

Programmable Output High-Speed Step-Down Controller for Notebook Computer

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
- Dynamic Voltage Scaling by G0 and G1 Inputs
- 4.5V to 24V Battery Input Range
- OVP & UVP
- Built-in BST Diode
- 1.7ms Soft-Start
- Drives Large Synchronous-Rectifier FETs
- Power-Good Indicator
- G0/G1 High Active (G5617A)
G0/G1 Low Active (G5617B)

Applications

- Notebook Computers
- CPU Core Supply
- Chipset/RAM Supply as Low as 0.75V
- 1.8V and 2.5V I/O Supply
- Networking Power Supply

General Description

G5617A/G5617B PWM controller 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 G5617A/G5617B 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 G5617A/G5617B is intended for CPU core, chipset, DRAM, or other low-voltage supplies as low as 0.75V. It provides four resistor-programmable output voltages by G0 and G1 digital inputs.

The G5617A/G5617B is available in 16-pin TQFN (3X3) package.

Ordering Information

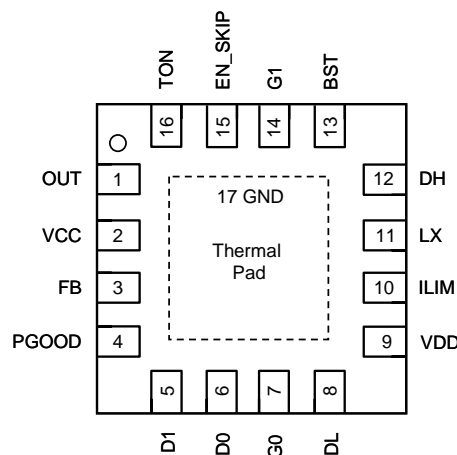
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5617AR41U	5617A	-40°C to +85°C	TQFN3X3-16
G5617BR41U	5617B	-40°C to +85°C	TQFN3X3-16

Note:R4:TQFN3X3-16

1: Bonding Code

U: Tape & Reel

Pin Configuration



G5617A/G5617B TQFN3X3-16

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