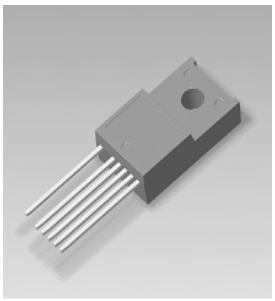
# STR-W6700 Series

## 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-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

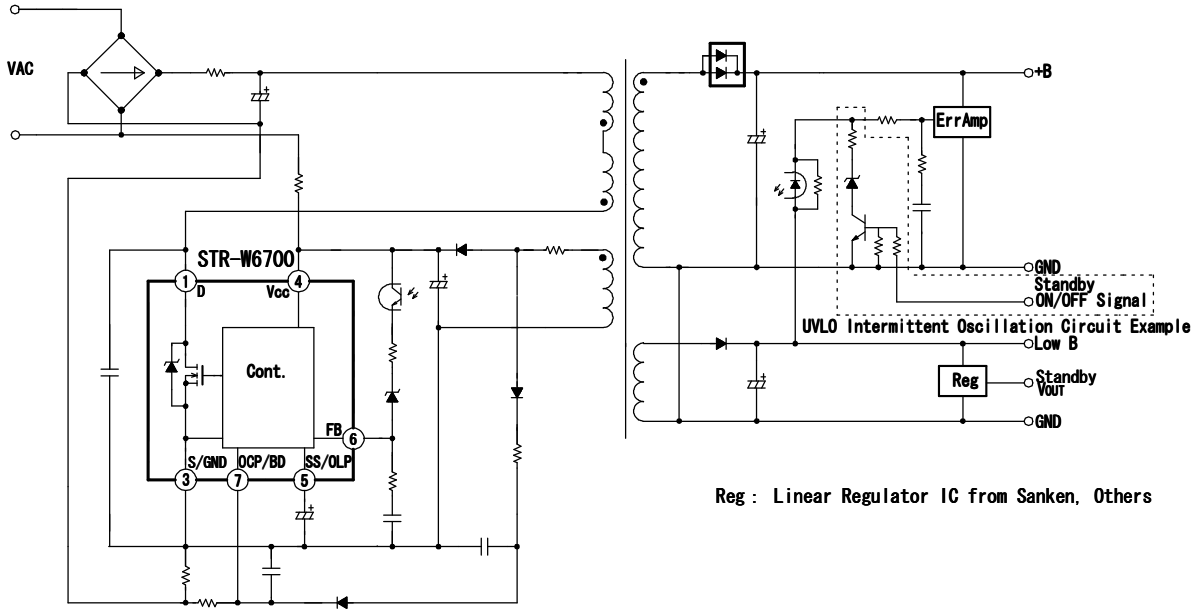
Switching Power Supplies for
Digital Consumer Equipment; LCD-TVs, PDP-TVs, CRT-TVs, etc., Home Appliances, OA Equipments, Industry Machines, Communication Devices, Others

### ■ Product Lineup

| Product No. | MOSFET $V_{DSS}$ 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

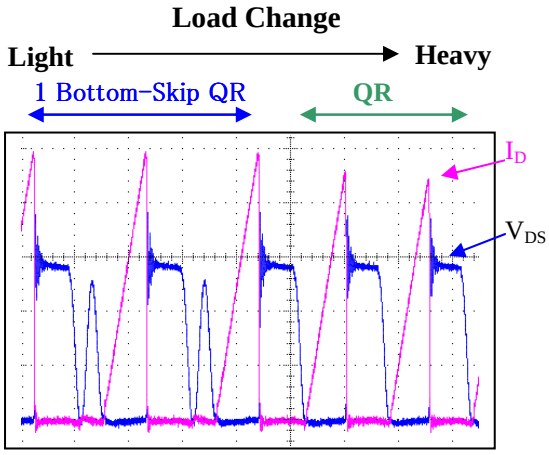
## ■ Typical Application Circuit

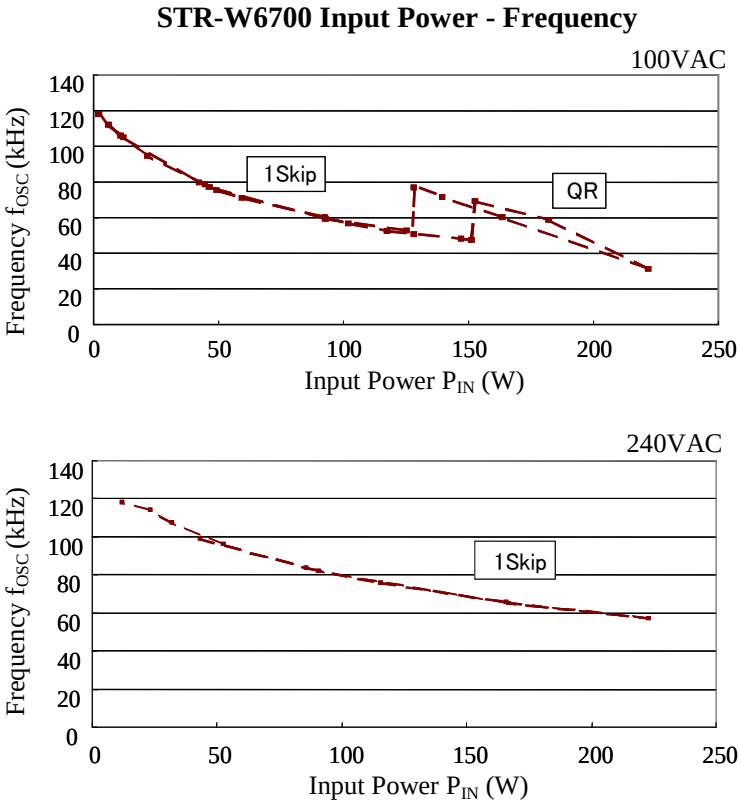



Reg : Linear Regulator IC from Sanken, Others

## ■ Typical Operation Waveforms

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





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