

# High Efficiency, 6A Output, Synchronous Step Down

## Features

- Two 20mΩ (typical) MOSFETs for high efficiency at 6A 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 TQFN and 4mm × 4mm 16-pin TQFN

## 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) |
|--------------|---------|----------------|-----------------|
| G5196R41U    | 5196    | -40°C to +85°C | TQFN3X3-16      |
| G5196R41D    | 5196    | -40°C to +85°C | TQFN3X3-16      |
| G5196R81U    | 5196    | -40°C to +85°C | TQFN4X4-16      |

Note: R4: TQFN3X3-16 R8: TQFN4X4-16

1: Bonding Code

U & D: Tape & Reel

## General Description

The G5196 device is a full featured 5.5V, 6A synchronous step down current mode converter with two integrated MOSFETs.

The G5196 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 TQFN package.

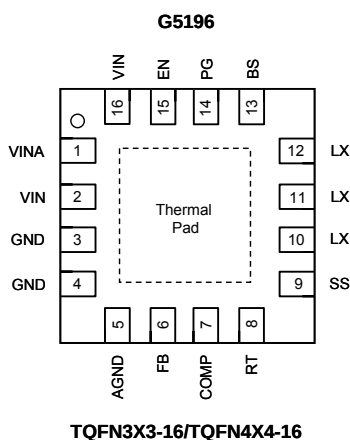
The G5196 provides accurate regulation for a variety of loads with an accurate ±1% Voltage Reference (VREF) over temperature.

Efficiency is maximized through the integrated 20mΩ 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.

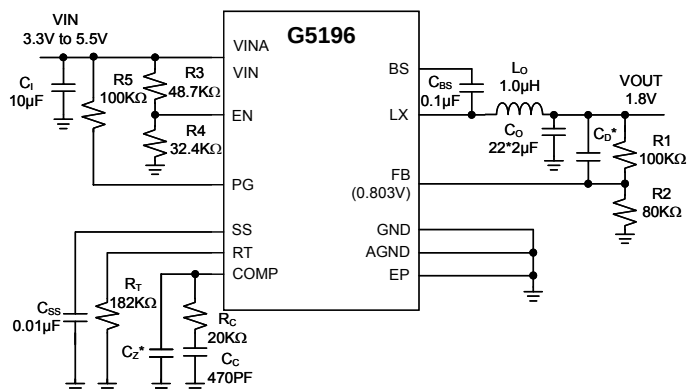
Frequency fold back and thermal shutdown protects the device during an over-current condition.

## Pin Configuration



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

## Typical Application Circuit



\* Option

\* VINA must connect to VIN