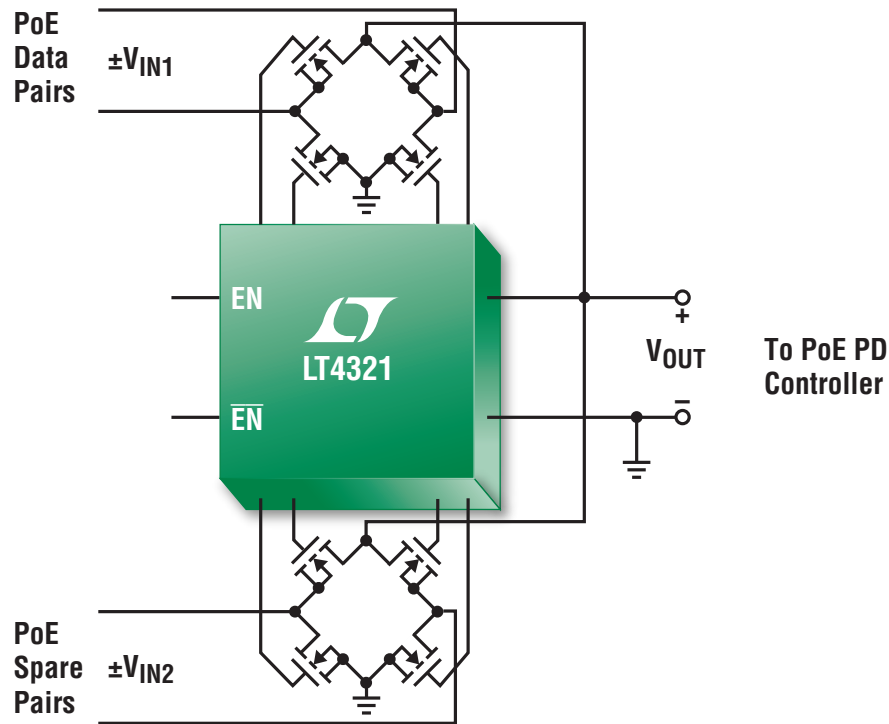


PoE Ideal Diode Bridge

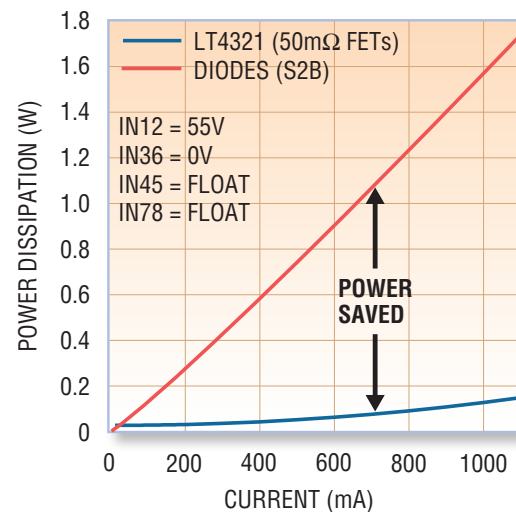


Active Diode Bridge Controller Minimizes Power Loss and Heat in Power over Ethernet Powered Device

The LT®4321 ideal diode bridge controller replaces two diode bridge rectifiers with low loss N-channel MOSFET bridges to increase the available power and reduce heat dissipation in a Power over Ethernet powered device (PoE PD). Circuit size and cost are reduced as the enhanced power efficiency eliminates heat sinking requirements. Power savings of 10x or more enables PDs to stay below PoE classification power levels, or to add value-rich functionality while maintaining class.

