



**THE DATASHEET OF
LTC4291IUF#PBF**



LTC4292/LTC4291

4-Port IEEE 802.3bt PoE PSE Controller

FEATURES

- **Four PSE Ports**
 - **Two Power Channels Per Port**
- **Fully Compliant IEEE 802.3bt Type 3 and 4 PSE**
 - **Compliant Support for Type 1, 2, 3, and 4 PDs**
- **Low Power Path Dissipation per Channel**
 - **150mΩ Sense Resistance**
 - **30mΩ or Lower MOSFET R_{DS(ON)}**
- **Chipset Provides Electrical Isolation**
 - **Eliminates Optos and Isolated 3.3V Supply**
- **Very High Reliability Multipoint PD Detection**
 - **Connection Check Distinguishes Single-Signature and Dual-Signature PDs**
- **Continuous, Dedicated Per-Port Power and Current Monitoring**
 - **Per-Port Power Policing**
- **1MHz I²C Compatible Serial Control Interface**
- **Pin or I²C Programmable PD Power Up to 71.3W**
- **Available in a 40-Lead 6mm × 6mm (LTC4292) and 24-Lead 4mm × 4mm (LTC4291) QFN Package**

APPLICATIONS

- PoE PSE Switches/Routers
- PoE PSE Midspans

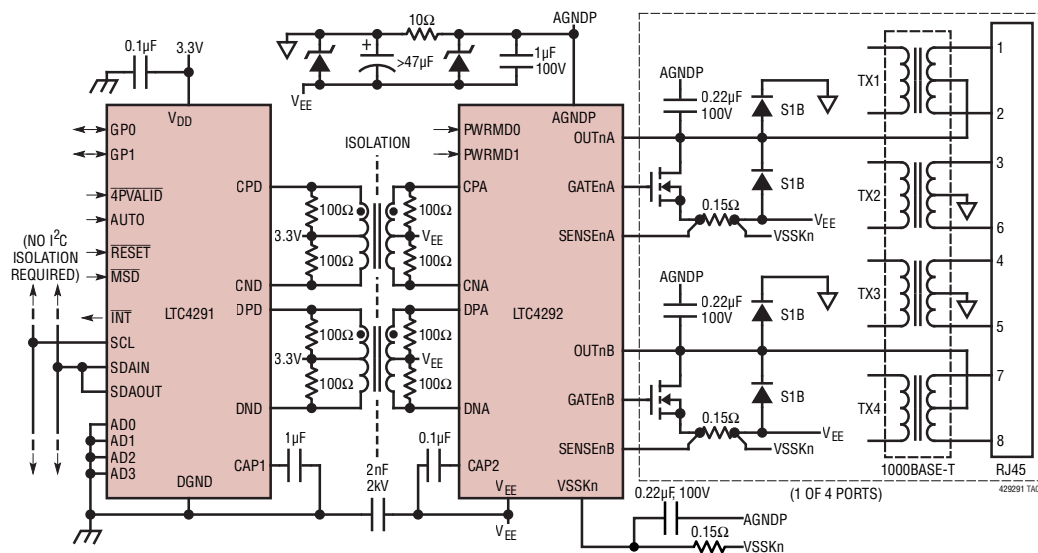
DESCRIPTION

The **LTC[®]4292/LTC4291** chipset is a 4-port power sourcing equipment (PSE) controller designed for use in IEEE 802.3bt Type 3 and 4 compliant Power over Ethernet (PoE) systems. The LTC4292/LTC4291 is designed to power compliant 802.3af, 802.3at, and 802.3bt PDs. The LTC4292/LTC4291 chipset delivers lowest-in-industry heat dissipation by utilizing low-R_{DS(ON)} external MOSFETs and 0.15Ω sense resistance per power channel. A transformer-isolated communication protocol replaces expensive opto-couplers and complex isolated 3.3V supply, resulting in significant BOM cost savings.

Advanced power management features include per-port 14-bit current monitoring, programmable current limit, and versatile fast shut-down of preselected ports. Advanced power management host software is available under a no-cost license. PD detection uses a proprietary multipoint detection mechanism ensuring excellent immunity from false PD identification. Autoclass and 5-event physical classification are supported. The LTC4292/LTC4291 includes an I²C serial interface operable up to 1MHz. The LTC4292/LTC4291 is pin or I²C programmable to negotiate PD delivered power up to 71.3W.

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TYPICAL APPLICATION



LTC4292/LTC4291

ABSOLUTE MAXIMUM RATINGS

(Notes 1, 4)

LTC4292

Supply Voltages

AGNDP – V_{EE} –0.3V to 80V
 VSSK12, VSSK34 (Note 7) ... V_{EE} – 0.3V to V_{EE} + 0.3V

Digital Pins

PWRMD0, PWRMD1 V_{EE} – 0.3V to CAP2 + 0.3V

Analog Pins

SENSEnM, GATEnM, OUTnM V_{EE} – 0.3V to V_{EE} + 80V
 CAP2 (Note 13) V_{EE} – 0.3V to V_{EE} + 5V
 CPA, CNA, DPA, DNA V_{EE} – 0.3V to V_{EE} + 0.3

