

FSCQ-Series

FSCQ0565RT / FSCQ0765RT / FSCQ0965RT / FSCQ1265RT
FSCQ1465RT / FSCQ1565RT / FSCQ1565RP
Green Mode Fairchild Power Switch (FPS™)

Features

- Optimized for Quasi-Resonant Converter (QRC)
- Advanced Burst-Mode Operation for under 1W Standby Power Consumption
- Pulse-by-Pulse Current Limit
- Over Load Protection (OLP) - Auto Restart
- Over Voltage Protection (OVP) - Auto Restart
- Abnormal Over Current Protection (AOCP) - Latch
- Internal Thermal Shutdown (TSD) - Latch
- Under Voltage Lock Out (UVLO) with Hysteresis
- Low Startup Current (typical : 25uA)
- Internal High Voltage SenseFET
- Built-in Soft Start (20ms)
- Extended Quasi-Resonant Switching

Applications

- CTV
- Audio Amplifier

Related Application Notes

- AN4146 - Design Guidelines for Quasi-Resonant Converters Using FSCQ-Series Fairchild Power Switch.
- AN4140 - Transformer Design Consideration for Off-Line Flyback Converters Using Fairchild Power Switch.

Description

In general, a Quasi-Resonant Converter (QRC) shows lower EMI and higher power conversion efficiency compared to conventional hard-switched converter with a fixed switching frequency. Therefore, a QRC is well suited for noise-sensitive applications, such as color TV and audio. Each product in the FSCQ-Series contains an integrated Pulse Width Modulation (PWM) controller and a SenseFET, and is specifically designed for quasi-resonant off-line Switch Mode Power Supplies (SMPS) with minimal external components. The PWM controller includes an integrated fixed frequency oscillator, under voltage lockout, leading edge blanking (LEB), optimized gate driver, internal soft start, temperature-compensated precise current sources for a loop compensation, and self protection circuitry. Compared with a discrete MOSFET and PWM controller solution, the FSCQ-Series can reduce total cost, component count, size, and weight, while simultaneously increasing efficiency, productivity, and system reliability. These devices provide a basic platform that is well suited for cost-effective designs of quasi-resonant switching flyback converters.

OUTPUT POWER TABLE ⁽³⁾		
PRODUCT	230VAC ±15% ⁽²⁾	85-265VAC
	Open Frame ⁽¹⁾	Open Frame ⁽¹⁾
FSCQ0565RT	70W	60 W
FSCQ0765RT	100 W	85 W
FSCQ0965RT	130 W	110 W
FSCQ1265RT	170 W	140 W
FSCQ1465RT	190 W	160 W
FSCQ1565RT	210 W	170 W
FSCQ1565RP	250 W	210 W

Table 1. Maximum Output Power

Notes:

1. Maximum practical continuous power in an open frame design at 50°C ambient.
2. 230 VAC or 100/115 VAC with doubler.
3. The junction temperature can limit the maximum output power.

