2A Slew-Rate Controlled, High-Side Load Switch with True Reverse Current Blocking Improves System Reliability

The AP22913 is a 2A slew-rate controlled load switch with true reverse-current blocking (TRCB). The device is designed for high-side, load-switching applications, with a typical $R_{\text{DS(ON)}}$ of 54mΩ (at 5V), which reduces the voltage drop across the device, improving power dissipation and system performance.

The AP22913’s TRCB eliminates reverse currents flowing from output to input, which could be an issue in USB applications where the load is externally powered or the rails have large capacitance.

The slew-rate control and TRCB mitigate inrush and reverse currents, allowing the designer to select capacitors best suited for their application.

The AP22913 is available in both chip-scale X1-WLB0909-4 and standard SOT26 packages.

**DIODES Advantage**

- **Wide Input Voltage Range: 1.4V to 5.5V with Low On-Resistance:**
  - Provides low-voltage drop in USB, I/O, and core rail, high-side switch applications

- **Truly Reverse Current Block (TRCB) Protection**
  - Prevents unwanted current flow from output to input, which otherwise could damage the system or peripheral

- **Automatic $V_{\text{OUT}}$ Discharge Resistor when Disabled**
  - Discharges any output capacitor ensuring output rail starts in a known state

- **Ultra-Low Quiescent Current 1µA**
  - Minimal battery drain in portable equipment

- **Small WLB0909-4 Package Form-Factor and Industry-Standard SOT26 Package for Application Flexibility**
  - <1mm² footprint for high-density portable applications
  - SOT26 supports performance upgrades from standard USB power switches

**Applications**

- Mobile Device and Smart Phones
- Portable Media Devices
- Wearable Devices
- Advanced Notebook, UMPC, & MID
- Portable Medical Devices
- GPS and Navigation Equipment
New Product Announcement

AP22913

Typical Application Circuit

```
VIN

VOUT

AP22913

ON

GND

CIN

1μF

COUT

0.1μF~1μF

VIN

ON GND

VOUT

VIN VOUT

CIN

1μF

COUT

0.1μF~1μF
```

Product Portfolio

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Maximum Continuous Output Current</th>
<th>Maximum Current Limit</th>
<th>Enable Logic (Active)</th>
<th>Minimum Operating Voltage</th>
<th>Maximum Operating Voltage</th>
<th>Quiescent Current @3.6V RDS(ON) @ Vin = 50V</th>
<th>Output Discharge FET On-resistance</th>
<th>Truly Reverse Current Block (TRCB)</th>
<th>Package Outlines</th>
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</thead>
<tbody>
<tr>
<td>AP22913CN4-7</td>
<td>2.0</td>
<td>2.5</td>
<td>High</td>
<td>1.4</td>
<td>5.5</td>
<td>0.7</td>
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<td>120</td>
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<tr>
<td>AP22913W6-7</td>
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<td>2.5</td>
<td>High</td>
<td>1.4</td>
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<td>65</td>
<td>150</td>
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For more information:
AP22913: https://www.diodes.com/part/AP22913

Ordering Information

<table>
<thead>
<tr>
<th>Device</th>
<th>Package Code</th>
<th>Packaging</th>
<th>Package Marking Info.</th>
<th>Reel Size</th>
<th>Tape Width</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>AP2913CN4-7</td>
<td>CN4</td>
<td>X1-WLB0909-4</td>
<td>XX Y W X</td>
<td>7”</td>
<td>8mm</td>
<td>3000</td>
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<tr>
<td>AP22913W6-7</td>
<td>W6</td>
<td>SOT26</td>
<td>XX Y W X</td>
<td>7”</td>
<td>8mm</td>
<td>3000</td>
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