

Four Channel DC Power/ Energy Monitor With Accumulator

Description

The CAD27334 are four-channel power and energy monitoring devices. A high-voltage multiplexer sequentially connects the inputs to a bus voltage monitor and current sense amplifier that feed high-resolution ADCs. Digital circuitry performs power calculations and energy accumulation.

This enables energy monitoring with integration periods from 1 ms up to 36 hours or longer. Bus voltage, sense resistor voltage and accumulated proportional power are stored in registers for retrieval by the system master or Embedded Controller.

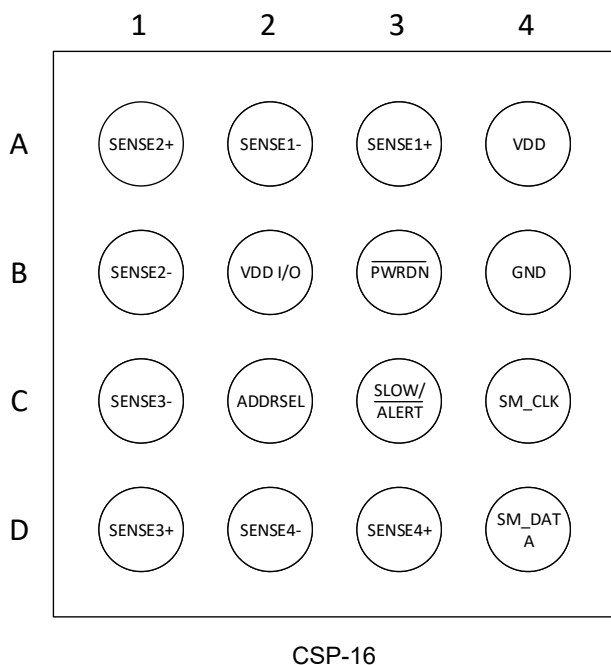
The sampling rate and energy integration period can be controlled over SMBus or I²C. Active channel selection, one-shot measurements and other controls are also configurable by SMBus or I²C.

The CAD27334 device family uses real time calibration to minimize offset and gain errors. No input filters are required for this device.

Features

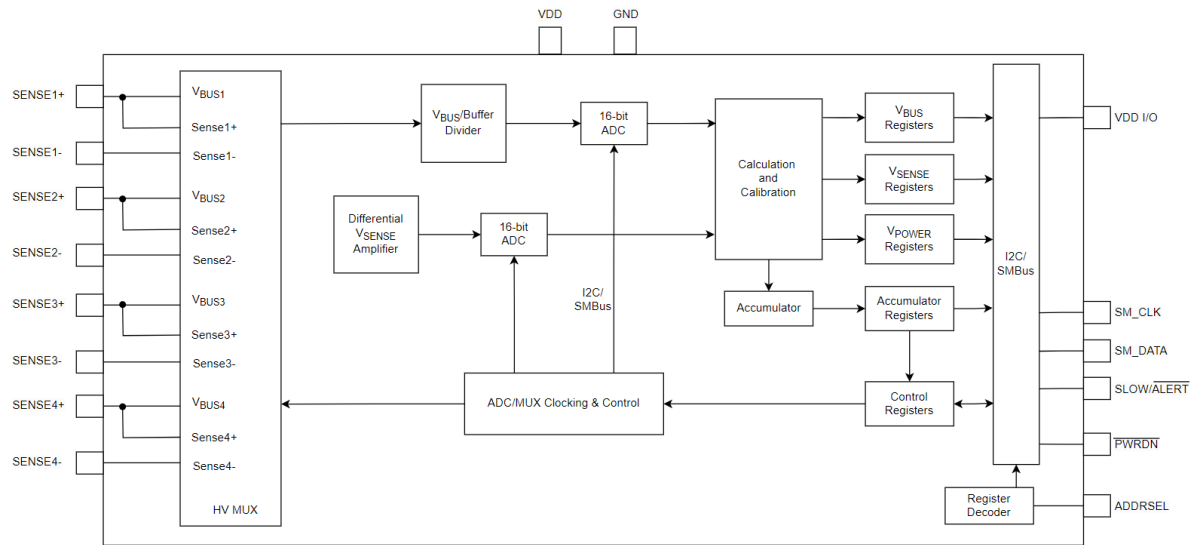
- High-Side Current Monitor with One, Two, Three or Four Channels
- Wide Bus Voltage Range for Voltage Monitor
- Real Time Auto-Calibration of Offset and Gain Errors for Voltage and Current, No User Adjustment Required
- 1% Power Measurement Accuracy over a Wide Dynamic Range
- On-Chip Accumulation of 28-bit Power Results for Energy Measurement
- 2.7V to 5.5V Supply Operation
- SMBus Address – 16 Options, set with Resistor
- No Input Filters Required
- ALERT Features that can be Enabled:
- CSP-16 Package

