SILICON LABS

Alcom electronics

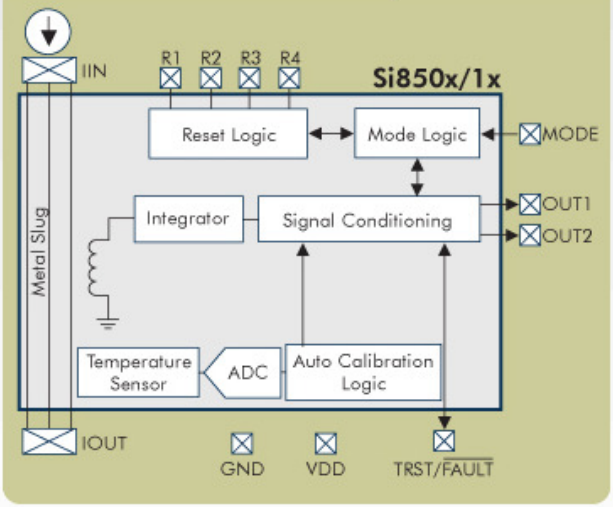
SEMICONDUCTORS | M2M & WIRELESS MODULES | TFT & EMBEDDED COMPUTING | DISPLAYS & OPTO | PASSIVES & ELECTROMECHANICAL | POWER CONVERSION

AC Current Sensors

Si850x/1x

The Si850x/1x products are unidirectional ac current sensors that operate over the frequency range of 50 kHz to 1.2 MHz. They are available in full-scale ranges of 5, 10 and 20 A.

Block Diagram



Features

- Very low loss (1 mΩ typ series resistance)
- Accurate to ±5% of measurement over voltage and temperature
- "Ping-Pong" output version allows one Si85xx to replace two current transformers plus external discretes in full-bridge applications
- 1 kV and 5 kV isolation options
- Large 2 V full-scale, low noise output signal
- High-or low-side sensing
- Available in a small 4x4x1 mm package
- Optional FAULT output safeguards system operation
- Most cost effective compared to Hall Effect devices and CTs

Applications

- Power supplies
- Motor controls
- Lighting equipment
- Industrial equipment

Technologies

- Proprietary, ultra low-loss inductive sensing technology for high measurement accuracy and low-noise output signal. No external components except for VDD bypass cap.

Alcom electronics
www.alcom.eu

Alcom Belgium - Singel 3 - 2550 Kontich
Tel.: ++32 (0)3 458.30.33 - Fax: ++32 (0)3 458.31.26 - info@alcom.be

Alcom Netherlands - Rivium 1e straat 52 - 2909 LE Capelle a/d IJssel
Tel.: ++31 (0)10 288.25.00 - Fax: ++31 (0)10 288.25.25 - info@alcom.nl

SILICON LABS

Alcom electronics

SEMICONDUCTORS | M2M & WIRELESS MODULES | TFT & EMBEDDED COMPUTING | DISPLAYS & OPTO | PASSIVES & ELECTROMECHANICAL | POWER CONVERSION

Product Matrix

Part Number	Full Scale Current (A)	Full Scale Error(% of Reading)	Output Mode	Pin 7 Function	Package
Si8501	5	±5	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8502	10	±5	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8503	20	±5	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8504	5	±20	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8505	10	±20	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8506	20	±20	Single	Integrator Reset Time Programming Input	12-pin QFN
Si8511	5	±5	Ping-Pong	Integrator Reset Time Programming Input	12-pin QFN
Si8512	10	±5	Ping-Pong	Integrator Reset Time Programming Input	12-pin QFN
Si8513	20	±5	Ping-Pong	Integrator Reset Time Programming Input	12-pin QFN
Si8514	5	±20	Ping-Pong	Integrator Reset Time Programming Input	12-pin QFN
Si8515	10	±20	Ping-Pong	Integrator Reset Time Programming Input	12-pin QFN
Si8516	20	±20	Ping-Pong with FAULT output	Integrator Reset Time Programming Input	12-pin QFN
Si8517	5	±5	Ping-Pong with FAULT output	Fault Output	12-pin QFN
Si8518	10	±5	Ping-Pong with FAULT output	Fault Output	12-pin QFN
Si8519	20	±5	Ping-Pong with FAULT output	Fault Output	12-pin QFN

Si850x/1x products are ideal upgrades for older current-sensing technologies offering size, performance and cost advantages over current transformers, Hall effect devices, DCR circuits and other approaches. With its 4x4 mm footprint and 1 mm height, the Si85xx is among the smallest current sensors available.

The Si850x/1x products are extremely low loss, adding less than 1.3 mΩ of series resistance and less than 2 nH series inductance in the sensing path at 25 °C. Current-sensing terminals are isolated from the other package pins to a maximum voltage of 1,000 VDC. The Si850x/1x AC current sensor family of products mimics the functionality of a traditional current transformer (CT) circuit with burden resistor, diode and output filter but offers enhanced performance and added capabilities. These devices use inductive current sensing and onboard signal conditioning electronics to generate a 2 V full-scale output signal proportional to the ac current flowing from the IIN to the IOUT terminals.