

Features

- Adjustable relative constant on-time for fast dynamic response
- Programmable VOUT range = 0.7V~20V
- VIN range = 3V~28V
- Wide output load range: 0 to 6A
- 1% reference accuracy over load and line
- Low voltage DC current sense using low-side $R_{DS_ON_S}$ sensing or sense resistor
- Resistor programmable frequency
- Cycle-by-cycle current limit
- 3-Step current limit during Soft-start
- Over-voltage/under-voltage fault protection
- Low quiescent power dissipation
- Power good indicator
- Integrated gate drivers with fast transmission scheme
- Enable/ Power save mode option
- Over temperature protection(Non-Latch)
- TQFN24 package
- Green Product (RoHS, Lead-Free, Halogen-Free Compliant)

Applications

- Notebook computers
- PDA Supplies
- Chip/RAM Supplies

General Description

The GS9206 is small size chip with a relative constant on-time synchronous buck converter suitable for applications in notebook computers and other battery operated portable devices. Features include very wide input voltage range, high efficiency and a fast dynamic response with internal fast response scheme.

The GS9206 have 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 applications based on GS9206 will provide about 100ns-order response to load when output voltage falls down or rises up. The frequency will increase or decrease to meet the change in output load. Moreover, the GS9206 will take the same method to regulate the output voltage when input voltage changes. When transient response regulated, the controller will maintain a new steady-state operation. Both the transient response state and the new state, the GS9206 always has the same on-time.

The GS9206 is suitable for the solutions which have the output voltage between 0.7V and 20V. An external setting resistor and output voltage can set the on-time, duty-cycle and frequency for the controller. The integrated gate drivers feature adaptive shoot-through protection, fast signal transmission. Additional features include current limit, soft-start, over-voltage and under-voltage protection, a power good flag and soft discharge during shutdown.