Operating Ambient Temperature Range

LTC4292I –40°C to 85°C

Junction Temperature (Note 2) 125°C

Storage Temperature Range –65°C to 150°C

(Note 1)

LTC4291

Supply Voltages

V_{DD} – DGND –0.3V to 3.6V

Digital Pins

SCL, SDAIN, SDAOUT, $\overline{\text{INT}}$, $\overline{\text{RESET}}$, $\overline{\text{MSD}}$, ADn, AUTO, 4PVALID, GPn DGND – 0.3V to V_{DD} + 0.3V

Analog Pins

CAP1 (Note 13) –0.3V to DGND + 2V
 CPD, CND, DPD, DND DGND – 0.3V to V_{DD} + 0.3V

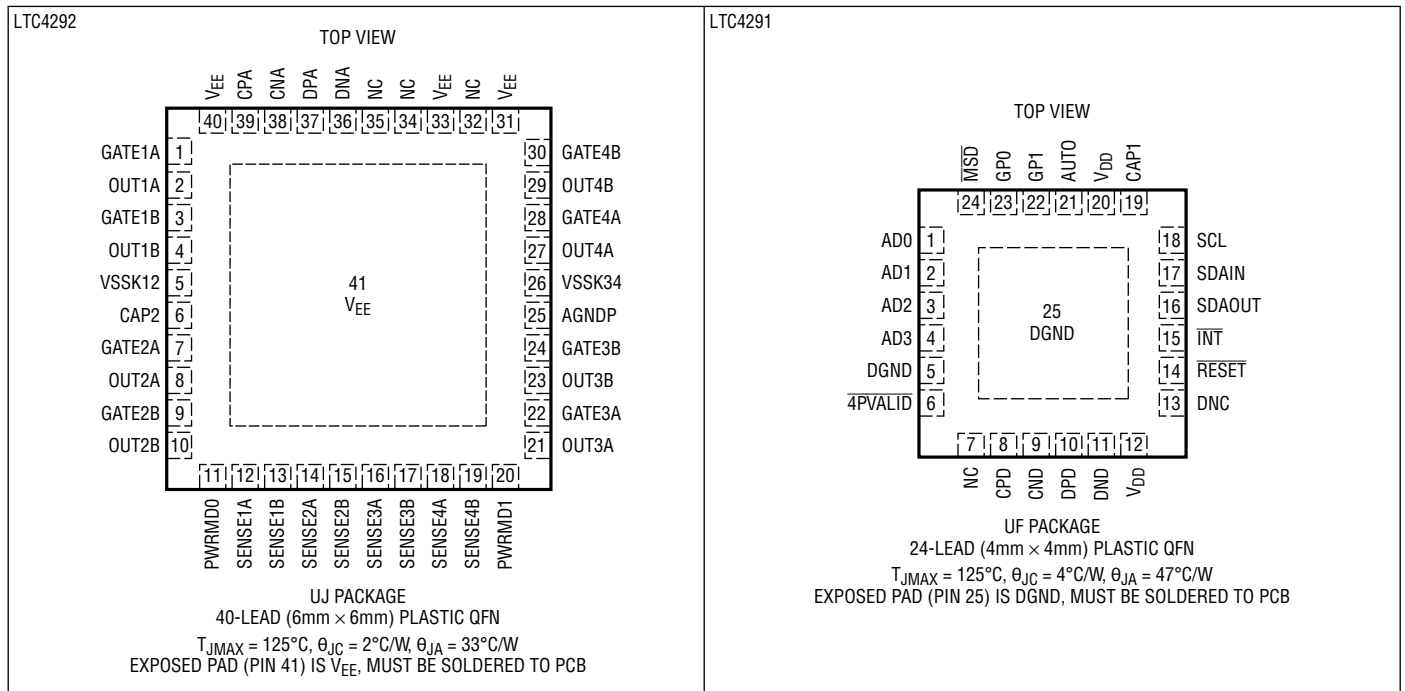
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Junction Temperature (Note 2) 125°C

Storage Temperature Range –65°C to 150°C

PIN CONFIGURATION



ORDER INFORMATION <http://www.linear.com/product/LTC4292#orderinfo>

| LEAD FREE FINISH | TAPE AND REEL | PART MARKING | PACKAGE DESCRIPTION | TEMPERATURE RANGE |
|------------------|------------------|--------------|---------------------------------|-------------------|
| LTC4291IUF#PBF | LTC4291IUF#TRPBF | 4291 | 24-Lead (4mm × 4mm) Plastic QFN | –40°C to 85°C |
| LTC4292IUJ#PBF | LTC4292IUJ#TRPBF | LTC4292UJ | 40-Lead (6mm × 6mm) Plastic QFN | –40°C to 85°C |

Consult ADI Marketing for parts specified with wider operating temperature ranges.

For more information on lead free part marking, go to: <http://www.linear.com/leadfree/>

For more information on tape and reel specifications, go to: <http://www.linear.com/tapeandreeel/>. Some packages are available in 500 unit reels through designated sales channels with #TRMPBF suffix.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View LTC4291IUF#PBF on WIN SOURCE](#)

 [Analog Devices Inc. Information](#)

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