



# New Product Announcement

AP43771  
AP39303  
APR34709

## 18W Solution for USB PD 3.0 PPS and QC 4/4+

The combination of the AP39303, AP43771, and APR34709 provides a highly integrated and efficient 18W solution to USB PD 3.0 and QC 4/4+.

The AP43771 is a USB Type-C® Power Delivery PD 3.0 PPS decoder dedicated to power source applications with legacy capability. It is compliant with USB Type-C specification Rev 1.2 and USB power delivery (PD) specification Rev 3.0 V 1.1 (USB PD 3.0 PPS Silicon Compliance Certification: TID – 11090028). It also passes QC 4/4+ Compliance Certification by GRL (Report Number QC2019040851).

The AP39303 has built-in quasi-resonant (QR) PWM controller and a 1.4Ω 700V MOSFET. An integrated 120V  $V_{CC}$  LDO supports wide operating output voltage and a <30mW standby power.

The APR34709 is a secondary-side rectifier combo-IC, that combines a 60V/8Ω MOSFET and a synchronous rectification (SR) driver circuit. It supports DCM and quasi-resonant flyback topologies.

*USB Type-C is a registered trademark of USB Implementers Forum.*



### DIODES Advantage

**AP43771+AP39303+APR34709 delivers high-integration, cost-effective 18W USB PD/QC4+ solutions for portable and consumer applications.**

- **AP43771 Decoder with both OTP and MTP ROM**  
Supports a cost-effective and flexible programming mode:  
One-Time-Programmable ROM for main firmware  
Multi-Time-Programmable ROM for user configuration data
- **AP39303 Quasi-Resonant Switcher with Internal 120V LDO to Regulate  $V_{CC}$**   
Supports a wider range of output applications, reducing BOM quantity and simplifying system design
- **APR34709 Integrates a Pulse Linear Regulator**  
Supports operating at Constant Current (CC) mode in which the system output voltage can drop as low as 2V. This is good for PPS applications where the lowest voltage is 3.3V.

### Applications

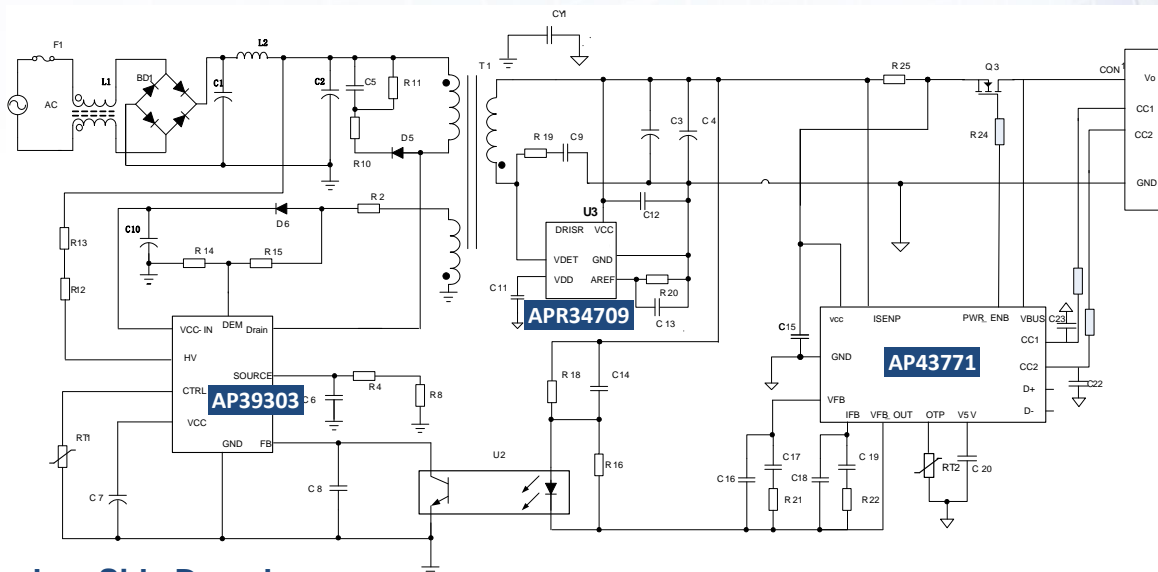
- USB PD
- Rapid Charger
- General AC/DC Adaptor



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## Typical USB PD 3.0 Solution



### Secondary Side Decoder

| Part Number | MAX V <sub>CC</sub> (V) | Operating Current (μA) | Protocol Compatible | Current Sense Reference (5V/9V/12V) | UVLO Voltage | Package      |
|-------------|-------------------------|------------------------|---------------------|-------------------------------------|--------------|--------------|
| AP43771     | 24                      | 3300                   | PD3.0/QC4+          | Programmable                        | 2.7V         | W-DFN3030-14 |

### Quasi-Resonant PWM Switcher

| Part Number | HV Start-Up Circuit | Startup Current (μA) | UVLO Threshold On/Off (V) | Gate Output Current (mA) | Maximum Frequency (kHz) | Package |
|-------------|---------------------|----------------------|---------------------------|--------------------------|-------------------------|---------|
| AP39303     | Yes                 | 1                    | 15.8/7.6                  | 350                      | 120                     | HSOP-16 |

### Synchronous Rectification Solutions

| Part Number | V <sub>CC</sub> MAX (V) | Operating Current (μA) | Drain Rating (V) | MOSFET R <sub>DS(ON)</sub> (mΩ) | Package |
|-------------|-------------------------|------------------------|------------------|---------------------------------|---------|
| APR34709    | 28                      | 150                    | 60               | 8                               | SO-8EP  |

| Device        | Packaging    | Quantity | Datasheet   |
|---------------|--------------|----------|---|
| AP39303S16-13 | HSOP-16      | 4000     | <a href="https://www.diodes.com/assets/Datasheets/AP39303.pdf">https://www.diodes.com/assets/Datasheets/AP39303.pdf</a>   |
| APR34709SP-13 | SO-8EP       | 4000     | <a href="https://www.diodes.com/assets/Datasheets/APR34709.pdf">https://www.diodes.com/assets/Datasheets/APR34709.pdf</a> |
| AP43771FBZ-13 | W-DFN3030-14 | 3000     | <a href="https://www.diodes.com/assets/Datasheets/AP43771.pdf">https://www.diodes.com/assets/Datasheets/AP43771.pdf</a>   |