Typical Circuit

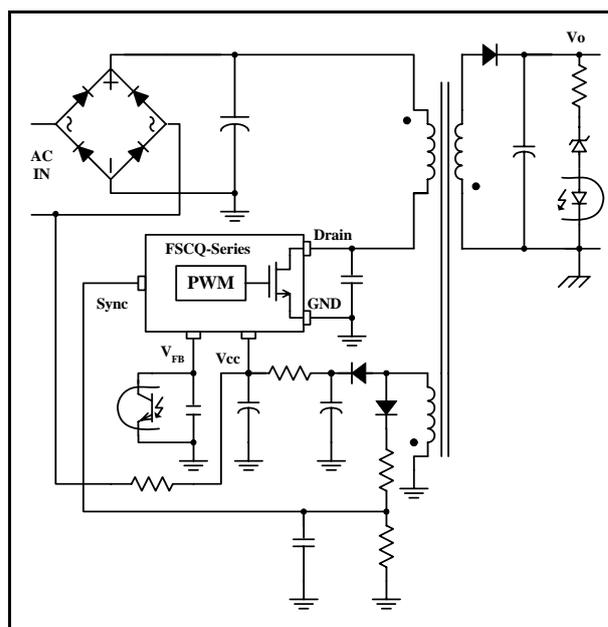


Figure 1. Typical Flyback Application

Internal Block Diagram

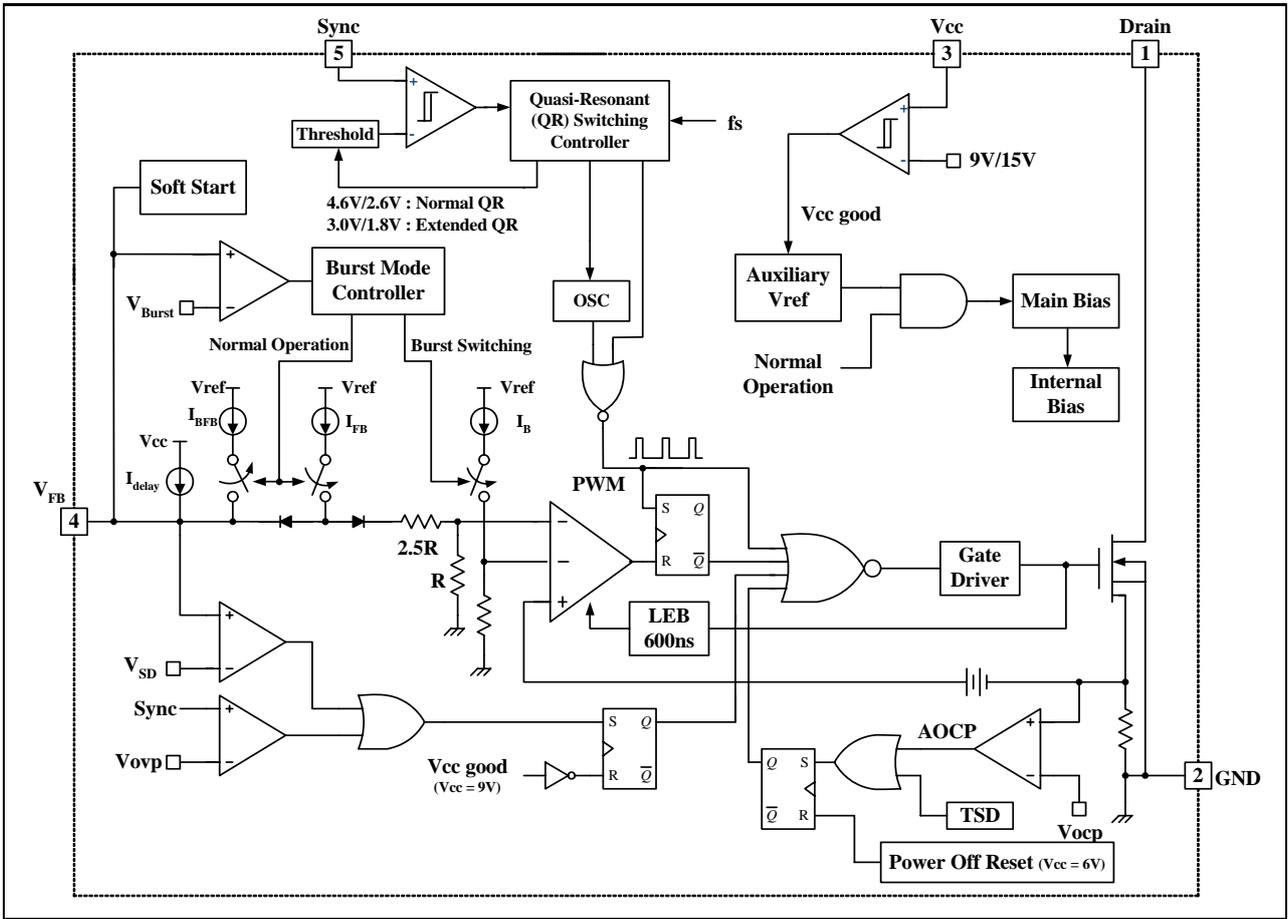


Figure 2. Functional Block Diagram of FSCQ-Series