

AT401

Synchronous Buck Power Supply Controller



Immense Advance Tech.

FEATURES

- Programmable V_{OUT} Range=0.5- V_{CCA}
- V_{BAT} Range=1.8V-25V
- Constant On-time for Fast Dynamic Response
- Function Soft-start
- Over-voltage/Under-Voltage Fault Over Temperature Protection
- Power Saving Mode
- DC Current Sense Using Low-side RDS(ON) Sensing or Sense Resistor
- Extra Low Gate Drivers Integrated
- Power Good
- 10 μ A Shutdown Current
- Very Low Operation Current
- Output Soft Discharge Upon Shutdown
- Resistor Programmable Frequency

APPLICATION

- Notebook Computers
- Microprocessor/Peripheral Supplies
- LCD Monitors/TVs
- High Density DC/DC Conversion

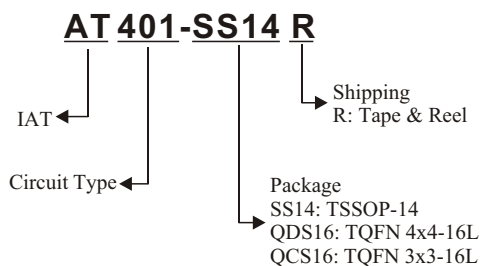
DESCRIPTION

The AT401 is a synchronous buck PWM controller with constant on-time control scheme. Its tiny package (TQFN) is suitable for use in notebook computers. Features include high efficiency and a fast dynamic response with no minimum on-time. Its excellent transient response allows AT401 based solutions only require less output capacitance than fixed frequency converters.

The output voltage can be adjusted from 0.5V to V_{CCA} . A frequency setting resistor sets the on-time for the controller. The integrated gate drivers feature adaptive shoot-through protection and soft-switching to improve power efficiency. Additional features include digital soft-start, cycle-by-cycle current limit, over-voltage and under-voltage protection, over temperature protection, Power Good output and soft discharge upon shutdown.

The switching frequency is constant until a step-in load or line voltage occurs. This frequency will increase or decrease to counter the change in load or input voltage. After the transient event, the controller frequency will return to steady-state operation. At light loads, Power save Mode enables the AT401 to skip switching cycles for better efficiency.

ORDERING INFORMATION



PIN CONFIGURATIONS

