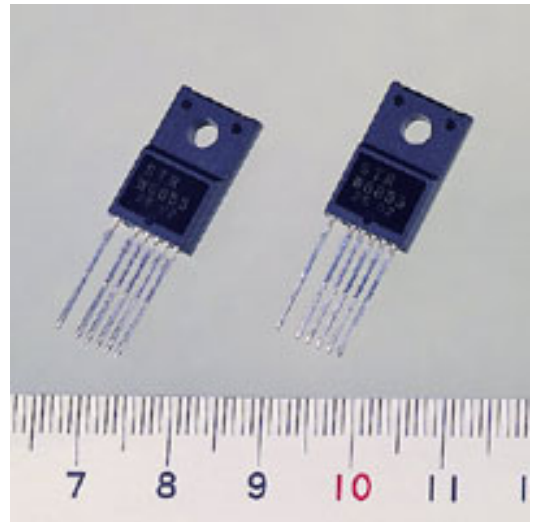


October 18, 2002

**Sanken introduces "STR-W 6800 Series ICs" for Quasi-Resonant Switch Mode Power Supply that enables high efficiency, low noise and drastic save of power consumption at the time of stand-by.**

Sanken Electronic Co., Ltd. has developed "STR-W 6800 Series ICs" for Quasi-Resonant SMPS with high efficiency and low noise that consume only one-tenth of the electric power compared with that of our conventional devices. Shipments of the new series will begin from October 25, 2002. Initially Sanken is planning to begin monthly volume production of 100,000 per month. The monthly sales volume will be increased to 500,000 by the end of 2002. The sample price is three hundred (300) yen per piece.



Recently there has been a strong demand for save of power consumption for TVs, VTRs and other electric appliances. Especially in the case of remote controlled home electric appliances, the annual stand-by power consumption to electricity all told is quite high although the absolute consumption itself is small. That is why demand for reduction of stand-by power consumption is strong these days.

Quasi-Resonant SMPS with low noise, is widely used as the video signals of AV equipments such as TV, VTR are fragile to noise. However, the conventional Quasi-Resonant SMPS has a drawback; its efficiency tends to be degraded by the high operating frequency at





## 1.9 Switch-mode Power Supply STR- W68XX

### (1) General Description

The STR-W6800 Series are thick-film ICs for Quasi-Resonant flyback SMPS with MOSFET and control built-in, featuring fewer external components, simplified circuit design, small-size and standard power supply.

"STR-W6800 Series ICs" offers three operation modes: Quasi-Resonant, Multi-Bottom Skip and Time Fix Control, thus guaranteeing high efficiency in all loading areas by means of the automatic change-over of the operation modes.

QR---- Quasi-Resonant operation at the time of heavy load

MBS---- Multi-Bottom Skip operation at the time of medium load for preventing oscillating frequency rising up and fixing operating frequency

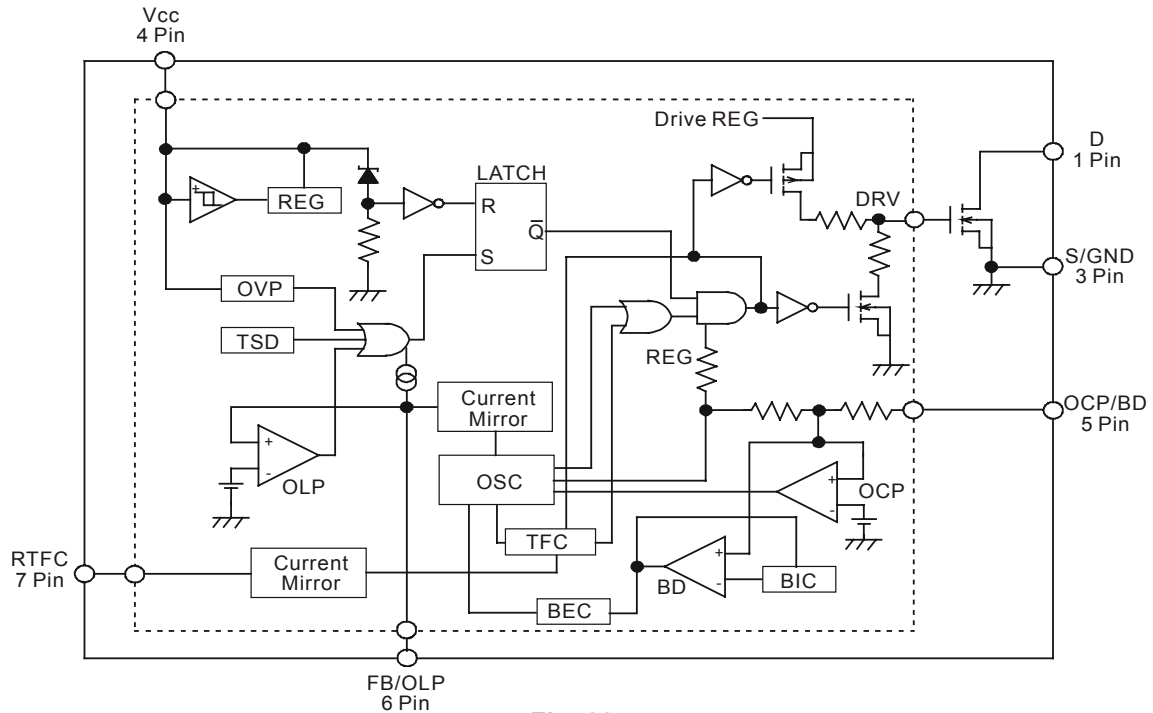
TFC---- Time Fix Control at the time of light load such as stand-by load

By adopting chip-on-chip construction, even small package can deal with big power.

### (2) Features

- Seven-pin small SIP style package FM207 (generally called TO220), affording dielectric isolation
- Guarantees space of 1.8mm between high voltage pin and other pins, thus high voltage MOSFET built-in allowed
- Offers low startup current by employing BCD-Process
- Automatic change-over of QR and MBS operations  
With MOSFET turn-on at the bottom of VDS, "STR-W 6800 Series ICs" offers high efficiency and low noise at the wide areas from the heavy load to stand-by load and fixed operating frequency, and enables SMPS to become smaller.
- TFC operation delivers low-power standby mode for fixing turn-on time, enabling external components to adjust turn-on time.
- Avalanche breakdown energy-guaranteed and high damage-resistance power MOSFET  
By guaranteeing avalanche breakdown energy of built-in power MOSFET, "STR-W 6800 Series ICs" simplifies design of absorption circuit of surge voltage without VDSS residual considered during design.
- MOSFET fixed voltage drive circuit built in
- Various protection functions
  - Pulse-by-pulse over-current protection
  - Over-voltage protection →lockout
  - Over-load protection →lockout
  - Thermal protection →lockout (not for STR-W6854/6)

**(3) Block Diagram**



**Fig. 22**

**(4) Pinning**

**Table 11**

| Pin No. | Symbol | Name   | Function Description    |
|---------|--------|--|-------------------------|
| 1       | D      | Source for MOSFET                                  |                         |
| 2       | NC     |  |                         |
| 3       | S/GND  | Source/GND for MOSFET                              | Source/ GND for Control |
| 4       | Vcc    | Supply voltage                                     |                         |
| 5       | OCP/BD | Over-current protection detection/Bottom detection |                         |
| 6       | FB/OLP | Feedback/Over-load protection detection            |                         |
| 7       | RTFC   | Time Fix Control regulation                        |                         |

**(5) Refer to Table 18 about Functions and Data of the IC's Pins.**