AP3785T is a high-performance AC-DC power supply controller for battery charger and adapter applications. It can meet the less than 10mW standby power for “Super Star” charger criteria.

AP3785T uses Pulse Frequency Modulation (PFM) for discontinuous conduction mode (DCM) flyback power supplies.

AP3785T provides accurate constant voltage (CV), constant current (CC) and outstanding dynamic performance without requiring an opto-coupler. It also eliminates the need of loop compensation circuitry while maintaining stability.

AP3785T is equipped with a cable drop compensation function to meet various cables with different lengths and gauges and an adjustable line voltage compensation function.

AP3785T has internal over-temperature protection for itself, and also provides dedicated pin for external over temperature protection.

AP3785T is available in SO8 package.

The Diodes Advantage

- **Primary Side Control**
  - Eliminate Opto-coupler

- **10mW No-load Input Power**
  - Ultra low standby power

- **Vcs Jitter**
  - Reduces system EMI

- **Semi-Valley Turn on**
  - For higher efficiency and better EMI

- **Multi Protections: OVP & OTP & SCP**
  - System safety protection

- **External Adjustable Cable Compensation**
  - To compensate voltage drop on cable

Applications

- Charger/adapter for portable applications
Typical Application Schematic

Product Portfolio

<table>
<thead>
<tr>
<th>Part Number</th>
<th>BJT/MOSFET Integrated</th>
<th>Vcc Max (V)</th>
<th>Startup Current (μA)</th>
<th>Operating Current (μA)</th>
<th>UVLO Threshold on/off (V)</th>
<th>Power Rating (W)</th>
<th>Standby Power (mW)</th>
<th>Cable Compensation</th>
<th>Package Outline</th>
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<tbody>
<tr>
<td>AP3785T</td>
<td>NA</td>
<td>30</td>
<td>0.2</td>
<td>500</td>
<td>13/5.9</td>
<td>15W</td>
<td>10</td>
<td>ADJ</td>
<td>SO8</td>
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Ordering Information

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<tr>
<th>Package</th>
<th>Temperature Range</th>
<th>Cable Compensation Voltage</th>
<th>Part Number</th>
<th>Marking ID</th>
<th>Packing</th>
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<tbody>
<tr>
<td>SO8</td>
<td>-40 to +150°C</td>
<td>ADJ</td>
<td>AP3785TMTR-G1</td>
<td>3785TM-G1</td>
<td>4,000/Tape &amp; Reel</td>
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