2A Adaptive COT Synchronous DC/DC Buck Converter

The AP65251 is an adaptive constant on-time (aCOT) mode synchronous buck converter providing high efficiency and excellent transient response. The AP65251 incorporates a control algorithm that improve efficiency at light loads.

The aCOT control scheme handles wide input to output voltage ratios and requires minimal external component count. The AP65251 could seamlessly transition between continuous conduction mode, CCM, at high loading and discontinuous conduction mode, DCM, when the inductor current is less than 0A for high efficiency.

The AP65251 switching frequency is fixed at 500kHz and also features UVLO, OTP and OCP to protect the circuit.

The AP65251 is available in TSOT26 package providing a high power density leaded solution.

The Diodes Advantage

- High efficiency synchronous DC-DC Buck converter across all output powers in TSOT26 covering wide range of POL applications
- 500kHz Fixed frequency aCOT converter with HLLE
  Improves transient response with increased efficiency in light-load conditions
- Multiple Protection Levels
  - Overcurrent Protection
  - Overvoltage Protection
  - Thermal Shutdown
  - UVLO
  Improves robustness of circuit and prevents pre-mature failure
- Small footprint leaded TSOT26 Package
  Saves PCB spacing and cost in an industry Standard pin-out

Applications

- Game Consoles
- TV and Monitors
- Set-top Box
- Network Systems
- Distributed Power Systems
- Home Audio
- Consumer Electronics
- Green Electronics
New Product Announcement
AP65251

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Efficiency

 transient Response

Ordering information

<table>
<thead>
<tr>
<th>Device</th>
<th>Packaging</th>
<th>Reel Size</th>
<th>Quantity</th>
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<tbody>
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<td>AP65251WU-7</td>
<td>TSOT-26</td>
<td>7”</td>
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Product Portfolio

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<th>Part #</th>
<th>Min. Input Voltage (V)</th>
<th>Max. Input Voltage (V)</th>
<th>Output Voltage (V)</th>
<th>Output Current (A)</th>
<th>Frequency (kHz)</th>
<th>Internal Vref (V)</th>
<th>Efficiency (%)</th>
<th>Control Architecture</th>
<th>Quiescent Current (mA)</th>
<th>Operating Ambient Temp Range (°C)</th>
<th>Enable Pin</th>
<th>Current Limit</th>
<th>Adjustable Output Voltage</th>
<th>Undervoltage Lockout</th>
<th>Programmable Soft Start</th>
<th>Power Good</th>
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