1. General Description

G3608A is a high performance and highly integrated secondary side synchronous rectification controller used for secondary side rectification in switch mode power supply system. it can replace Schottky diode for high efficiency by connecting with an lower voltage drop N-channel MOSFET, and meet the requirement of DOE VI &COC energy efficiency.

It is suitable for multiple mode applications including discontinuous conduction mode (DCM), quasi-resonant mode (QR) and continuous conduction mode (CCM).The drain-to-source voltage of SR MOSFET is sensed to control the turn on and off of the SR MOSFET.G3608A can generate its own supply voltage for battery charging applications with potential low output voltage, and at short circuit output condition,or for high-side SR configuration.
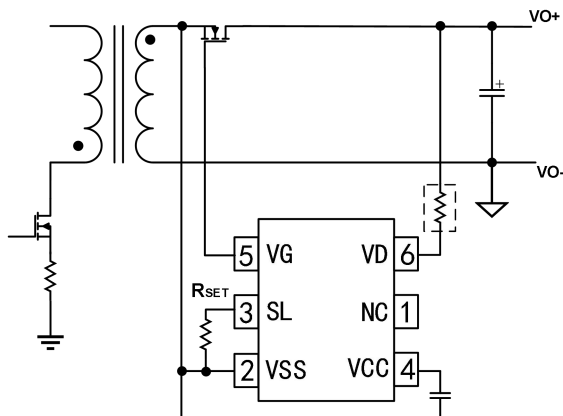
G3608A is offered in SOT23-6 package.

Features

◆ Suitable for DCM,QR and CCM
◆ Supports both High-side and Low-side Rectification
◆ Wide Output Range down to 3V
◆ Supports USB PD + PPS
◆ No need for Auxiliary Winding or external power supply
◆ Ringing Detection Prevents False Turn-on during DCM and Quasi-Resonant Operations
◆ 10nS Fast Turn-off delay and 30nS Turn-on delay
◆ Accurate secondary side MOSFET Vds sensing
◆ Anti-interference with digital isolation
◆ SOT23-6 Package Available

Applications

● USB PD Quick Chargers
● Power adapter
● Flyback Power Supplies with Very Low and/or Variable Output Voltage
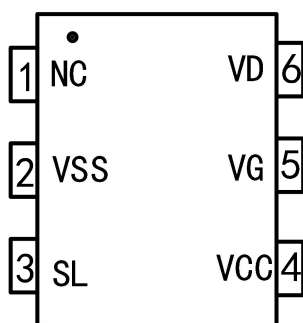
Typical Applications

2. Products Information

2.1 Pin configuration

SOT23-6 Package

Fig.1. G3608A Pin Configuration

Pin Num	Pin Name	I/O	Description
1	NC		Not connection.
2	VSS	P	Ground. VSS is also used as a MOSFET source sense reference for VD.
3	SL	P	Programming for turn-on signal slew rate detection. SL prevents the SR controller from turning on falsely by ringing below the turn-on threshold at VD in discontinuous conduction mode (DCM) and quasi-resonant mode. Any signal slower than the pre-set slew rate cannot turn on VG.
4	VCC	P	Power supply.Bypass a capacitor between VCC and VSS.
5	VG	O	Driver output for external N-channel MOSFET.
6	VD	I	MOSFET drain voltage sensing. VD is also used as the linear regulator input. A resistance of 100Ω can be placed between VD and Drain.