

38 – 60V_{IN}, 160W ZVS Buck-Boost Regulator

Product Description

The PI3755-02 is a high-efficiency, wide-input-range DC-DC ZVS Buck-Boost regulator. This high-density module integrates controller, power switches and support components. The integration of a high-performance Zero-Voltage Switching (ZVS) topology within the PI3755-02 increases point-of-load performance providing best-in-class power efficiency.

The PI3755-02 requires an externally applied 5V bias to the VDR input, an external inductor, resistive divider and minimal capacitors to form a complete DC-DC switching mode buck-boost regulator.

The ZVS architecture also enables high frequency operation while minimizing switching losses and maximizing efficiency. The high switching frequency operation reduces the size of the external filtering components, improves power density and enables very fast dynamic response to line and load transients. The PI3755-02 sustains high switching frequency up to the rated input voltage without sacrificing efficiency and supports large conversion ratios.

Features & Benefits

- 98% efficiency at 1.5MHz F_{SW}
- Wide input voltage range of 38 – 60V
- Wide output voltage range of 28 – 54V
- 160W continuous output power
- Power density exceeding 6,400W/in³
- Fast transient response in VRM 12.X applications
- Light-load mode <200mW no-load power dissipation
- VTM compatibility mode
- User configurable differential amplifier
- Input / Output Over / Undervoltage Protection
- Overtemperature protection
- Fast and slow current limits
- –40 to 125°C operating range (T_J)

Applications

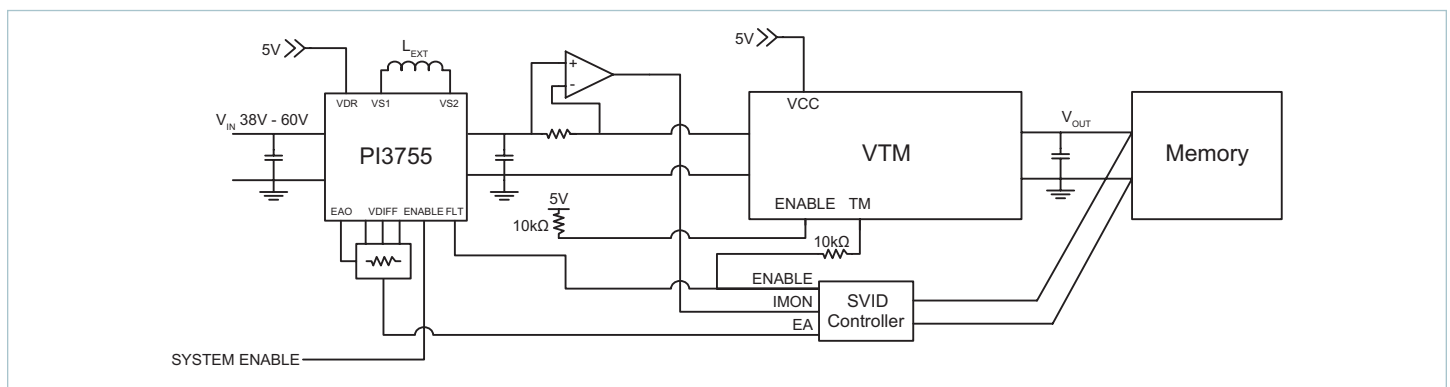
- VR12.X Factorized Power Solution (when coupled with a VTM™ device)
- Computing, Communications, DDR Memory
- 48V to PoL Power Solutions

