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

FEATURES

- **Meet EPS Level 6**
- **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 50mW 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**
- **Latch Plug-off Protection**
- **Built-in Soft Start Function**
- **Pin Floating Protection**
- **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

SF5873 is a high performance, 2nd Generation Quasi-Resonant (QR-II™) PWM controller 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 SF5873, 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.

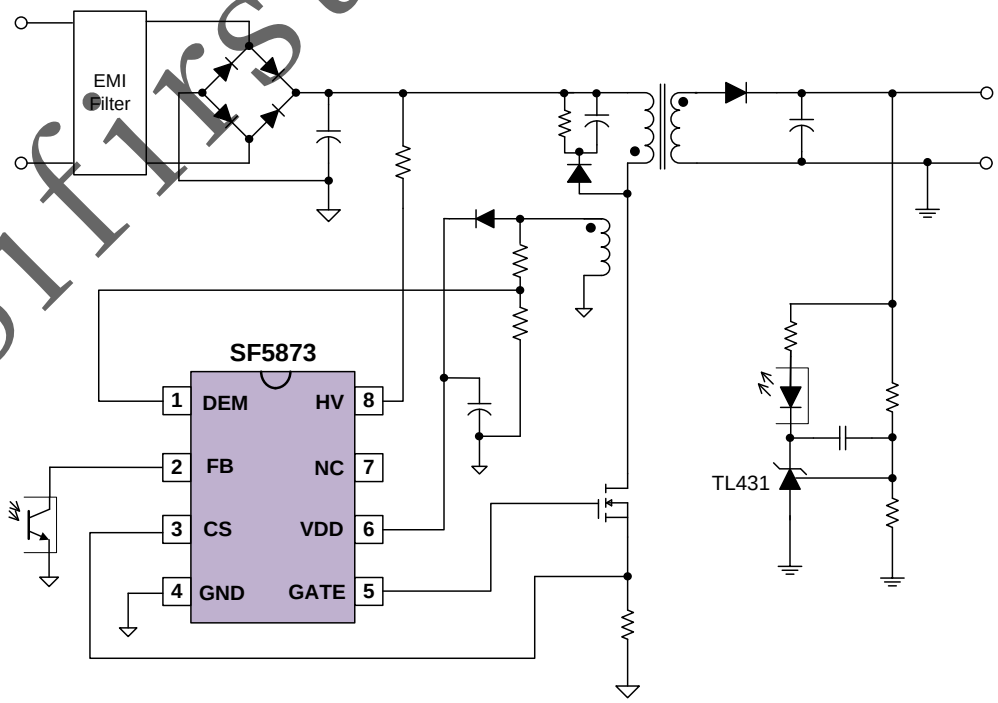
SF5873 is a multi mode controller. When full loadings, the IC works in CCM mode or QR mode based on the AC line input. When the loading goes low, the IC enters into "**Digital Frequency Foldback**" mode to boost power conversion efficiency. When the output power is very small, the IC enters into burst mode and can achieve less than 50mW no load power.

SF5873 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, Gate Clamping, etc. In SF5873, VDD OVP and Output OVP are latch mode protections, the other protections are auto-recovery mode.

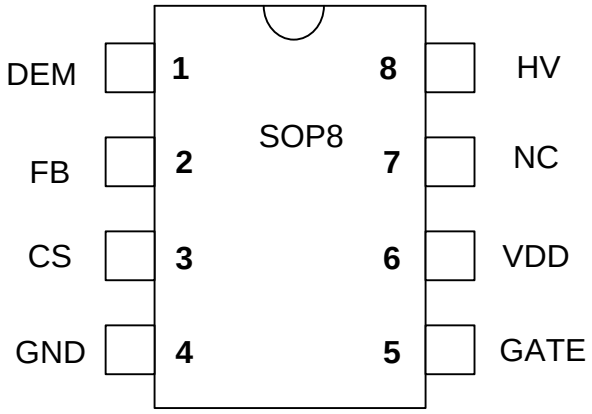
SF5873 is available in SOP8 package.

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TYPICAL APPLICATION



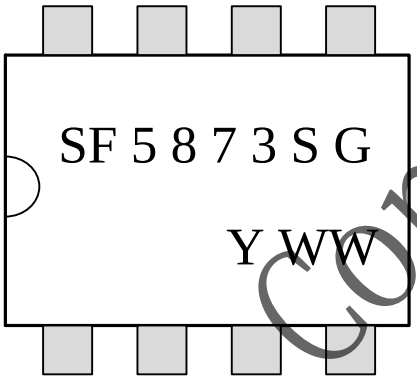
Pin Configuration



Ordering Information

Part Number	Top Mark	Package		Tape & Reel
SF5873SG	SF5580SG	SOP8	Green	
SF5873SGT	SF5580SGT	SOP8	Green	Yes

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 3.
3	CS	I	Current sense input pin.
4	GND	P	IC ground pin.
5	GATE	O	Totem-pole gate driver output to drive the external MOSFET.
6	VDD	P	IC power supply pin.
7	NC	-	No connection.
8	HV	P	This pin connects to bulk capacitor for high voltage startup.

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