

STR-W6700 Series

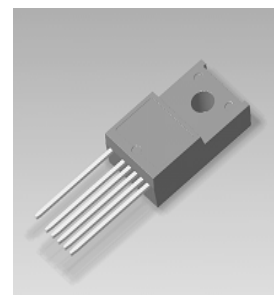


Power IC for Quasi-Resonant Type Switching Power Supply with High Efficiency and Low Noise in Full Load Range

General Descriptions

The STR-W6700 series products are power ICs for quasi-resonant type switching power supplies, incorporating a power MOSFET and a controller IC. The product achieves high efficiency and low noise power supply systems by the quasi-resonant operation and the bottom-skip quasi-resonant operation.

The STR-X6700 series products are the different package (TO-3PF) versions.



TO-220F-6

Features

Multi-Mode Control

The operation mode switching with three steps according to load conditions achieves the optimal high efficiency and low noise power supply systems across the full load range. (The confirmation of product number is necessary because some functions are different in each product.)

• In Standby (Under Standby Load Conditions):

- UVLO Intermittent Oscillation by lowering output voltage --- Switched by Standby Signal, or
- Auto Burst-Oscillation --- Switched Automatically

• Under Low to Middle Load Conditions: Bottom-Skip Quasi-Resonant Operation (Bottom-Skip QR)

• Under Middle to Rating (or Heavy) Load Conditions: Quasi-Resonant Operation (QR)

Current-Mode Control

Built-in PWM Oscillator

The PWM operates with the minimum frequency of around 22 kHz, until the quasi-resonant signal becomes valid, reduces the stress on components at startup and load-shortcd.

Soft-Start Function

Step-Drive Function, reducing switching noise

Built-in Maximum ON Time Limitation Circuit

The function limits the maximum ON time of power MOSFET, during the transitions at low input voltage, power ON/OFF.

Input Compensation at Overcurrent

The function reduces the distortion of overcurrent operation point to AC input voltage change by adding three components.

Built-in Avalanche Energy Guaranteed High-Voltage Power MOSFET

Various Protections

Overcurrent Protection (OCP) ----- Pulse-by-Pulse

Overload Protection (OLP)----- Latch Shutdown

Overvoltage Protection (OVP) ----- Latch Shutdown

Applications

Switching Power Supplies for

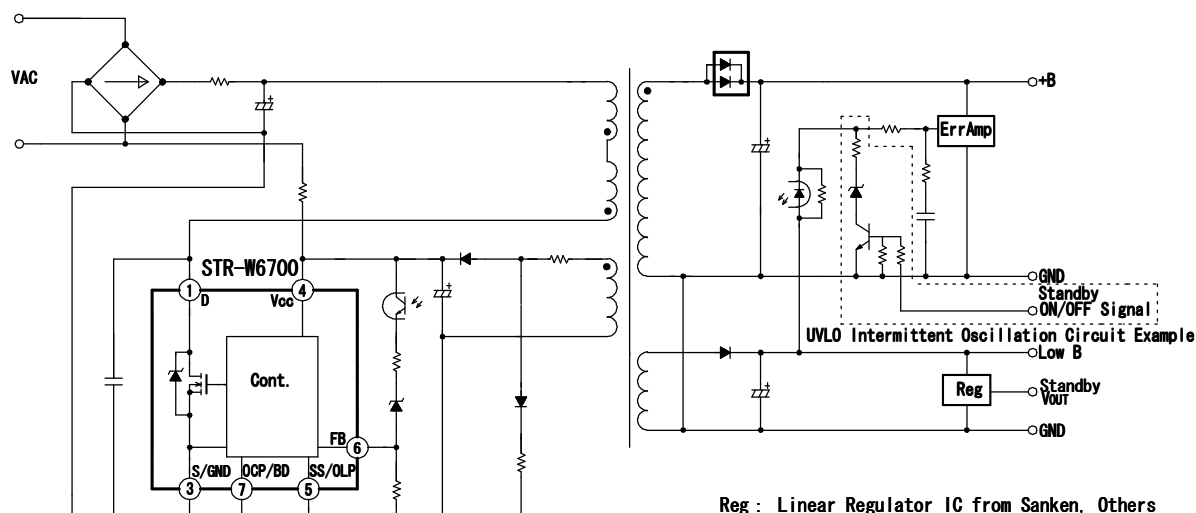
Digital Consumer Equipment; LCD-TVs, PDP-TVs, CRT-TVs, etc., Home Appliances, OA Equipments, Industry Machines, Communication Devices, Others

