The CS5463 enables digital power-meter manufacturers to provide highly accurate, cost-effective solutions for advanced power measurements. This new IC is an integrated power-measurement device that combines two Delta-Sigma A/D converters, high-speed power calculation functions, and a serial interface on a single chip. Additional features include AC and DC calibration, extended phase compensation, and three configurable energy output pins. Designed for residential single-phase or industrial three-phase power-meter applications, the IC accurately measures instantaneous current and voltage while calculating instantaneous power, real power, apparent power, reactive power, fundamental power, harmonic power, power factor, and line frequency.

The CS5463 is easy to design in as a pin-compatible upgrade to Cirrus Logic’s popular CS5460A and CS5461A. It retains all the functionality of its predecessors, while also providing additional calculations and functionality. For communication with a microcontroller, the IC features a bi-directional serial interface, which is initialized and fully functional upon reset. The CS5463 can interface to a low-cost shunt resistor or transformer for current measurement and to a resistive divider or potential transformer for voltage measurement. The CS5463 delivers accurate power usage measurements and is ideal for electronic power-meter applications.

CS5463 FEATURES
- Energy data linearity: ±0.1% of reading over 1000:1 dynamic range
- On-chip Functions: Instantaneous Voltage, Current and Power, \( I_{\text{RMS}} \) and \( V_{\text{RMS}} \), Average Real/Apparent/Reactive Power, Fundamental Power, Harmonic Power, Energy-to-pulse Conversion, Power Factor, Line Frequency
- Meets accuracy spec for IEC, ANSI, JIS
- Low power consumption
- Adjustable input range on current channel
- GND-referenced signals with single supply
- On-chip temperature sensor
- On-chip 2.5 V reference (typ 25 ppm/°C)
- AC/DC system calibrations
- Phase compensation
- Simple 3-wire digital serial interface
- Power supply monitor
- Programmable energy-to-pulse output function
- Configurable pulse outputs for Real/Apparent/Reactive Power
- Power supply configurations: \( VA^+ = +5 \text{ V}; AGND = 0 \text{ V}; VD^+ = +3.3 \text{ V to } +5 \text{ V} \)
- Package: 24-pin SSOP

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