coil sensor
- Low noise density: E_n = 50nV/√Hz at 10Hz
- Low supply voltage: V_S = 2.7V to 3.6V
- Temperature range: -40°C to +105°C
- Small 16 Ld TSSOP package

Applications

- Power-line current measurements
- Watt meters

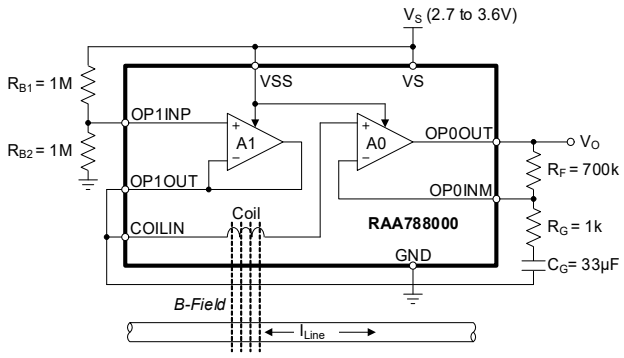

Figure 1. Typical Single-Current Sensor Application

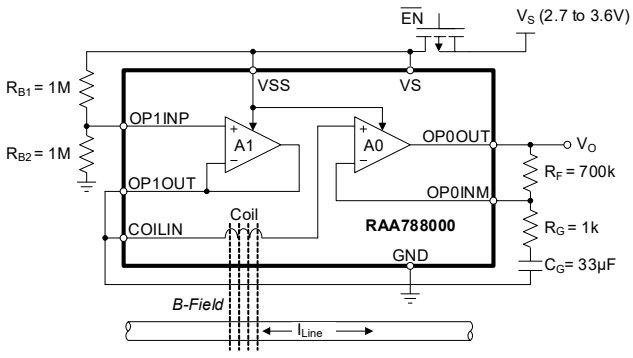

Figure 2. Typical Single-Current Sensor Application with Enable Function

Ordering Information

Part Number[1][2]	Part Marking	Package Description (RoHS Compliant)	Pkg. Dwg #	Carrier Type[3]	Temp. Range
RAA788000GSP#HA0	788000	16 Ld TSSOP	M16.173	Reel, 2.5k	-40 to +105°C
RTKA788000DE0000BU	Opposite Sensor Topology Evaluation Board				
RTKA788000DE0010BU	Stacked Sensor Topology Evaluation Board				

1. These Pb-free plastic packaged products employ special Pb-free material sets, molding compounds/die attach materials, and 100% matte tin plate plus anneal (e3 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations). Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J-STD-020.
2. For the Moisture Sensitivity Level (MSL), see the RAA788000 product page. For more information about MSL, see TB363.
3. See TB347 for details about reel specifications.

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