

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} Overoltage 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

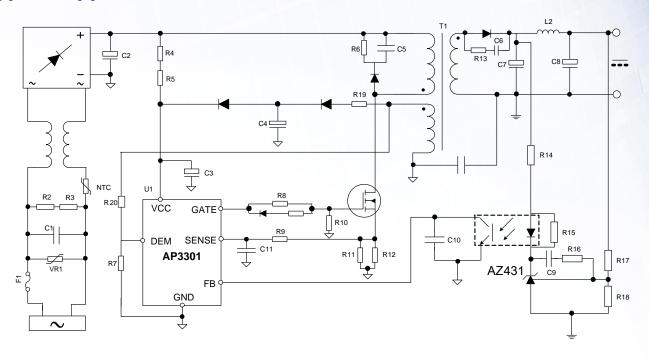
- Switching AC-DC adapter
- ATX/BTX auxiliary power
- Set-Top Box (STB) power supply
- Open-frame switching power supply



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Typical Application Schematic



Dodes' Quasi-Resonant PWM Controllers

	Part Number	HV Start- Up Circuit	Startup Current (µA)	UVLO Threshold on/off (V)	Gate Output Current (mA)	PWM Oscillation Frequency (kHz)	DEM PIN			OLP &			
							SOVP	SUVP	VOVP	SOCP	BNO	LOVP	Package
	AP3301	No	1	15.8/7.6	350	62	Auto- recover	NC	Auto- recover	Auto- recover	Auto- recover	NC	SOT26

Family web page Datasheet:

http://www.diodes.com/catalog/Offline_PWM_Controllers_146/http://diodes.com/datasheets/AP3301.pdf