HV-mW™、2nd Generation Quasi-Resonant (QR-II™) PWM Power Switch

FEATURES

- **Meet EPS Level 6**
- **Built-in 600V Power MOSFET**
- **Proprietary QR-II™ Technology:**
  - **●Digital Anti-jitter for Audio Noise Free Operation**
  - **● Digital Frequency Foldback**
  - **● Digital Frequency Jittering**
- **Proprietary HV-mW™ to Achieve Less than 80mW Standby Power**
- **Multi-Mode Operation for High Efficiency**
- **12.7us Maximum On Time**
- **80KHz Maximum Frequency Limit**
- **53KHz Frequency Low Clamping in QR Mode**
- **Maximum 65% Duty Cycle**
- **Adaptive Slope Compensation for CCM Mode**
- **Built-in Soft Start Function**
- **Built-in Synchronous Slope Compensation**
- **Cycle-by-Cycle Current Limiting**
- **Leading Edge Blanking (LEB)**
- **Constant Power Limiting**
- **VDD UVLO, OVP & Clamp**

APPLICATIONS

Offline AC/DC Flyback Converter for

- **AC/DC Adaptors**
- **SMPS Power Supply**

GENERAL DESCRIPTION

SF5879 is a high performance, 2nd Generation Quasi-Resonant (QR-II™) PWM power switch for offline flyback power converter applications. The built-in proprietary **HV-mW™** technology and **QR-II™** technology with high level protection features can improve the SMPS reliability and performance.

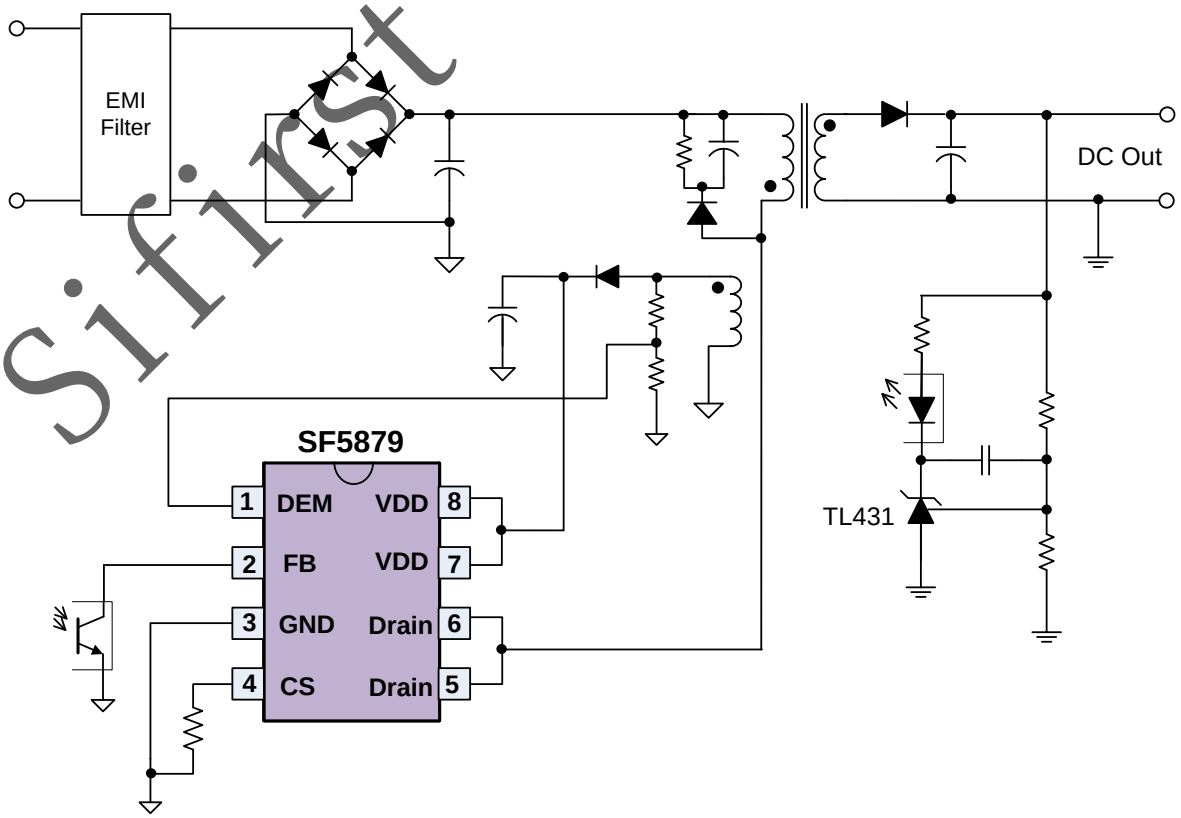
In SF5879, the "**Digital Anti-Jitter**" function can automatically select and lock a valley at a given loading, which can achieve audio noise free operation. On the other hand, the "**Digital Frequency Jittering**" function makes the system have superior EMI performance than conventional QR system.

