



Working Together for a Greener Society

Future of Power Electronics and the Earth



LLC Current-resonant Off-line Switching Controller

SSC3S937



■ Description

The SSC3S937 is a controller for LLC current resonant switching power supplies, incorporating a floating drive circuit for a high-side power MOSFET. The IC includes useful functions such as standby function, automatic dead time adjustment, and capacitive mode detection. The IC achieves high efficiency, low noise and high cost-effective power supply systems with few external components.

■ Package

SOP18



■ Applications

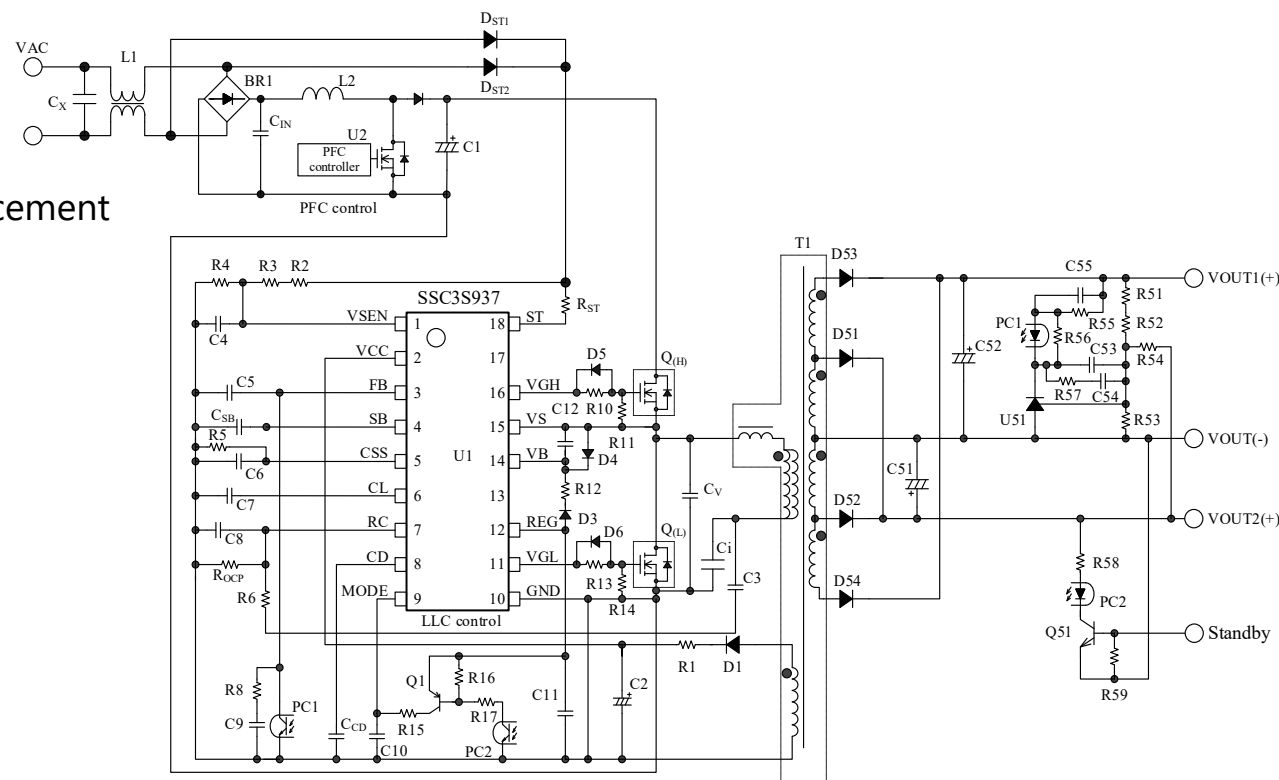
Switching power supplies for electronic devices of ≤ 300 W such as:

- Digital Appliances (e.g., Television)
- Office Automation (OA) Equipment (e.g., Server, Multifunction Printer)
- Industrial Apparatus
- Communication Facilities

■ Features

- Standby Mode Change Function by External Signal
 - Output Power at Light Load: $P_O = 150 \text{ mW}$ ($P_{IN} = 0.27 \text{ W}$)
 - Burst Operation in Standby Mode
 - Soft-on/Soft-off Function: Audible Noise Suppression Enhancement
- Soft-start Function
- Capacitive Mode Detection Function
- Reset Detection Function
- Automatic Dead Time Adjustment Function
- Built-in Startup Circuit
- X-capacitor Discharge Function (AC Input Mode)
- Input Capacitor Discharge Function (DC Input Mode)
- Protections
 - Input Voltage Protection
 - Input Overvoltage Protection (HVP): Auto-restart
 - Input Undervoltage Protection (UVP): Auto-restart
 - High-side Driver UVLO: Auto-restart
 - Overcurrent Protection (OCP): Pulse-by-pulse
 - Overload Protection (OLP): Auto-restart
 - VCC Pin Overvoltage Protection (OVP): Auto-restart
 - REG Pin Overvoltage Protection (REG_OVP): Auto-restart
 - Thermal Shutdown (TSD): Auto-restart

