

NC-Cap/PSR™ (Primary Side Regulation) CV/CC Power Switch

FEATURES

- ◆ Built-in 600V Power MOSFET
- ◆ Multi-Mode Control
- ◆ Max. Frequency Clamping @ Output Short Circuit
- ◆ Proprietary NC-Cap/PSR™ (Primary Side Regulation) Control without External Compensation/Filtering Capacitor Needed
- ◆ Less than 70mW Standby Power
- ◆ $\pm 5\%$ Constant Current (CC) and Constant Voltage (CV) Regulation at Universal AC Input
- ◆ Proprietary Cable Voltage Drop Compensation in CV Mode
- ◆ Compensate for Line Voltage Variation and Transformer Inductance Tolerances
- ◆ Audio Noise Free Operation
- ◆ Pin Floating Protection
- ◆ Cycle-by-Cycle Current Limiting
- ◆ Built-in Leading Edge Blanking (LEB)
- ◆ Built-in Soft Start
- ◆ Output Over Voltage Protection
- ◆ VDD OVP & Clamp
- ◆ VDD Under Voltage Lockout (UVLO)

APPLICATIONS

- ◆ Battery chargers for cellular phones, cordless phones, PDA, digital cameras, etc
- ◆ Replaces linear transformer and RCC SMPS
- ◆ Small power adapter
- ◆ AC/DC LED lighting

GENERAL DESCRIPTION

SF5928S is a high performance, highly integrated DCM (Discontinuous Conduction Mode) Primary Side Regulation (PSR) power switch for small power converter applications. The IC can provide very tight output voltage regulation (CV) and current control (CC) performance.

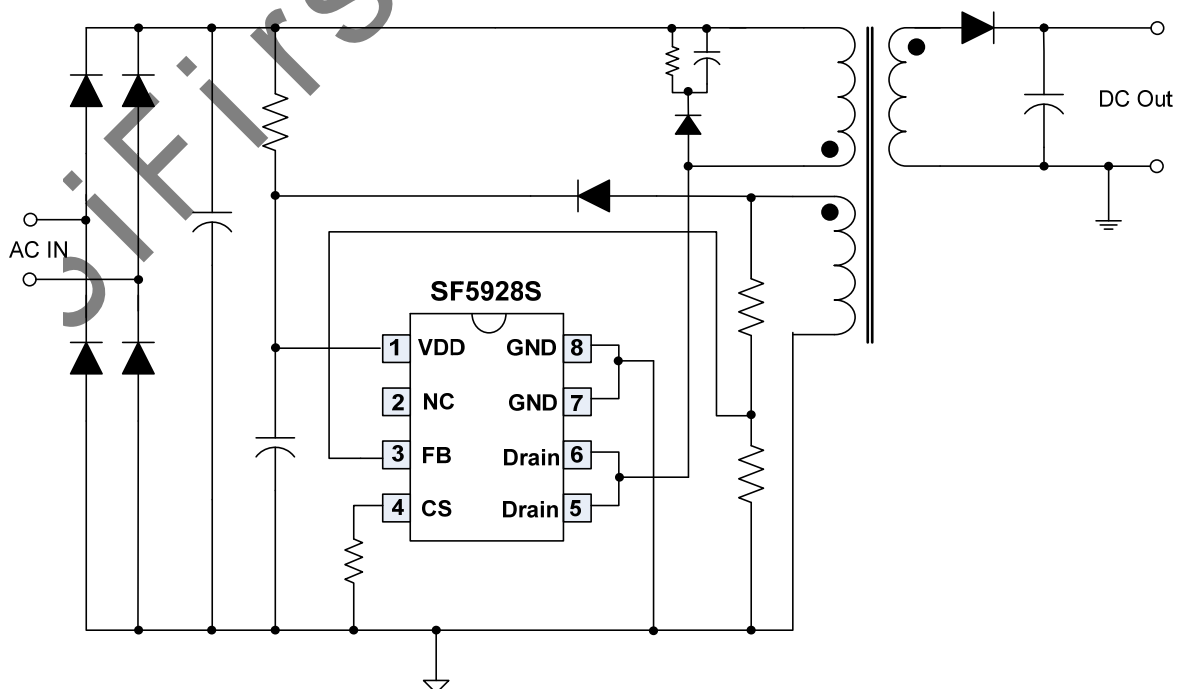
SF5928S uses **Multi Mode Control** to improve efficiency and reliability and to decrease audio noise energy @ light loadings. Around the full load, the system operates in PWM+PFM mode, which improve the system reliability. Under light load conditions, the IC operates in PFM mode to achieve excellent regulation and high efficiency, and to achieve less than 70mW standby power. SF5928S also integrates the function of "**Max. Frequency Clamping @ Output Short Circuit**" to limits power MOSFET Vds spike when output short circuits occurs.