SF5879 is a multi mode controller. When full loadings, the IC works in CCM mode or QR mode based on the AC line input. When the loading goes low, the IC enters into "**Digital Frequency Foldback**" mode to boost power conversion efficiency. When the output power is very small, the IC enters into burst mode and can achieve less than 80mW no load power.

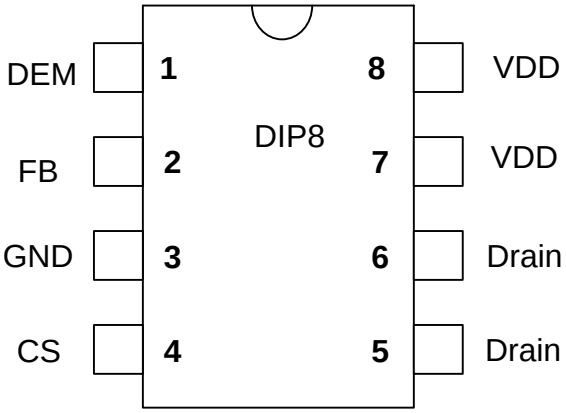
SF5879 integrates functions and protections of Under Voltage Lockout (UVLO), VDD Over Voltage Protection (VDD OVP), Output Over Voltage Protection (Output OVP), Cycle-by-cycle Current Limiting (OCP), Pin Floating Protection, Over Load Protection (OLP), Soft Start, VCC Clamping, etc. In SF5879, the protections are auto-recovery mode.

SF5879 is available in DIP8 package.

TYPICAL APPLICATION



Pin Configuration



Ordering Information

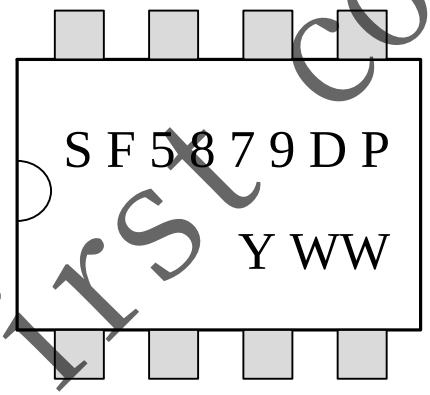
Part Number	Top Mark	Package		Tape & Reel
SF5879DP	SF5879DP	DIP8	RoHs	

Output Power Table[1]

Part Number	230VAC ± 15%[2] Adapter[3]	85-265VAC Adapter[3]
SF5879	18W	15W

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 adapter with sufficient drain pattern as a heat sink at 50°C ambient.

Marking Information



YWW: Year&Week code

Pin Description

Pin Num	Pin Name	I/O	Description
1	DEM	I	Transformer core demagnetization detection pin. This pin is also used for output over voltage protection (OVP).
2	FB	I	Voltage feedback pin. The loop regulation is achieved by connecting a photo-coupler to this pin. PWM duty cycle is generated by this pin voltage and the current sense signal at Pin 4.
3	GND	P	IC ground pin.
4	CS	I	Current sense input pin.
5-6	Drain	P	High voltage power MOSFET drain connection. This pin is also used for high voltage startup.
7-8	VDD	P	IC power supply pin.