The AL1783Q is a three-channel, automotive-compliant, linear LED driver with three independent PWM dimming and current setting controls for each channel.

The AL1783Q is a cost-effective solution for automotive LED driving, providing excellent PWM dimming performance, low standby power, and ease of system implementation.

The device offers up to 250mA output current per channel, and withstands up to 55V input and LED pin operating voltage.

The AL1783Q is available in the thermally efficient TSSOP-16EP package.

### The DIODES Advantage

- **Wide 6.5V to 55V Input Voltage Range**
  Supports full automotive voltage range—including load dumps

- **Current Setting for Each Channel Set by External Resistors**
  Enables each output current to be individually set

- **Independent PWM Dimming for Each Channel**
  Supports PWM dimming down to 1% with good dimming linearity, even at 1kHz

- **Up to 250mA Output Current per Channel**
  Provides ±4% LED current tolerance @125mA

- **Comprehensive Open-Drain Fault Flag Pin Report**
  Includes Undervoltage Lock Out (UVLO), Open/Short LED Protection, Overtemperature Protection (OTP)
  Improves system robustness

### Applications

- Daytime running lamps
- Position lamps
- Fog lamps
- Stop or tail lamps
- Interior lamps
- Rear lamps

Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documentation.

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**Typical Application**

$V_{in}$ up to 55V

**Automotive-Compliant High-Current Linear LED Drivers**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Min. Input Voltage</th>
<th>Max. Input Voltage</th>
<th>Max. Output Voltage</th>
<th>Channel Max. Output Current</th>
<th>Number of Channels</th>
<th>LED Current Accuracy</th>
<th>Analog Dimming Supported</th>
<th>Number of Independent Channels</th>
<th>Ambient Temp.</th>
<th>Package</th>
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</thead>
<tbody>
<tr>
<td>AL1783Q</td>
<td>6.5 V</td>
<td>55 V</td>
<td>55 V</td>
<td>250 mA</td>
<td>3</td>
<td>±4 %</td>
<td></td>
<td>3</td>
<td>-40 to +125</td>
<td>TSSOP-16EP</td>
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<tr>
<td>AL5871Q</td>
<td>5 V</td>
<td>55 V</td>
<td>55 V</td>
<td>750 mA</td>
<td>1</td>
<td>4</td>
<td>Y</td>
<td>1</td>
<td>-40 to +125</td>
<td>TSSOP-16EP</td>
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<tr>
<td>AL5873Q</td>
<td>5 V</td>
<td>55 V</td>
<td>55 V</td>
<td>250 mA</td>
<td>3</td>
<td>4</td>
<td>Y</td>
<td>1</td>
<td>-40 to +125</td>
<td>TSSOP-16EP</td>
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**Ordering Information**

<table>
<thead>
<tr>
<th>Orderable Part Number</th>
<th>Compliance (Only Automotive Supports PPAP)</th>
<th>Package</th>
<th>Moisture Sensitivity</th>
<th>Packing</th>
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<tr>
<td>AL1783QT16E-13</td>
<td>Automotive</td>
<td>TSSOP-16EP</td>
<td>MSL-1</td>
<td>2,500</td>
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