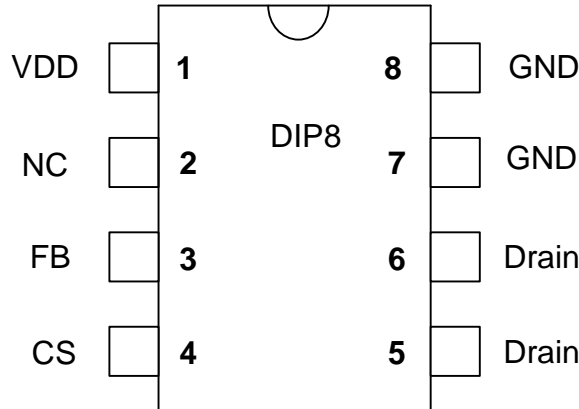
SF5928S has built-in proprietary **NC-Cap/PSR™** control for CV control, which eliminates external compensation or filtering capacitor. It has built-in cable drop compensation function, which can provide excellent CV performance. The IC also has built-in soft start function to soften the stress on the MOSFET during power on period.

SF5928S integrates functions and protections of Under Voltage Lockout (UVLO), VDD Over Voltage Protection (VDD OVP), Output Over Voltage Protection (Output OVP), Soft Start, Cycle-by-cycle Current Limiting (OCP), Pin Floating Protection, VDD Clamping.

SF5928S is available in DIP8 package.

TYPICAL APPLICATION



Pin Configuration

Ordering Information

| Part Number | Top Mark | Package | | Tape & Reel |
|-------------|-----------|---------|------|-------------|
| SF5928SDP | SF5928SDP | DIP8 | RoHs | |

Output Power Table⁽¹⁾

| Part Number | 230VAC ± 15% ⁽²⁾ | 85-265VAC |
|-------------|-----------------------------|------------------------|
| | Adapter ⁽³⁾ | Adapter ⁽³⁾ |
| SF5928S | 18W | 13W |

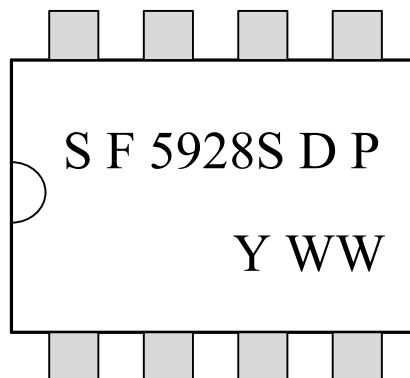
Note 1. The Max. output power is limited by junction temperature

Note 2. 230VAC or 100/115VAC with doublers

Note 3. Typical continuous power in a non-ventilated enclosed adaptor with sufficient drain pattern as a heat sink at 50°C ambient.

Comparison between SF5928S and SF5928SV

| Parameter or Function | SF5928S | SF5928SV |
|---------------------------------------|---------|----------|
| Built-in MOS Breakdown Voltage | 600V | 650V |
| Max Output Power (adaptor, 85-265VAC) | 13W | 12W |

Marking Information


YWW: Year&Week code