

Overview

The SA1002 (APM) is a full-bridge or dual half-bridge driver IC dedicated to controlling 4 N-channel MOSFETs, typically forming the DC/DC converter stage in industrial/telecom power supplies, battery inverters and chargers, and PV micro-inverters. The SA1002 is rated for 80 V operation.

It incorporates integrated hardware for voltage sensing, a 2 W flyback controller (for system self-power), 2 pairs of high-side and low-side MOSFET drivers. It also included critical protection features like: programmable UVLO, temp sensor, and cross-conduction protection functions for each driver pair. The device is easily programmed via industry-standard I2C interface.

SA1002 Key Features

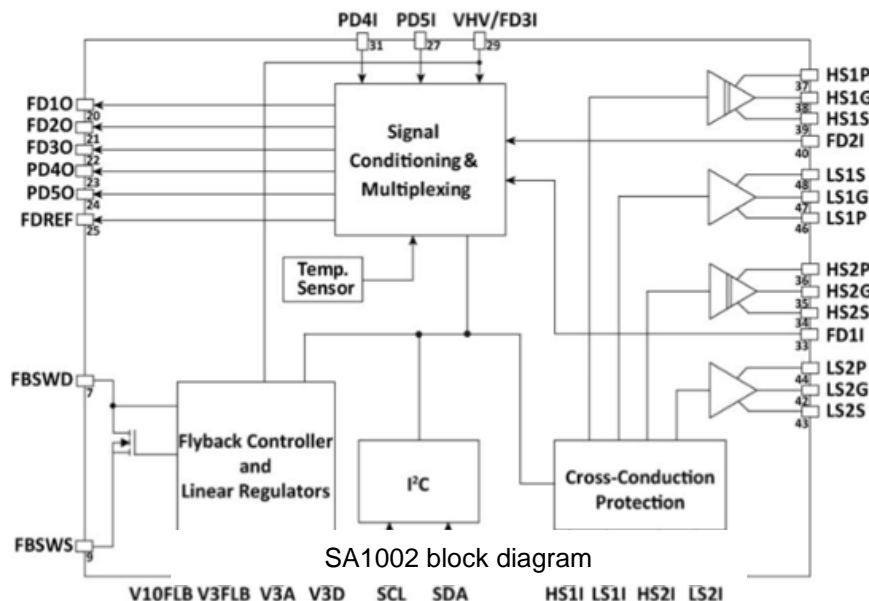
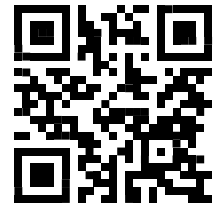
- Dual 12 V / 2.5 A low-side drivers with programmable under-voltage lock out (UVLO)
- Dual 12 V / 0.5 A high-side drivers with programmable UVLO
- Integrated MOSFET driver cross-conduction protection (driver interlock)
- Two precision voltage dividers (+/- 0.5%) with 80 V maximum input voltage and programmable division ratios (1/64, 1/32, 1/16, 1/8)

- Three fast voltage dividers (20 MHz) with 80 V maximum input voltage and programmable division ratios (1/64, 1/32, 1/16, 1/8)
- Pseudo-differential analog interface for divider outputs or ground-references, or direct or buffered divider output options
- Flyback controller with 0.5 Ω / 90 V switch and soft-switching controller
- 5 V minimum start-up voltage for 300 mW load
- Two 3 V / 25 mA low drop-out linear voltage regulators powered from internal flyback control.
- 2 mA / 2.8 V linear regulator with up to 80 V input
- Temperature sensor
- I2C interface (slave)
- TQFP48 exposed-pad package
- Junction temperature -40 to 125 $^{\circ}\text{C}$

