

High-Speed Step-Down Controller

Features

- Ultra-High Efficiency
- No Current-Sense Resistor (Lossless I_{LIMIT})
- Quasi-PWM with 100ns Load-Step Response
- 1% V_{OUT} Accuracy Over Line and Load
- 0.75V to 3.6V Adjustable Output Range
- 4.5V to 24V Battery Input Range
- Integrated Boost Diode
- OVP & UVP
- 1.7ms Soft-Start
- Drives Large Synchronous-Rectifier FETs
- Power-Good Indicator

Applications

- Notebook Computers
- CPU Core Supply
- I/O Supply
- Chipset/RAM Supply as Low as 0.75V
- Networking Power Supply

General Description

G5603 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 G5603 achieves high efficiency at a reduced cost by eliminating the current-sense resistor found in traditional current-mode PWMs. Efficiency is further enhanced by an ability to drive very large synchronous rectifier MOSFETs. Single-stage buck conversion allows these devices to directly step down high-voltage batteries for the highest possible efficiency. Alternatively, two-stage conversion (stepping down the +5V system supply instead of the battery) at a higher switching frequency allows the minimum possible physical size. The G5603 is intended for CPU core, chipset, DRAM, or other low-voltage supplies as low as 0.75V. The G5603 is available in TSSOP-14, TQFN3X3-16 and TQFN3.5X3.5-14 package and includes over voltage protection.

Ordering Information

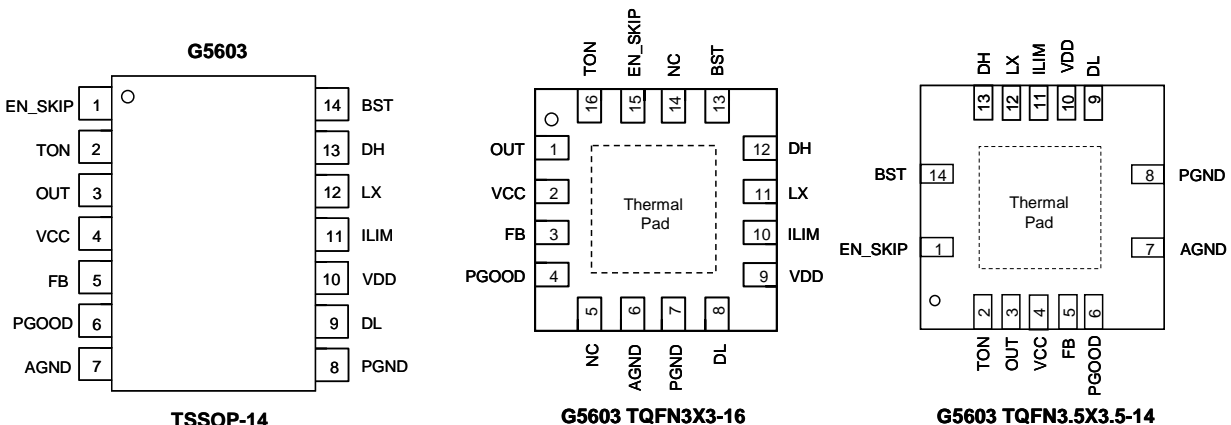
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5603D21U	G5603	-40°C to +85°C	TSSOP-14
G5603R41U	5603	-40°C to +85°C	TQFN3X3-16
G5603RU1U	5603	-40°C to +85°C	TQFN3.5x3.5-14

Note: D2: TSSOP-14 RU: TQFN3.5x3.5-14 R4: TQFN3X3-16

1: Bonding Code

U : Tape & Reel

Pin Configuration



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