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## STR-A6000 Series

## Power IC for PWM Type Switching Power Supply with Low Noise and Low Standby Power

## ■ General Descriptions

The STR-A6000 series products are power ICs for switching power supplies, incorporating a power MOSFET and a current-mode type PWM controller IC. The low standby power is accomplished by the automatic switching between the PWM operation in normal operation and the burst-oscillation under light load conditions. The product achieves high cost-performance power supply systems with few external components.

## - Features

- Current-Mode Type PWM Control

- Built-in Random Switching Function

The function reduces the EMI noise and enables a simplified (low-cost) EMI filter, by the slight- random-change of PMW frequency $f_{\text {osc }}$.

- Auto-Standby Function: The burst-oscillation enables the low standby power. Input Power $\mathrm{P}_{\text {IN }}<25 \mathrm{~mW}$ at no load
- Built-in Startup Circuit, enabling low power consumption
- Brown-In / Brown-Out Function

The function enables the oscillation start/stop by externally rated input voltage and makes protections at low input voltage.

- Overcurrent Protection (OCP) with Built-in Input Compensation Circuit:

The protection has less AC input voltage dependency.

- Overload Protection (OLP) with Built-in Delay Timer
- High Speed Latch Release Function

The function releases the latch immediately at AC supply OFF, after the latch protection operation.

- Bias-Assist Function, reducing Operating $\mathrm{V}_{\mathrm{CC}}$ voltage drop

The function improves the startup operation and makes a low $\mathrm{V}_{\mathrm{CC}}$ capacitor applicable.

- Leading Edge Blanking Function
- Slope Compensation Function
- Built-in Avalanche Energy Guaranteed High-Voltage Power MOSFET
- Protections

| ection (OLP) $\qquad$ Auto-Restart rotection (OVP) $\qquad$ Latch Shutdo down Protection (TSD) $\qquad$ Latch Shutdo |
| :---: |
|  |  |
|  |  |
|  |  |

## Applications

- Battery Chargers; Mobile Phones, Digital Cameras, Camcorders, Electric Shavers, Emergency/Inducement Lights etc.
- Standby Power Supplies; LCD-TVs, PDP-TVs, Desk-Top PCs, LBPs, Audio Equipment, etc.
- Small SMPSs; Ink Jet Printers, BD/DVD Players, CD Players, Set-Top-Boxes, etc.
- Auxiliary Power Supplies for Controllers; Air Conditioners, Refrigerators, Washing Machines, Dish Washers, etc

Product Lineup

| Product No | Operation Frequency (kHz) | $\begin{gathered} \text { MOSFET } \\ \mathrm{V}_{\text {DSS }} \text { MIN } \\ (\mathrm{V}) \\ \hline \end{gathered}$ | $\mathrm{R}_{\mathrm{DS}(\mathrm{ON})}$ MAX <br> ( $\Omega$ | $\begin{gathered} \mathrm{P}_{\text {OUT }} \text { (Note 1) } \\ \text { 230VAC/Universal } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| STR-A6051M | 67 | 650 | 3.95 | 16W / 12W |
| STR-A6052M |  |  | 2.8 | 20W / 16W |
| STR-A6053M |  |  | 1.9 | 24W / 20W |
| STR-A6059H | 100 |  | 6.0 | 10W / 8W |
| STR-A6061H |  | 700 | 3.95 | 13W/11W |
| STR-A6061HD |  |  | 3.95 | 13W/11W |
| STR-A6062H |  |  | 2.8 | 15W / 13W |
| STR-A6069H |  |  | 6.0 | 10W / 8W |
| STR-A6079M | 67 | 800 | 19.2 | 8W / 5W |

Note 1: The maximum output power is derived from thermal specifications. The actual output power may be available around $120-140 \%$ of the above values, respectively, but may be limited by ON duty setting on transformer design or lower output voltage.

## Typical Application Circuit



## Typical Electrical Characteristics

STR-A6079M Efficiency \& Input Power at Standby


- Although Sanken will continue to improve the quality and reliability of its products,