Package Information

- 10 x 10 x 2.56mm Land Grid Array Module



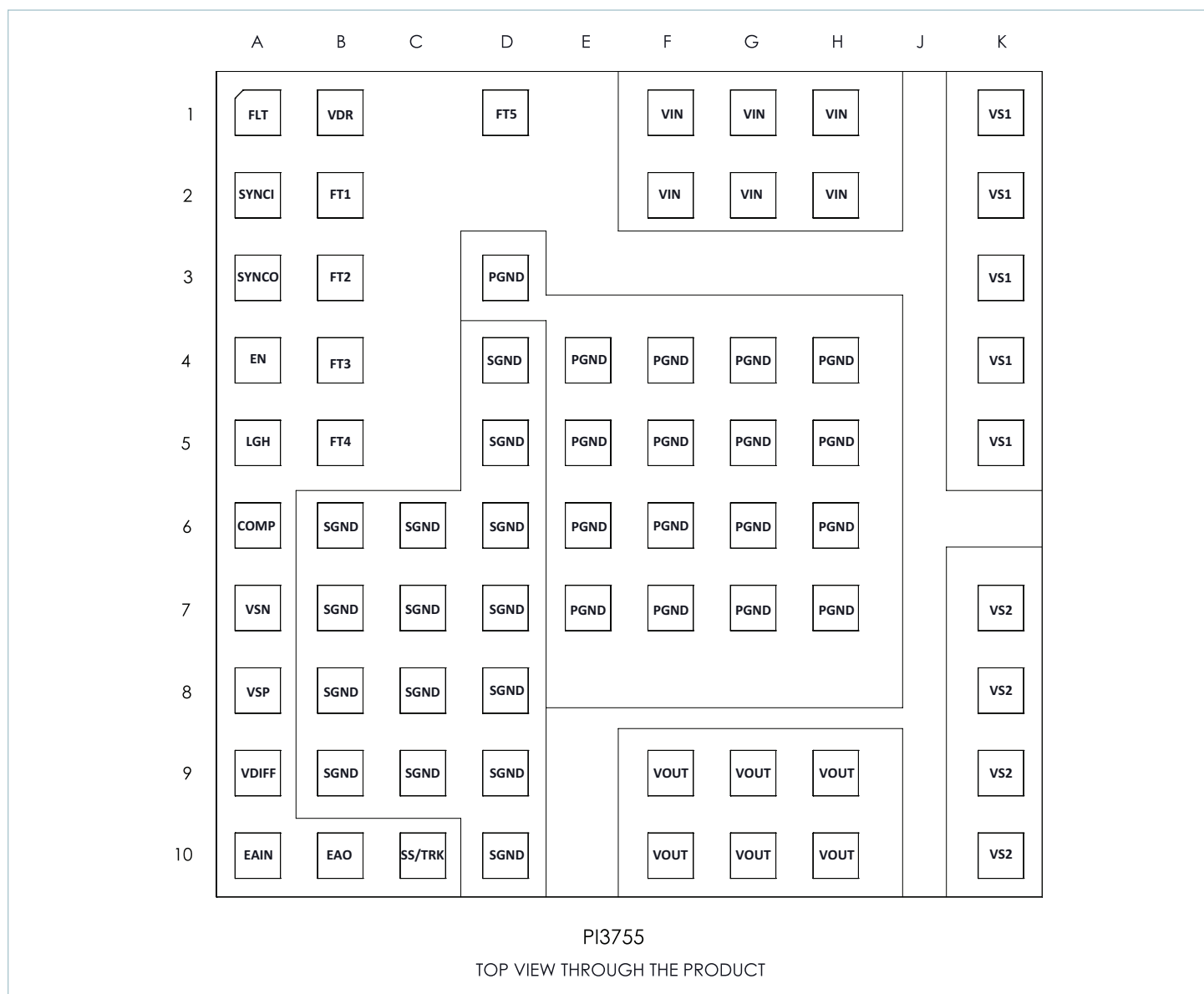
Typical Application



Applications diagram for use within a Factorized Power, VR12.5 design

Note: Product images may not highlight current product markings.

Package Pinout



Large Pin Blocks

Pin Block Name	Group of pins
VIN	F1 – 2, G1 – 2, H1 – 2
VS1	K1 – 5
PGND	D3, E4 – 7, F4 – 7, G4 – 7, H4 – 7
VS2	K7 – 10
VOUT	F9 – 10, G9 – 10, H9 – 10
SGND	B6 – 9, C6 – 9, D4 – 10

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Contact Us: <http://www.vicorpower.com/contact-us>

Vicor Corporation
25 Frontage Road
Andover, MA, USA 01810
Tel: 800-735-6200
Fax: 978-475-6715
www.vicorpower.com

email

Customer Service: custserv@vicorpower.com
Technical Support: apps@vicorpower.com

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