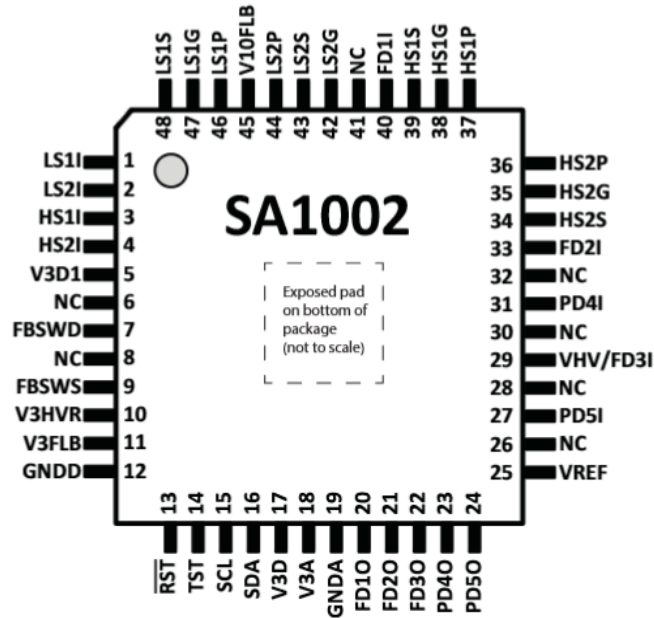
Applications

- Battery and fuel cell inverters (bi-directional)
- Dual phase DC/DC power supply
- DC-DC power optimizers
- Micro-inverters

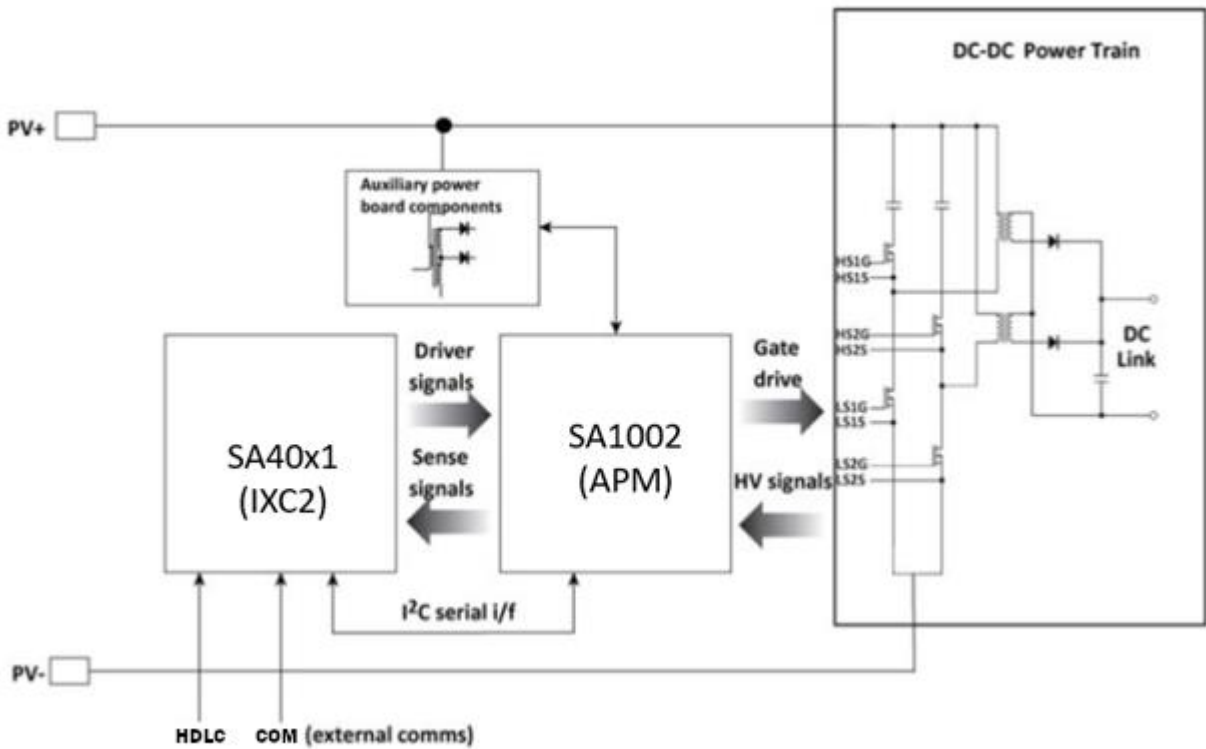
For further information please contact:
www.solantro.com



SA1002 (APM) 80 V Full-bridge / Dual Half-bridge Protected Driver



SA1002 pin-out (80-pin LQFP)



Micro-inverter DC-stage block diagram

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