G5172

High Efficiency, 4A Output, Synchronous Step Down

Features

- **Two 30mΩ (typical) MOSFETs for high efficiency at 4A loads**
- **200kHz to 2MHz Switching Frequency**
- **0.8V ± 1% Voltage Reference Over Temperature**
- **Synchronizes to External Clock**
- **Adjustable Soft Start**
- **UV and OV Power Good Output**
- **Low Operating and Shutdown Quiescent Current**
- **Safe Start-up into Pre-Biased Output**
- **Cycle by Cycle Current Limit, Thermal and Frequency Fold Back Protection**
- **Thermally Enhanced 3mm × 3mm 16-pin QFN and 4mm × 4mm 16-pin QFN**
- **Package QFN4x4 Loads can attain to 5A**

Applications

- **Low-Voltage, High-Density Power Systems**
- **Point of Load Regulation for High Performance DSPs, FPGAs, ASICs and Microprocessors**
- **Broadband, Networking and Optical Communication Infrastructure**

General Description

The G5172 device is a full featured 6.0V, 4A synchronous step down current mode converter with two integrated MOSFETs.

The G5172 enables small designs by integrating the MOSFETs, implementing current mode control to reduce external component count, reducing inductor size by enabling up to 2MHz switching frequency, and minimizing the IC footprint with a small 3mm x 3mm (4mm x 4mm) thermally enhanced QFN package.

The G5172 provides accurate regulation for a variety of loads with an accurate ±1% Voltage Reference (VREF) over temperature.

Efficiency is maximized through the integrated 30mΩ MOSFETs and 350μA typical supply current. Using the enable pin, shutdown supply current is reduced to 2μA by entering a shutdown mode.

Under voltage lockout is internally set at 2.6V, but can be increased by programming the threshold with a resistor network on the enable pin. The output voltage startup ramp is controlled by the soft start pin. An open drain power good signal indicates the output is within 93% to 107% of its nominal voltage.

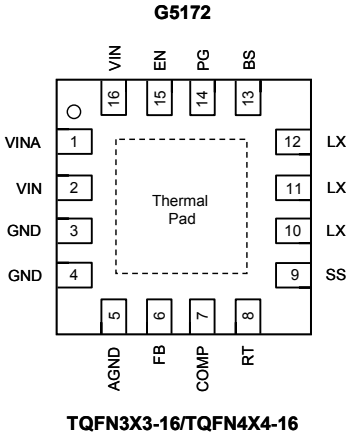
Frequency fold back and thermal shutdown protects the device during an over-current condition.

Ordering Information

ORDER NUMBER	Marking	TEMP. RANGE	PACKAGE (Green)
G5172R41U	5172	-40°C to +85°C	TQFN3X3-16
G5172R41D	5172	-40°C to +85°C	TQFN3X3-16
G5172R81U	5172	-40°C to +85°C	TQFN4X4-16

Note: R4: TQFN3X3-16 R8:TQFN4X4-16
1: Bonding Code
U & D: Tape & Reel

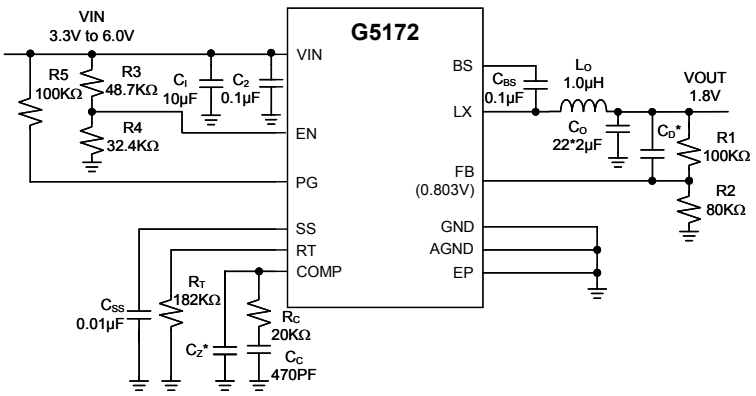
Pin Configuration



TQFN3X3-16/TQFN4X4-16

Note: Recommend connecting the Thermal Pad to the Ground for excellent power dissipation.

