



PRODUCT BRIEF

LTC4274

Single IEEE 802.3at Power Over Ethernet Controller

FEATURES

- Compliant with IEEE 802.3at Type 1 and 2
- Supports Proprietary Very High Power Up to 50W
- 0.34Ω Total Channel Resistance
130mW at 600mA
- Advanced Power Management
 - 8-Bit Programmable Current Limit (I_{LIM})
 - 7-Bit Programmable Overload Currents (I_{CUT})
 - Fast Shutdown
 - 14.5-Bit Port Current/Voltage Monitoring
 - 2-Event Classification
- Very High Reliability 4-Point PD Detection:
 - 2-Point Forced Voltage
 - 2-Point Forced Current
- High Capacitance Legacy Device Detection
- LTC4259A-1 and LTC4266 SW Compatible
- 1MHz I²C Compatible Serial Control Interface
- Midspan Backoff Timer
- Available in 38-Pin 5mm × 7mm QFN Package

APPLICATIONS

- PoE PSE Switches/Routers
- PoE PSE Midspans

DESCRIPTION

The LTC[®]4274 is a single Power Sourcing Equipment (PSE) controller designed for use in IEEE 802.3 Type 1 and Type 2 (high power) compliant Power over Ethernet (PoE) systems.

The LTC4274 is also a good choice for proprietary PoE PSE systems, which may require more power than the new IEEE 802.3at standard allows. The LTC4274 can source up to 50W while otherwise remaining compatible with IEEE 802.3at.

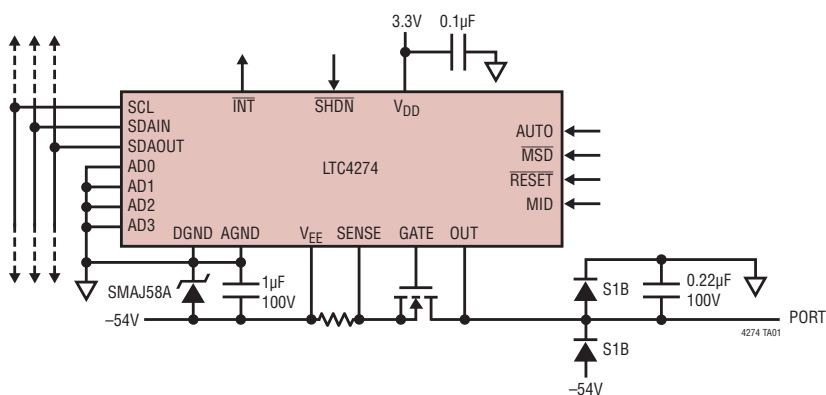
The LTC4274 delivers lowest-in-industry heat dissipation by utilizing a low R_{ON} external MOSFET and a 0.25Ω sense resistor, eliminating the need for expensive heat sinks. An external MOSFET also provides a more robust solution compared to an integrated MOSFET.

Advanced power management features include: selectable high speed 9.5-bit (1kHz) or high resolution 14.5-bit current and voltage readback, a 7-bit DAC for overcurrent threshold (I_{CUT}), a unique nonlinear 8-bit programmable current limit (I_{LIM}) and versatile quick shutdown. PD Discovery uses a proprietary dual-mode 4-point detection mechanism ensuring the best immunity from false PD detection. Midspan PSEs are supported with 2-event classification and a two second backoff timer. Legacy high-capacitance device detection is available. The LTC4274 includes an I²C serial interface operable up to 1MHz.

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TYPICAL APPLICATION

Complete Ethernet High Power Source



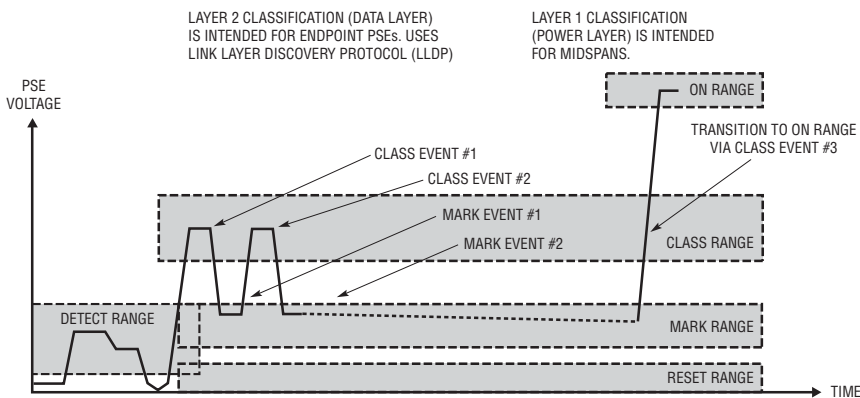
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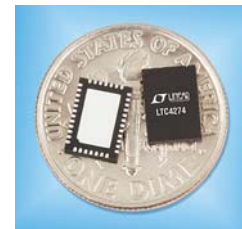
LTC4274 Product Brief

BENEFITS

- **Lowest Channel Resistance Eliminates Heat Sinks**
- **First Fully IEEE 802.3at-Compliant Single PSE**
- **Linear's Experienced and Dedicated PoE Team**
Linear Technology's team provides timely technical support and optimum performance at the lowest overall cost with fastest time to market.



LTC4274 Voltage Probe During 2-Event Classification



LTC4274 Size Comparison

RELATED PARTS

PART NUMBER	PSE/PD	CHANNELS	DESCRIPTION	PACKAGE
LTC4264	PD	1	Pre-Standard High Power PD PoE Interface Controller (35W)	4mm × 3mm DFN-12
LTC4265	PD	1	IEEE 802.3at High Power PD PoE+ Interface Controller (25.5W)	4mm × 3mm DFN-12
LTC4268-1	PD	1	Pre-Standard High Power PD PoE Interface Controller with Integrated Synchronous Switching Regulator (35W)	7mm × 4mm DFN-32
LTC4269-1	PD	1	IEEE 802.3at High Power PD PoE+ Interface Controller with Integrated Synchronous No-Opto Flyback Switching Regulator (25.5W)	7mm × 4mm DFN-32
LTC4269-2	PD	1	IEEE 802.3at High Power PD PoE+ Interface Controller with Integrated Synchronous Forward Converter (25.5W)	7mm × 4mm DFN-32
LTC4278	PD	1	IEEE 802.3at High Power PD PoE+ Interface Controller with Integrated Synchronous No-Opto Flyback Switching Regulator (25.5W), 12V Auxiliary Support	7mm × 4mm DFN-32
LTC4263-1	PSE	1	High Power IEEE 802.3af PSE Controller with Internal Switch	4mm × 3mm DFN-14 SO-14
LTC4266	PSE	4	Supports IEEE 802.3at Type 1 and Type 2 PDs, 0.34Ω Channel Resistance, Advanced Power Management, High Reliability 4-Point PD Detection, Legacy Capacitance Detect	5mm × 7mm DFN-38 SSOP-36

INFO AND SAMPLES

- Visit <http://www.linear.com/contact/> or call 1-800-4-LINEAR to find contact information for the sales office or distributor near you.
- Visit <http://www.linear.com/poe> for more information about PoE and PoE+ products.

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