The AL3065 is a high efficiency boost controller with 4-string current sources for driving LED backlight.

The current of 4 strings is simply programmed from 20mA to 400mA with an external resistor. The current match between any strings is ±1.5%.

The AL3065 can support both PWM/DC input to analog dimming and direct PWM dimming; the dimming mode can be set in applications.

The protection features include soft-start, cycle by cycle current limit, UVLO, programmable OVP, OTP, open/short LED protection, VOUT Short/ Schottky Diode Open Protection and Schottky, Diode/Inductor Short-Circuit Protection.

The AL3065 is used to drive TV/Monitor LCD panel backlight, and DC-DC boost LED

The Diodes Advantage

The AL3065 provides a simple cost effective solution with minimal external components for TV and Monitor backlight.

- **Input Voltage Range:** 4.5V to 33V
  - Operates from 5V, 12V and 24V rails

- **Drives 4 LED strings at 250mA per string, 400mA Pulse Current**
  - Can drive multi-channels and up to 4 strings; the 400mA pulse current capability can be used in 3D panel TVs

- **The operating frequency can be adjusted from 0.1MHz to 1MHz**
  - Supports flexible operating frequency to choose suitable inductor and EMI solution

- **High LED current precision (±3%) and channel matching**
  - Guarantees the consistency of the panel brightness

- **Supports both Analog and Direct PWM (10,000:1) Dimming Controls**
  - Versatile and wide dimming range for large brightness variations

- **Robust protections**
  - Built-in soft-start, UVLO, programmable OVP, OCP, OTP, open/short LED protection, VOUT Short/Schottky Diode Open Protection and Schottky Diode/Inductor Short-Circuit Protection

Applications

- TV/Monitor LCD panel backlight
- DC-DC boost LED Lighting
Simple cost-effective solution for TV and Monitor Backlight

Typical Application: TV 4-channel LED backlight

Diodes TV and Monitor Backlight

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Min. Input Voltage</th>
<th>Max. Input Voltage</th>
<th>LED Channel Number</th>
<th>LED Channel Voltage</th>
<th>LED Channel Current</th>
<th>LED Frequency</th>
<th>LED Dimming control</th>
<th>Operating temp range</th>
<th>Package Outline</th>
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<tbody>
<tr>
<td>AL3022</td>
<td>4 V</td>
<td>18 V</td>
<td>1</td>
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<td>140 kHz</td>
<td>Y</td>
<td>-40 ~ 85</td>
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<td>AP3064</td>
<td>4.5 V</td>
<td>33 V</td>
<td>1-4</td>
<td>100</td>
<td>220 mA</td>
<td>8 kHz</td>
<td>N</td>
<td>-40 ~ 85</td>
<td>SO-16</td>
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<tr>
<td>AL3065</td>
<td>4.5 V</td>
<td>33 V</td>
<td>1-4</td>
<td>100</td>
<td>400 mA</td>
<td>100-1000 kHz</td>
<td>Y</td>
<td>-40 ~ 85</td>
<td>SO-16</td>
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<tr>
<td>AP3041</td>
<td>5 V</td>
<td>27 V</td>
<td>1</td>
<td>External MOSFET</td>
<td>100-500 mA</td>
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<td>-40 ~ 85</td>
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Ordering Information

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<thead>
<tr>
<th>Part Number</th>
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<tr>
<td>AL3065S16-13</td>
<td>SO-16</td>
<td>S16</td>
<td>2500/13”Tape &amp; Reel</td>
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