PIN Configurations (Top View)



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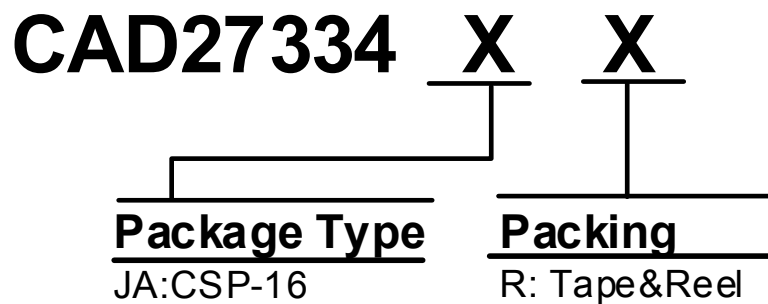
Device Block Diagram



Typical Application of CAD27334

Pin Description

PIN Name	PIN No.	Type	Description
SENSE2+	A1	32V analog pin	0-32V range, connect to supply side of sense resistor
SENSE1-	A2	32V analog pin	0-32V range, connect to load side of sense resistor
SENSE1+	A3	32V analog pin	0-32V range, connect to supply side of sense resistor
VDD	A4	Power for IC	Positive power supply voltage
SENSE2-	B1	Digital Input	0-32V range, connect to load side of sense resistor
VDD I/O	B2	Sets V _{IH} reference for digital I/O	Digital power reference level for digital I/O
PWRDN	B3	Digital input pin	Voltage range is set by VDD I/O pin. Active low puts the device in power-down state (all circuitry is powered down including SMBus)
GND	B4	Analog Input	Ground for the IC
SENSE3-	C1	Analog Input	0-32V range, connect to load side of sense resistor
ADDRSEL	C2	Analog Input	Address selection for the SMBus Slave address
SLOW/ALERT	C3	Digital I/O pin	Voltage range is set by VDD I/O pin. Default function is SLOW, may be programmed to function as ALERT pin (Open Collector when functioning as ALERT, requires pull-up resistor to VDD I/O)
SM_CLK	C4	SMBus clock input	Clock input pin
SENSE3+	D1	32V analog pin	0-32V range, connect to supply side of sense resistor
SENSE4-	D2	32V analog pin	0-32V range, connect to load side of sense resistor
SENSE4+	D3	32V analog pin	0-32V range, connect to supply side of sense resistor
SM_DATA	D4	SMBus data I/O	Open drain requires pull-up resistor to VDD I/O

Ordering Information

Order PN	Green ¹	Package	Marking ID ²	Packing	MPQ	Operation Temperature
CAD27334JAR	Halogen free	CSP-16	MK YWXA	Tape & Reel	3000	-40℃~+125℃

Note:

1. Sensylink can meet RoHS 2.0/REACH requirement. So most package types Sensylink offers only states halogen free, instead of lead free.

2. Marking ID includes 2 rows of characters. In general, the 1st row of characters are part number, and the 2nd row of characters are date code plus production information.



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