# New Product Announcement

# AP3129

## Multi-Mode PWM Controller with Light Load, High Efficiency, and Peak Power Mode for Offline Power Supplies

The AP3129 is a multi-mode peak-current PWM controller with light load, high efficiency, and peak power mode for high-performance offline power supplies.

The device enters a proprietary burst mode at light loads (10%) to achieve light load efficiencies above 90%, and enables power rails for IoT devices with audible-noise elimination and always-on wireless connections such as smart speakers in standby mode.

The AP3129's peak power mode allows transient peak powers up to 200% of nominal ratings without additional design cost or size increase.

An internal piecewise linear line compensation ensures constant output power limit over the entire universal line voltage range.

The AP3129 offers a comprehensive protection feature set with auto-recovery, including:

- *Secondary-winding short-protection*
- *$V_{CC}$ overvoltage protection (VOVP)*
- *Line overvoltage protection (LOVP)*
- *Overload protection (OLP)*
- *Pin-fault protection*
- *Brown-in/out protection (BNI/BNO)*
- *Secondary side overvoltage (SOVP) and undervoltage (SUVP) protection*

The AP3129 is packaged in the SOT26 (Type CJ).




## The DIODES Advantage

**The AP3129 is a multi-mode PWM controller with light load, high efficiency, and peak power mode for always-on equipment that requires high peak power capability.**

- **Multi-Mode Operation with QR/CCM/Green/Burst Mode**
  Improves efficiency and eliminates audible noise
- **Proprietary Burst Mode at Light Loads (10%) for >90% Efficiency**
  Allows IoT devices with "always on" wireless connections to meet the latest efficiency requirements
- **2x-Nominal Peak Power Mode**
  Supports transient overload conditions without additional design cost or size increase
- **Built-In Piecewise Linear Line Compensation**
  Provides constant output power limit over the entire universal line voltage range
- **Comprehensive Protection Coverage with Auto-Recovery**
  Ensures robust and reliable offline power supplies

## Applications

- Smart speakers
- Set-top box power supplies
- TV/monitor standby power
- AC-DC adaptors

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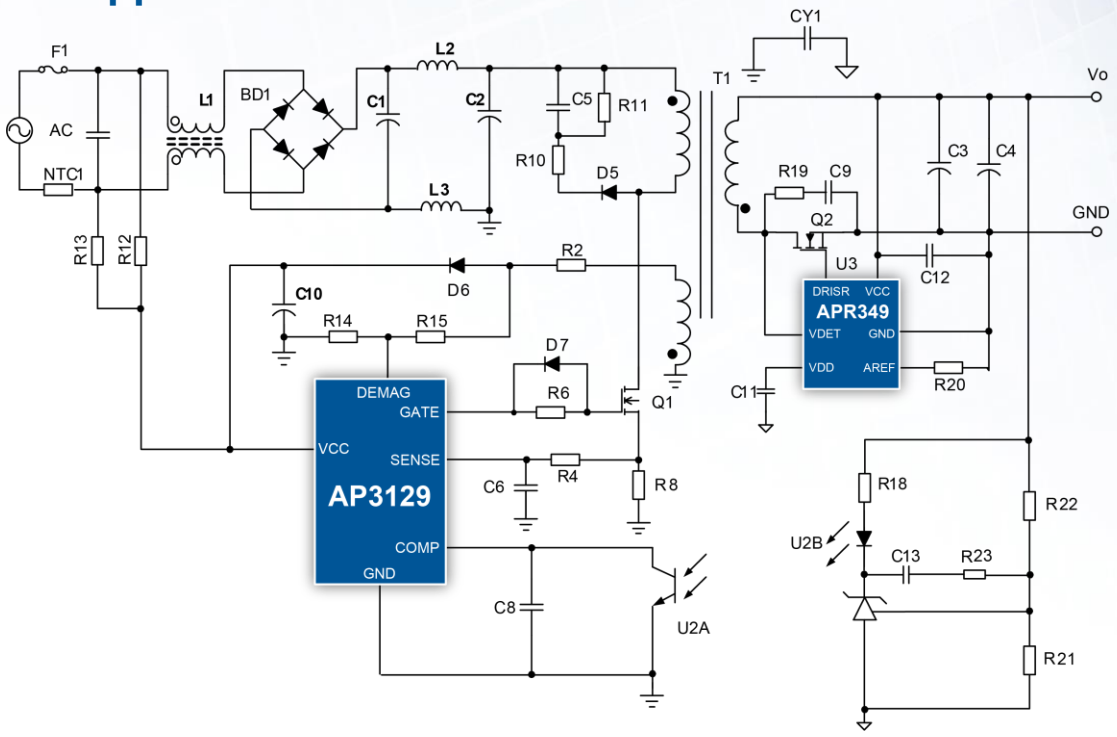
## Typical Application




*The APR349 is a secondary-side synchronous-rectification MOSFET driver optimized to co-work with the AP3129 for higher efficiency.*

## PWM Controller with Light Load, High Efficiency, and Peak Power Mode

| Part Number | Operation Mode | MAX $V_{CC}$ | UVLO Threshold On/Off | Gate Output Current | Maximum Switching Frequency | Brown-Out Protection (BNO) | Line Overvoltage Protection (LOVP) | Package |
|---|---|---|---|---|---|---|---|---|
| | | V | V | A | kHz | | | |
| AP3129 | QR/CCM | 32 | 18 / 6.3 | -0.6 | 65 (CCM mode) / 120 (Peak Load) | Auto-Recovery | Auto-Recovery | SOT26 (Type CJ) |

## Ordering Information

| Orderable Part Number | Compliance (Only Automotive Supports PPAP) | Package | Marking ID | Moisture Sensitivity | Packing | |
|---|---|---|---|---|---|---|
| | | | | | Quantity | Carrier |
| AP3129W6-7 | Standard | SOT26 (Type CJ) | B4 | MSL-3 | 3,000 | Tape & Reel |