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_{OSC}.
- Auto-Standby Function: The burst-oscillation enables the low standby power. Input Power $P_{IN} < 25$ 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 V_{CC} voltage drop
- The function improves the startup operation and makes a low V_{CC} capacitor applicable.
- Leading Edge Blanking Function
- Slope Compensation Function
- Built-in Avalanche Energy Guaranteed High-Voltage Power MOSFET
- Protections
 - Overcurrent Protection (OCP)------ Pulse-by-Pulse
 - Overload Protection (OLP) ------ Auto-Restart
 - Overvoltage Protection (OVP)------ Latch Shutdown
 - Thermal Shutdown Protection (TSD) ------ Latch Shutdown

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	MOSFET	R _{DS(ON)}	P _{OUT} (Note 1)
	Frequency	V _{DSS} MIN	MAX	230VAC/Universal
	(kHz)	(V)	(Ω)	
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.

DIP-8





Typical Application Circuit



Typical Electrical Characteristics STR-A6079M Efficiency & Input Power at Standby



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