■ Typical Application (AC Input Mode)



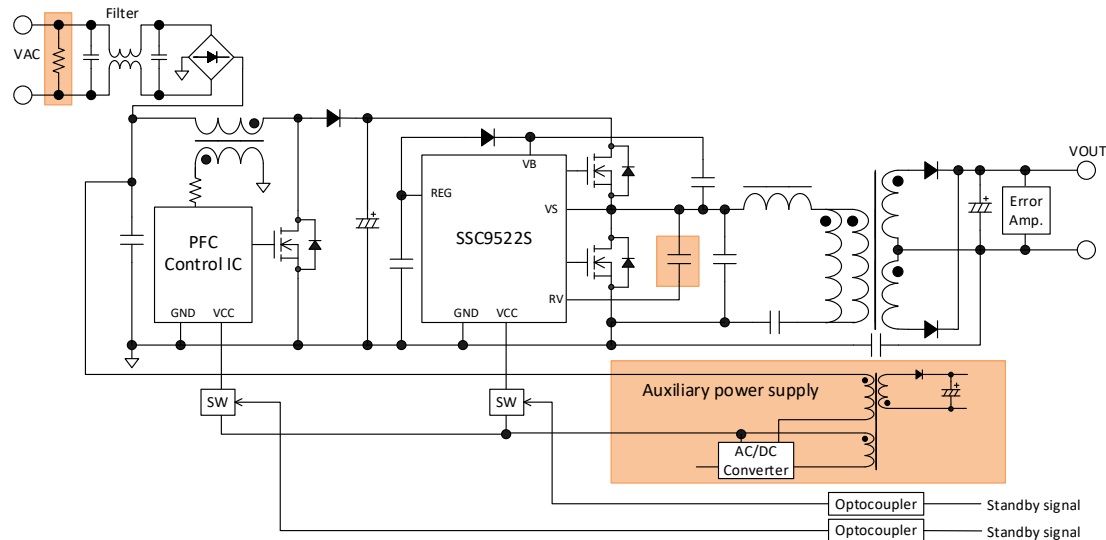
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See our selection guide for a complete list of LLC current-resonant switching power supply control ICs.

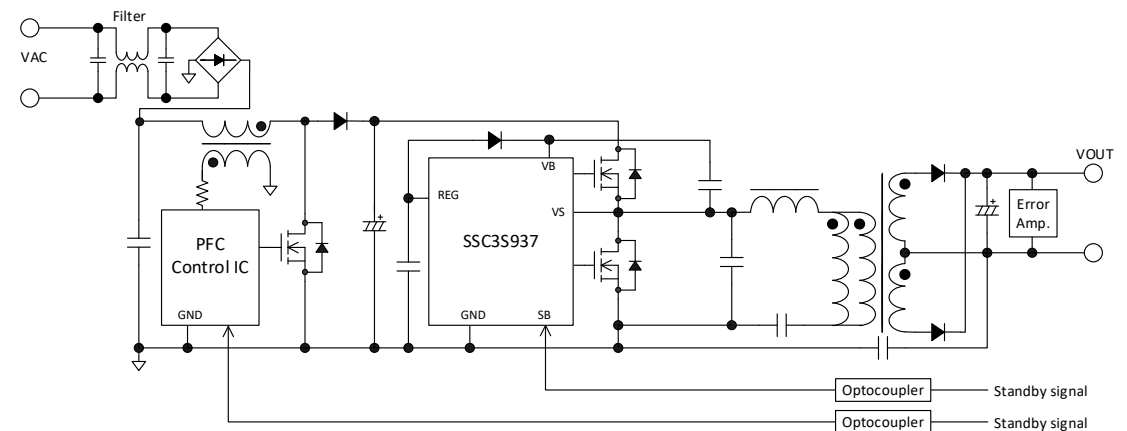
The SSC3S937 achieves high efficiency and few external components count.

- Higher efficiency at light load: No discharge resistor required by X-capacitor discharge (AC input mode)
- Standby function : No auxiliary power supply required
- Built-in capacitor for dead time detection: No high voltage capacitor required
- Realizing the power boost for output current : An expanded range of normal operation by changing the overcurrent protection detection voltage

■ Conventional



■ **SSC3S937**



Requires no X-capacitor discharge resistors, high voltage capacitors, and auxiliary power supply circuit. This results in a downsized circuit with few components!

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