XR78021 Product Brief

20A Integrated Power Stage “DrMOS” with Current and Temperature Monitoring

General Description

The XR78021 is an integrated power stage containing a synchronous buck gate driver which is packaged with both half bridge MOSFETs designed to provide output currents up to 20Amps. Also known as “DrMOS” (Driver plus MOSFETs), the package design provides very low thermal impedance and excellent EMI performance by minimizing parasitic inductances. The ratio of the MOSFET $R_{DS(ON)}$ is optimized for conversions from 12V rails to the low output voltages required for the latest processor and chipsets of computing systems.

Computing systems are demanding more and more telemetry of the power system. The XR78021 monitors internal temperature (TOUT pin) and uses that temperature information to provide a temperature corrected current output (IOUT pin) derived from the inductor DCR. The output current information has minimal phase delay and is suitable for use with current mode PWM and valley current mode constant on-time control.

TOUT serves the secondary function of a fault flag for V_{CC} UVLO and Over-Temp fault. The XR78021 is offered in a 4x5x0.9mm QFN package.

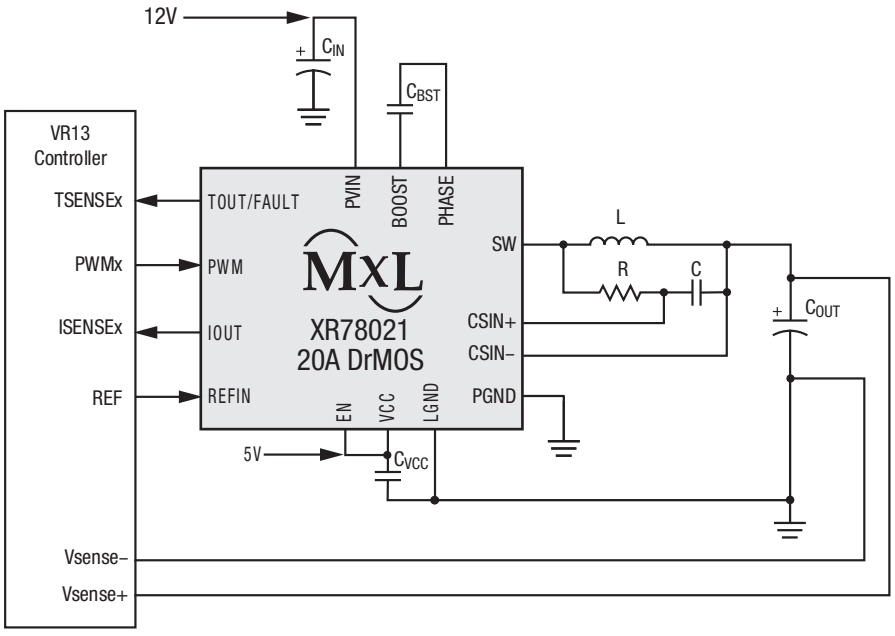
FEATURES

- 20A Integrated Power Stage
- Input Voltage Range: 4.5V to 17V
- Output Voltage Range: 0.6V to 3.3V
  - 0.6V to 5.5V without current sense
- IMON output 5mV/A (DCR=0.29mohm) with temperature compensation
  - Suitable for current mode control loops
- TOUT output 8mV/°C with fault flags for V_{CC} UVLO and temperature
- Designed for 3.3V tristate PWM outputs
- Boost pin refresh
- 4x5x0.9mm RoHS compliant package

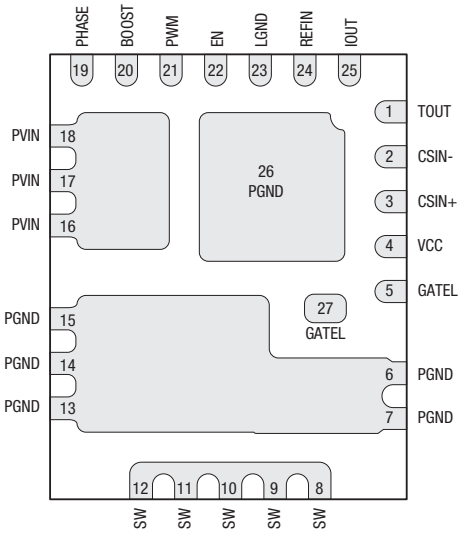
APPLICATIONS

- Servers
- Networking Equipment
- Industrial PC

Typical Application



Pin Configuration



Bottom View, 4mm x 5mm x 0.9mm QFN

Ordering Information[1]

Part Number	Operating Temperature Range	Lead-Free	Package	Packaging Method
XR78021ELTR-F	-40°C ≤ T_J ≤ 125°C	No[2]	4mm x 5mm x 0.9mm QFN	Reel
XR78021EVB	XR78021 Evaluation Board			

NOTE:
1. Refer to www.exar.com/XR78021 for most up-to-date Ordering Information.
2. RoHS Compliant with 7(a) Exemption taken. Lead based die adhesive is used between the die and lead frame.

Please contact powertechsupprt@exar.com to request a complete datasheet.

MAXLINEAR

Corporate Headquarters:
5966 La Place Court
Suite 100
Carlsbad, CA 92008
Tel.:+1 (760) 692-0711
Fax: +1 (760) 444-8598
www.maxlinear.com

High Performance Analog:
1060 Rincon Circle
San Jose, CA 95131
Tel.: +1 (669) 265-6100
Fax: +1 (669) 265-6101
Email: powertechsupport@exar.com
www.exar.com