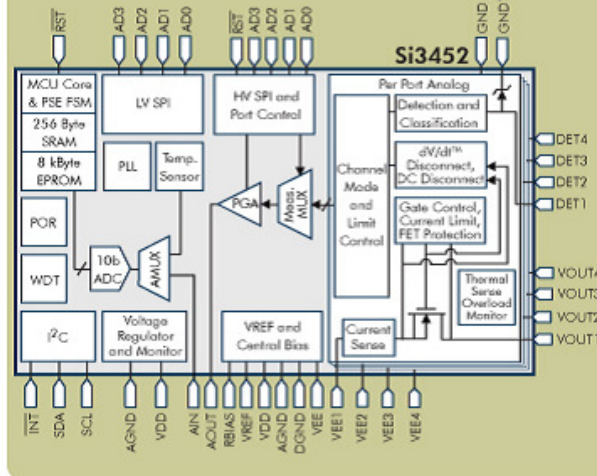


Block Diagram



Power Sourcing Equipment

Si3452, Si3453 Quad Port PoE+ PSE Controllers

The Si3452 and Si3453 are IEEE 802.3at™ (D4.2) compliant, quad-port Power over Ethernet (PoE) controllers for power sourcing equipment (PSE). The Si3452/53 are intended for use in Endpoint (switch) or Midspans designed to deliver power to PDs, such as multi-radio wireless access points, VoIP phones, Pan-Tilt-Zoom (PTZ) video surveillance cameras, Point-of-Sale terminals, and industrial automation equipment.

The Si3452 and Si3453 are the industry's most energy efficient, quad-port PoE PSE (power sourcing equipment) controllers. These devices support PSE systems complying with IEEE's existing 15 W per port PoE standard, as well as the recently-ratified, 30 W per port "PoE+" standard. For proprietary applications, higher power levels to 40 W per port are supported.

With the industry's lowest on-resistance power FET, sense resistor and transient voltage suppressor (TVS) integrated on each port, the Si3452 eliminates up to \$0.20 of external component cost (per port) and reduces PCB footprints by up to 55%. Each port's power supply voltage and current are measured and monitored in real-time and may be accessed via the Si3452's industry-standard I2C interface, enabling sophisticated system-level power management and easing compliance with emerging energy efficient Ethernet standards. Accelerating time-to-market, the Si3452 is part of a complete PSE chipset which includes [ISOpro™ Si840x I2C isolators](#), the Si3500 high voltage DC-DC controller, [comprehensive reference designs](#) and the Power Manager Software Development Kit for rapid integration with popular Ethernet switch chipsets. A comprehensive 8-port midspan reference design kit is available ([Si3452MS8-KIT](#)), including a complete schematic, layout files and bill-of-materials (BOM).

Applications

- Endpoints (switches)
- Midspans (power injectors)
- High power PoE systems:
 - Pan/Tilt/Zoom cameras
 - IEEE 802.11n WAPs
 - Multi-radio WAPs
 - Security and RFID systems
- Industrial automation
- Networked audio
- IP Phone Systems
- MAN WAPs
- WIMAX systems

Features

- Quad port PoE / PoE+ PSE controller
- IEEE 802.3at™ compliant
- Programmable current limits for PoE (15.4 W) and PoE+ (30 W, Class 4)
- Supports proprietary applications up to 40 W per port
- Integrated, low on-resistance power FETs (0.3 Ω) with current-sense circuitry
- Integrated transient voltage surge suppressors
- Proprietary "V3" 3-point detection algorithm
- Supports 1-Event and 2-Event classification
- Choice of disconnect algorithms:
 - Proprietary "dV/dt disconnect" (Si3452)
 - IEEE-compliant DC disconnect (Si3453)
- Embedded MCU enables real-time monitoring of port current and voltage
- Power policing support
- Comprehensive fault protection circuitry
 - Supply UVLO
 - Output current limit and short circuit protection
 - Foldback current limiting
 - Dual-threshold thermal overload
 - Fault source reporting for intelligent port management
- Extended commercial (–10 to 85 °C) and industrial (–40 to 85 °C) operating temperatures
- 6×6 mm, 40-pin QFN
- RoHS-compliant
- UNH Interoperability Lab test reports