# High Efficiency 8A Synchronous Buck Converter for 5V System Power

## Features

- **Ultra-High Efficiency**
- **Low Quiescent Current of 40μA**
- **Integrated 17mΩ at VCC=5V N-Channel MOSFET for Low Side**
- **Integrated 20mΩ at VCC=5V N-Channel MOSFET for High Side**
- **No Current-Sense Resistor (Lossless $I_{LIMIT}$)**
- **Quasi-PWM with 100ns Load-Step Response**
- **1% VOUT Accuracy Over Line and Load**
- **Programmable Switching Frequency**
- **4.5V to 5.5V Adjustable Output Range**
- **6V to 28V Adapter or Battery Input Range**
- **Noiseless Pulse-skipping Mode (25kHz min)**
- **VCLK Output**
- **Integrated Boost Switch**
- **OVP & UVP**
- **Over Temperature Protection (non-latch)**
- **3.3ms Soft-Start**
- **Power-Good Indicator**
- **Fixed 5V, 80mA Bootstrapped Linear Regulator**

## General Description

G5380 is a 8A, synchronous DC/DC buck converter with integrated 20mΩ N-channel high-side MOSFET and 17mΩ N-channel low-side MOSFET. It uses constant on-time control scheme to handle wide input/output voltage ratios with ease and provides 100ns "instant-on" response to load transients while maintaining a relatively constant switching frequency. The G5380 achieves high efficiency at a reduced cost by eliminating the current-sense resistor found in traditional current-mode PWMs. Single-stage buck conversion allows these devices to directly step down high-voltage batteries for the highest possible efficiency. The built-in 5V LDO supports 80mA for internal circuit with automatic bootstrapping to DC/DC converter output. The G5380 is intended for the 5V system power supply of Notebook Computer. The G5380 is available in QFN4X4-28 package.

## Applications

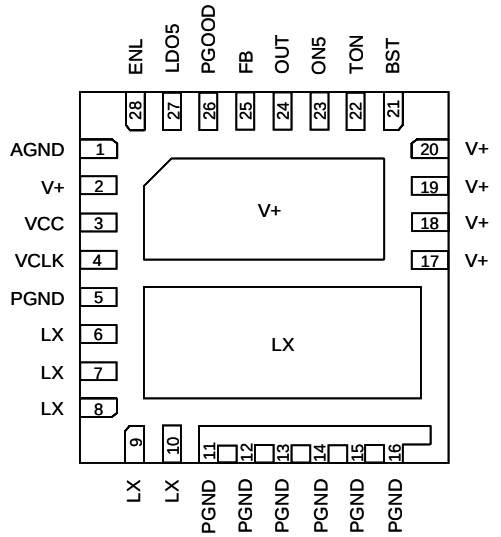
- **Notebook Computers**
- **I/O Supply**
- **Networking Power Supply**

## Ordering Information

| ORDER NUMBER | MARKING | TEMP. RANGE | PACKAGE (Green) |
|---|---|---|---|
| G5380QN1U | 5380 | -40°C to +85°C | QFN4X4-28 |

Note: QN: QFN4X4-28
1: Bonding Code
U : Tape & Reel

## Pin Configuration




**G5380 QFN4X4-28**

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