

## Features

- **Synchronous PWM Controller**
  - Wide Input Voltage Range: 4.5V~26V
  - Fixed 1.35V(DDR3), 1.2V(DDR4) Output or Adjustable from 0.75V to 3.3V
  - Adjustable Relative Constant on-time for fast dynamic response
  - Resistor Programmable Frequency
  - Soft-Off in S4/S5 States
  - Current Limit During Soft-Start
  - Lossless  $RDS_{(ON)}$  Current Sensing for Inductor Current Limit
  - Drivers Large Synchronous-Rectifier FETs
  - OVP, POK, UVP and OTP Protection
- **LDO(VTT)**
  - 1.5A Source/Sink Capability
  - Integrated Divider Tracks  $\frac{1}{2}$  VDDQ for Both VTT and VTTREF
  - $\pm 20mV$  Accuracy
  - Disable in S3 and Soft-Off in S4/S5
- **Buffered Reference Voltage(VTTREF)**
  - Low Noise 10mA Output
  - $\pm 20mV$  Accuracy
- Green Product (RoHS, Lead-Free, Halogen-Free Compliant)

## Applications

- Notebook computers
- DDR2/DDR3/DDR4 Memory Power Supply
- Microprocessor and Chipset Supplies
- SSTL18, SSTL 15 and HSTL Bus Termination

## General Description

The GS7271Q is small size chip with a relative constant on-time synchronous buck switching controller with DDR termination regulator suitable for both DDRII/III/IV memory systems.

The GS7271Q has a unique power save mode, which can save battery power supply by decreasing frequency when load current falls down below preset critical current point.

The fast dynamic transient response means that buck converter applications based on GS7271Q will provide about 100ns-order response to load while output voltage falls down or rises up. The frequency will increase or decrease to meet the change in output load with the same on time.

The integrated gate drivers feature adaptive shoot-through protection, fast signal transmission. Additional features include current limit, soft-start, thermal shutdown over-voltage and under-voltage protection and a Power Good flag.

The 1.5A source/sink LDO for VTT has fast transient response with only two 10uF of ceramic output capacitors, and the LDO supply input is available externally to reduce the total power losses.

The GS7271Q supports all the sleep state controls, in S3 state (suspend to RAM) VTT is disable and in S4/S5 (suspend to disk) VDDQ, VTT and VTTREF are soft off. The GS7271Q is available in package TQFN20-3x3.