Product Lineup

Product No.	MOSFET V _{DSS} MIN (V)	R _{DS(ON)} MAX (Ω)	Burst- Oscillation	Bottom- Skip QR	Product No.	MOSFET V _{DSS} MIN (V)	R _{DS(ON)} MAX (Ω)	Burst- Oscillation	Bottom- Skip QR
STR-W6723N	450	1.4	N	Y	STR-W6750F	650	0.73	Y	N
STR-W6734	500	1.0	Y	Y	STR-W6756	650	0.73	Y	Y
STR-W6735	500	0.57	Y	Y	STR-W6756N	650	0.73	N	Y
STR-W6735N	500	0.57	N	Y	STR-W6765	800	1.8	Y	Y
STR-W6753	650	1.7	Y	Y	STR-W6765N	800	1.8	N	Y
STR-W6754	650	0.96	Y	Y					

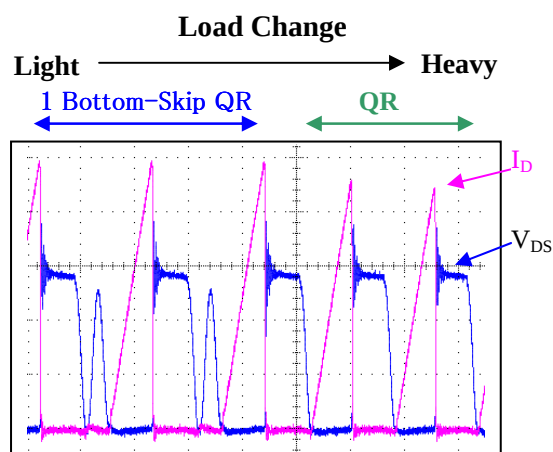
Y: Including the function N: Excluding the function

■ Typical Application Circuit

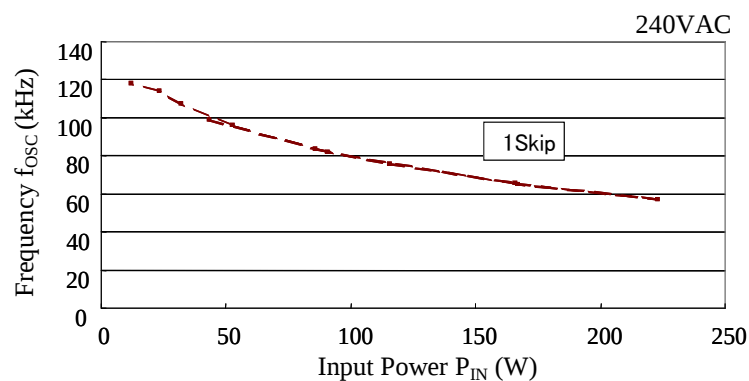
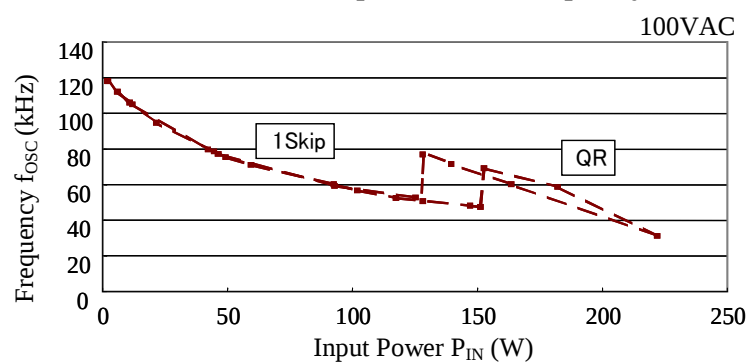


■ Typical Operation Waveforms

Transitions between Bottom-Skip QR Operation and Quasi-Resonant Operation



STR-W6700 Input Power - Frequency



Warning

- The contents in this document are subject to changes, for improvement and other purposes, without notice. Make sure that this is the latest version of the document before use.
- The operation and circuit examples in this document are provided for reference purposes only. Sanken assumes no liability for violation of industrial property, intellectual property, or other rights of Sanken or third parties, that stem from these examples.
- The user must take responsibility for considering and determining which objects the products in this document are used with.
- Although Sanken will continue to improve the quality and reliability of its products, semiconductor products, by their nature, have certain fault and failure rates. The user must take responsibility for designing and checking to secure the device and system so that a part failure may not lead to human injury, fire, damages, or other losses.
- The contents in this document must not be transcribed or copied without Sanken's written consent.