Features

- Low Loss Replacement for Two PoE PD Diode Bridges
- Reduces Heat to Ease Thermal Design
- Maximizes Available Power and Voltage
- PoE/PoE+/LT₊PoE++™ Compatible
 - Works with 2- and 4-Pair PoE
 - Does Not Corrupt Detection and Classification
 - IEEE 802.3 Compliant When Paired with a PD Controller
- 100V Absolute Maximum
- Less Than 5μA Quiescent Current During Detection
- -40°C to 125°C Guaranteed Temperature Range
- 16-Pin 4mm × 4mm QFN Package



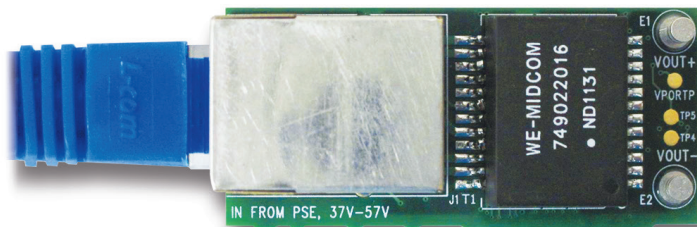
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LT4321 PoE Active Bridge Controller Power Savings

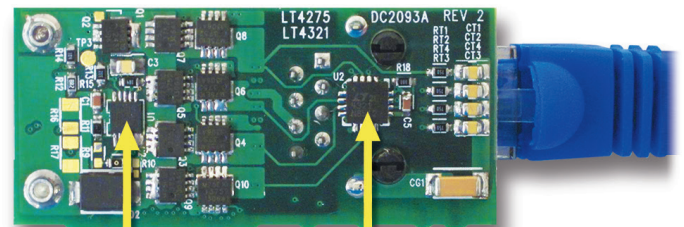
PoE Type	$P_{PD(MAX)}$	$V_{PD(MIN)}$	$I_{PD(MAX)}$	$P_{SAVED(MAX)}$ Per Bridge	Powered Bridges	Power Savings	Efficiency Gain
PoE, IEEE 802.3af	13W	37V	350mA	0.46W	1	0.46W	3.6%
PoE+, IEEE 802.3at	25.5W	42.5V	600mA	0.83W	1	0.83W	3.3%
LTPoE++	90W	41V	2.2A	1.6W at 1.1A	2	3.2W	3.6%

High Efficiency 90W PD Solution

Using LT4321 and LT4275 LTPoE++/PoE+/PoE PD Controller



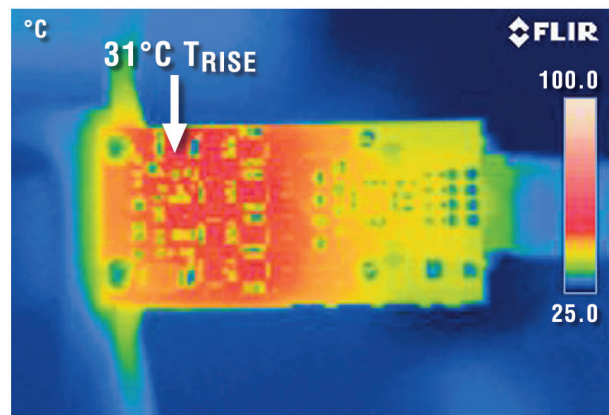
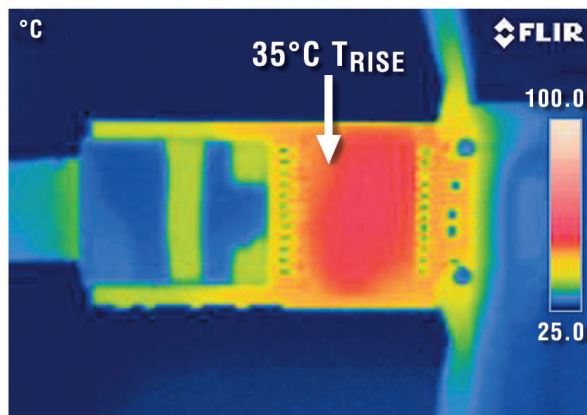
Top Views



LT4275

LT4321

Bottom Views



Thermograph Conditions: 4-Pair 90W LTPoE++, 2.2A at 41V without Forced Airflow