



New Product Announcement

AR2003FV

High Performance Active/Synchronous Rectification Controller

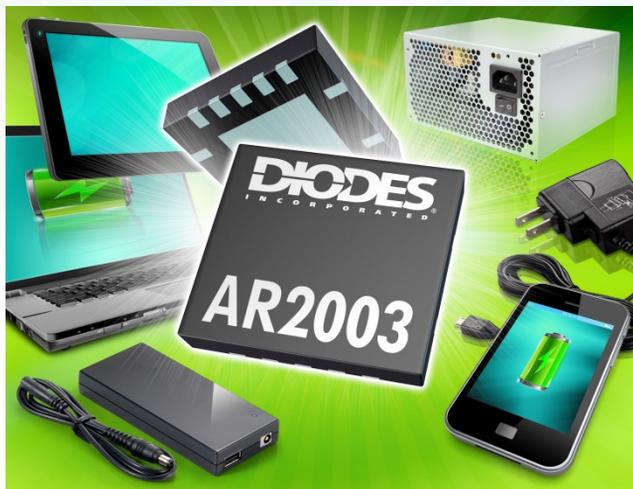
The AR2003FV is an active/synchronous rectification controller. It provides output voltage from 4.5V to 21V.

Using internal drain-to-source voltage sensing, the AR2003FV is ideally suited for fly-back, QR-resonant, LLC-resonant and other AC-DC power conversion topology.

The SFB-pin eliminates the need for an external feedback resistor when the output voltage is at either 5V or 12V. Intelligent features embedded are the Minimum OFF-time (T_{OFF}) and Minimum ON-time (T_{ON}). They blank out the noise generated during the ON and OFF phases of the external power MOSFET.

In addition, detection of light-load and no-load are included to improved the overall system efficiency. Other features to improve system integrity and robustness are: under-voltage lock-out (UVLO), SYNC for CCM operation, low turn-OFF threshold voltage for improved efficiency.

The small foot-print of the AR2003FV also makes it ideal for applications where the real estate is at a premium.



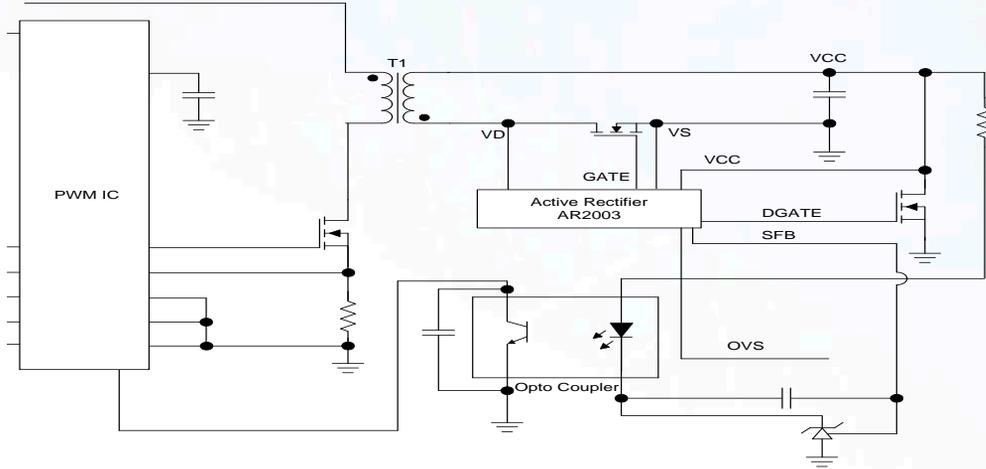
The Diodes' Advantage

- **Short turn-ON delay, high efficiency**
AR2003 controls the external power MOSFETs with optimized T_{OFF} and T_{ON} timing to achieve high power efficiency
- **Built-in discharge & voltage feedback, high integration**
Elimination of external voltage comparator allows for a much reduced BOM in the end applications
- **Embedded over-voltage protection, high reliability**
With all the built-in performance and fault handling features, AR2003 provides best-in-class AC-DC power conversion solution

Applications

- USB power adaptor
- AC-DC battery charger
- Switched-mode power supply
- Power Board in CE, telecom, computing appliances

Typical Application Circuit



Product Portfolio

| Part Number | Supply Voltage V_{CC} (V) | Quiescent Current $I_{CC(ON)}$ (mA) | Drain Voltage V_D (V) | Mode of Operation | Switching Frequency F_{SW} (KHz) | Turn-ON Delay Time $T_{D(ON)}$ (ns) | Gate Turn-OFF Threshold Voltage $V_{THOFF(HV)}$ (mV) | Turn-Off Delay Time $T_{D(OFF)}$ (ns) | Gate Source Current I_{SOURCE} (A) | Gate Sink Current I_{SINK} (A) | Package Outline |
|-------------|--------------------------------|--|----------------------------|-------------------|---------------------------------------|--|---|--|---|-------------------------------------|-----------------|
| AR2003FV | 4.5-21 | 1.5 | 200 | CCM DCM QR | 600 | 30 | -4 | 30 | 1.5 | 1.2 | V-QFN3535-14 |

To find out more information,

Product page: http://diodes.com/catalog/synchronous_controller_193/

Datasheet: <http://diodes.com/datasheets/AR2003FV.pdf>

Ordering Information

| Product | Marking Info. | Reel Size (inches) | Tape Width (mm) | Quantity per reel |
|-------------|-------------------|--------------------|-----------------|-------------------|
| AR2003FV-13 | AR2003 YY WW X | 13 | 12 | 3,000 |