Typical Application Circuit



∗ Option

∗ VINA must connect to VIN

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- **200kHz to 2MHz Switching Frequency**
- **0.8V ± 1% Voltage Reference Over Temperature**
- **Synchronizes to External Clock**
- **Adjustable Soft Start**
- **Low Operating and Shutdown Quiescent Current**
- **Safe Start-up into Pre-Biased Output**
- **Cycle by Cycle Current Limit, Thermal and Frequency Fold Back Protection**
- **Thermally Enhanced TSSOP-14 (FD)**

Applications

- **Low-Voltage, High-Density Power Systems**
- **Point of Load Regulation for High Performance DSPs, FPGAs, ASICs and Microprocessors**
- **Broadband, Networking and Optical Communication Infrastructure**

Ordering Information

ORDER NUMBER	Marking	TEMP. RANGE	PACKAGE (Green)
G5174FA1U	G5174	-40°C to +85°C	TSSOP-14 (FD)

Note: FA :TSSOP-14 (FD)
1: Bonding Code
U: Tape & Reel

General Description

The G5174 device is a full featured 5.5V, 4A synchronous step down current mode converter with two integrated MOSFETs.

The G5174 enables small designs by integrating the MOSFETs, implementing current mode control to reduce external component count, reducing inductor size by enabling up to 2MHz switching frequency, and minimizing the IC footprint with a thermally enhanced TSSOP-14 (FD) package.

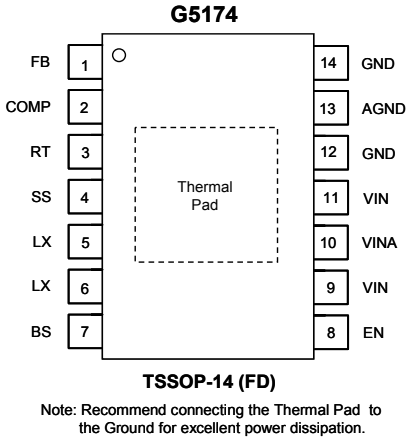
The G5174 provides accurate regulation for a variety of loads with an accurate ±1% Voltage Reference (VREF) over temperature.

Efficiency is maximized through the integrated 30mΩ MOSFETs and 350μA typical supply current. Using the enable pin, shutdown supply current is reduced to 2μA by entering a shutdown mode.

Under voltage lockout is internally set at 2.6V, but can be increased by programming the threshold with a resistor network on the enable pin. The output voltage startup ramp is controlled by the soft start pin.

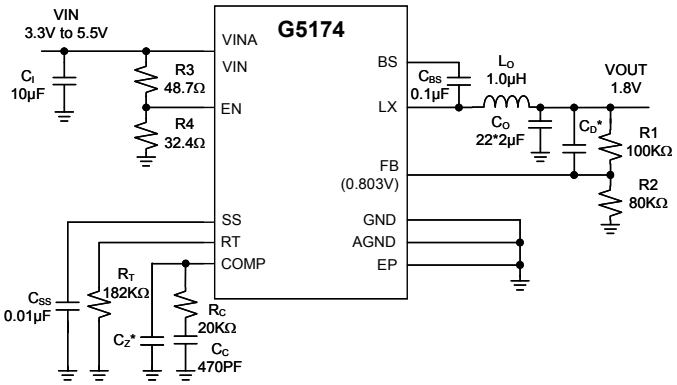
Frequency fold back and thermal shutdown protects the device during an over-current condition.

Pin Configuration



Note: Recommend connecting the Thermal Pad to the Ground for excellent power dissipation.

Typical Application Circuit



∗ Option