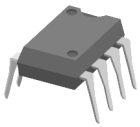
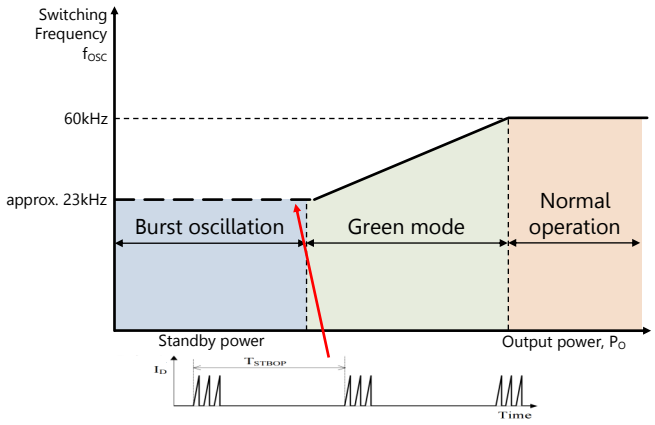
STR5A450 Series

Off-Line PWM Controllers with Integrated Power MOSFET
Non-Isolated Buck Converter



Package:
DIP8

The STR5A450 Series are power ICs for switching power supplies, incorporating a MOSFET and a current mode PWM controller IC for non-isolated the buck converter and the inverting converter.
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.



Selectable OCP Limit
The external current sense resistor (R_{OCP}) enables the circuit to be optimised for the actual load. Ensuring the OCP function operates correctly, giving the advantage of not only protecting the device, but also not overstressing other circuit components.

Fast Feedback Response
The device has been designed to supply the Vcc pin from the output feedback via D1/C4 above. In this way a fast transient response can be attained by this separation of the feedback circuit and Vcc supply.

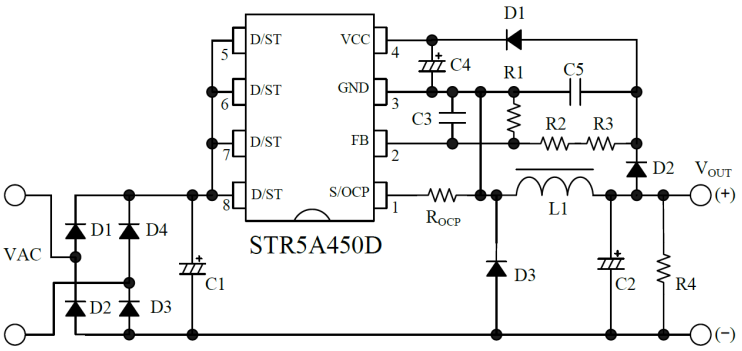
GREEN Mode
Auto Standby Function automatically changes the oscillation mode to green mode or burst oscillation mode, as the output load decreases. During green mode the oscillation frequency is reduced as the load decreases, At the lower threshold, approx. 23kHz the mode is switch to Burst where the switching operation is stopped during a constant period.

BURST Oscillation Mode
In the burst oscillation mode, the switching operation is stopped during a constant period. Thus, the switching losses are reduced, and the power efficiency is improved. As shown the burst oscillation mode consists of the switching period and the non-switching period. The oscillation frequency during the switching period is the minimum frequency of about 23 kHz.

Features
- Auto Standby Function
- Operation:
  - Normal Operation ---------- PWM Mode
  - Light Load Operation ---------- Green Mode
  - Standby ---------- Burst Oscillation Mode
- Build-in Start-up Function (reducing power consumption at standby operation, shortening the start -up time)
- Current Mode Type PWM Control
- Build-in Error Amplifier for Phase Compensation
- Random Switching Function
- Leading Edge Blanking Function
- Soft Start Function
- Protection functions:
  - Overcurrent Protection (OCP): adjusted by an external current detection resistor, including OCP input compensation function.
  - Overload Protection (OLP): Auto-restart.
  - Overvoltage Protection (OVP): Auto-restart.
  - Thermal Shutdown with hysteresis (TSD): Auto-restart.

Products	RDS (ON) (max.)	IOUT(MAX)* (Universal, open frame, VOUT = 24 V)	Package
STR5A451D	4.0 Ω	0.7 A	DIP8
STR5A453D	1.9 Ω	0.9 A	

* The output power is actual continues current that is measured at 50 °C ambient. The peak output current can be 120 to 140 % of the value stated here. Thermal design affects the output current. It may be less than the value stated here.



Applications
- White goods
- Auxiliary power supply (lighting equipment with microcomputer, etc.)
- Power supply for motor control (actuator, etc.)
- Telecommunication equipment (convertible from 48VDC to 15VDC)
- Other switch mode power supplies, SMPS

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