

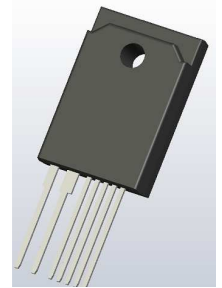
# STR-X6700 Series

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

### General Descriptions

The STR-X6700 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-W6700 series products are the different package (TO-220F) versions.



TO-3PF-7

### 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 low 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-shorted.

#### 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

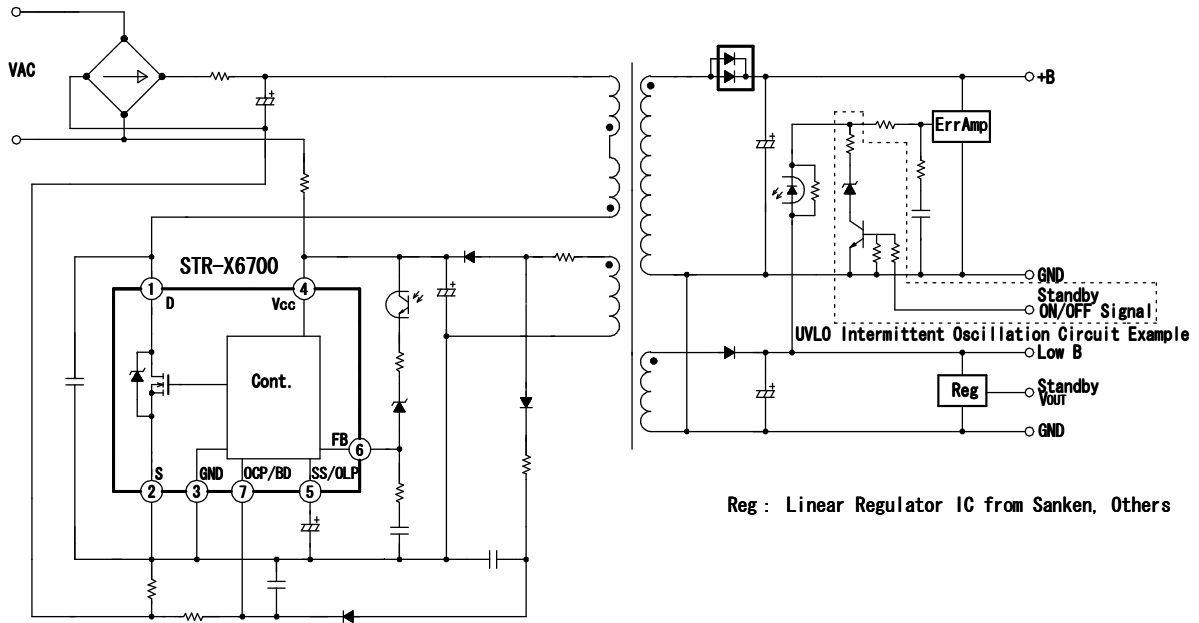
Digital Consumer Equipment; LCD-TVs, PDP-TVs, CRT-TVs, etc., Home Appliances, OA Equipments, Industry Machines, Communication Devices, Others

### Product Lineup

Product No.	MOSFET V <sub>DSS</sub> MIN (V)	R <sub>DS(ON)</sub> MAX (Ω)	Burst- Oscillation	Bottom- Skip QR	Product No.	MOSFET V <sub>DSS</sub> MIN (V)	R <sub>DS(ON)</sub> MAX (Ω)	Burst- Oscillation	Bottom- Skip QR
STR-X6729	450	0.189	N	Y	STR-X6750F	650	0.62	Y	N
STR-X6737	500	0.36	Y	Y	STR-X6759N	650	0.385	N	Y
STR-X6737M	500	0.36	N	Y	STR-X6759F	650	0.385	Y	N
STR-X6756	650	0.73	Y	Y	STR-X6759B	650	0.385	N	N
STR-X6757	650	0.62	Y	Y	STR-X6768N	800	1.0	N	Y
STR-X6757N	650	0.62	N	Y	STR-X6769	800	0.66	Y	Y
STR-X6750B	650	0.62	N	Y	STR-X6769B	800	0.66	N	N

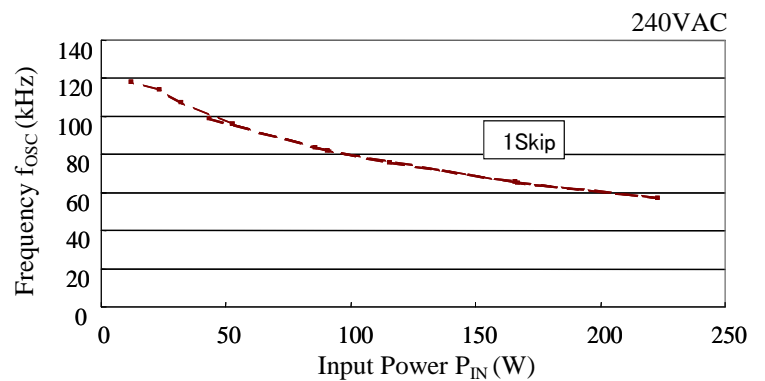
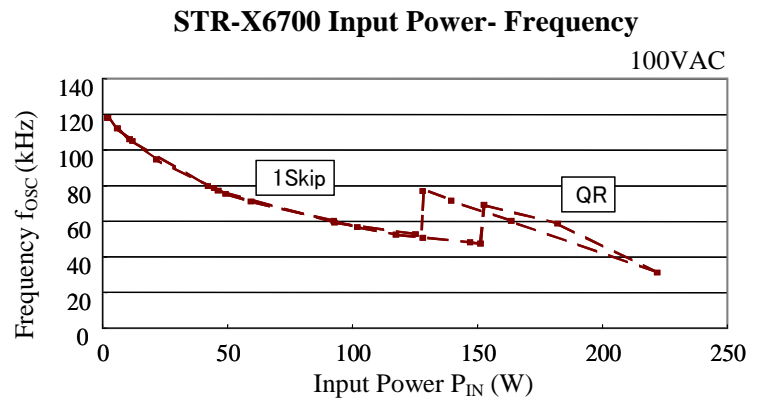
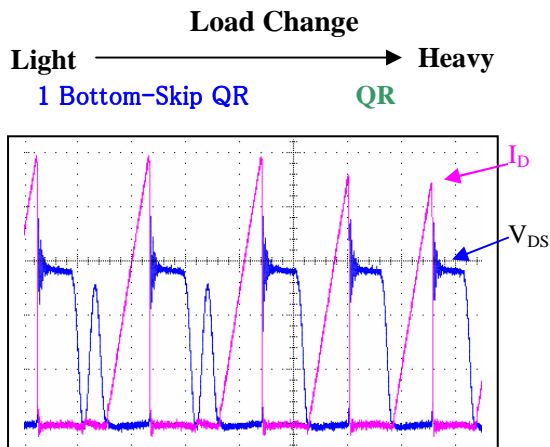
Y: Including the function    N: Excluding the function

## Typical Application Circuit



## Typical Operation Waveforms

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



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