



New Product Announcement

AP3301

AP3301 Quasi-Resonant PWM Controller Provides High Efficiency Across all Loads

AP3301 is a peak-current control Quasi-Resonant (QR) PWM controller optimized for high performance, low standby power and cost-effective offline flyback power supplies.

The AP3301 has multiple modes of operation to minimize power losses dependent on load.

1. Fixed frequency CCM PWM:

With heavy or increasing output loads the AP3301 operates in Continuous Conduction (CCM) Mode with a fixed switching frequency of 62kHz; this optimizes power conversion efficiency.

2. QR mode: At medium loads, AP3301 enters valley lock QR mode with frequency fold-back to improve system efficiency and EMI performance. The maximum switching frequency (about 120kHz) is set to clamp the QR frequency to improve efficiency.

3. Burst Mode:

At no- or light-load, AP3301 enters burst mode to minimize standby power consumption. The minimum switching frequency (about 20kHz) is set to avoid audible noise.

The AP3301 includes comprehensive protection features such as cycle-by-cycle current limit (OCP), V_{CC} Overvoltage Protection (VOVP), internal Overtemperature Protection (OTP) and Overload Protection (OLP).

AP3301 has additional output overvoltage protection (SOVP) and Brown-out protection (BNO) to enhance system reliability.



The Diodes Advantage

The AP3301 is a high-performance, and cost-effective AC-DC solution for portable consumer applications which need to pass DOE6/COC Tier2.

- **Multiple Modes of Operation: 62kHz CCM PWM Mode, QR-Mode and Burst Mode**
Optimizes efficiency across all load levels
- **Active Frequency Dithering in 62kHz CCM PWM and QR modes**
Reduces EMI emission
- **Adjustable OCP Line Compensation**
Making OCP balance more flexible
- **Overcurrent Protection, VCC Overvoltage Protection, Internal Overtemperature Protection, Overload Protection**
Increases system reliability and robustness
- **Output Overvoltage Protection (SOVP)**
Precise output OVP protection which improves the OVP performance
- **AC Input Brown-Out Protection(BNO)**
BNO protects system from damage due to ultra low line condition

Applications

- Switching AC-DC adapter
- ATX/BTX auxiliary power
- Set-Top Box (STB) power supply
- Open-frame switching power supply

