431-Q1 Device Nomenclature

**Part Number**

- **TLV431**
- **AQ**
- **DBVR**
- **Q1**

**Accuracy Grade**

- **A:** 1%
- **B:** 0.5%
- (blank): 0.4%

**Operating Temperature Range**

- **Q:** -40°C to 125°C

**Packages**

- **TL/TLV/TLVH431**
  - DBV: SOT-23-5
  - DBZ: SOT-23-3

**TL1431**

- **D:** SOIC-8

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**431-Q1 Family of Devices**

<table>
<thead>
<tr>
<th>Device</th>
<th>Vref (typ)</th>
<th>Vka (max)</th>
<th>Ika (min)</th>
<th>Ika (max)</th>
<th>Iref (max)</th>
<th>$I_{(Iref)}$ (max)</th>
<th>Temp Drift (ppm/°C)</th>
<th>Voltage Options (Vd)</th>
<th>Initial Accuracy Grade (%)</th>
<th>IQ</th>
<th>Adj.</th>
<th>1.225</th>
<th>2.5</th>
<th>Standard</th>
<th>A</th>
<th>B</th>
<th>Pkg. Notes</th>
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<tbody>
<tr>
<td>TL1431-Q1</td>
<td>2.5V</td>
<td>36V</td>
<td>1mA</td>
<td>100mA</td>
<td>4μA</td>
<td>2μA</td>
<td>133</td>
<td>3 to 36V</td>
<td>✓</td>
<td>0.4</td>
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<td>SOIC-8</td>
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<tr>
<td>TL431A/B-Q1</td>
<td>2.49V</td>
<td>36V</td>
<td>1mA</td>
<td>100mA</td>
<td>4μA</td>
<td>2.5μA</td>
<td>83</td>
<td>3 to 36V</td>
<td>✓</td>
<td>1</td>
<td>0.5</td>
<td>0.7mA</td>
<td>SOT23-3, SOT23-5</td>
<td>B-grade only offered in SOT23-3</td>
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<td></td>
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<tr>
<td>TL432A/B-Q1</td>
<td>2.49V</td>
<td>36V</td>
<td>1mA</td>
<td>100mA</td>
<td>4μA</td>
<td>2.5μA</td>
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<td>3 to 36V</td>
<td>✓</td>
<td>1</td>
<td>0.5</td>
<td>0.7mA</td>
<td>SOT23-3</td>
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<tr>
<td>TLV431A/B-Q1</td>
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<td>6V</td>
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<td>15mA</td>
<td>0.5μA</td>
<td>0.5μA</td>
<td>151</td>
<td>6V</td>
<td>✓</td>
<td>1</td>
<td>0.5</td>
<td>100μA</td>
<td>SOT23-3, SOT23-5</td>
<td>A-grade only offered in SOT23-5</td>
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<td>100μA</td>
<td>SOT23-3, SOT23-5</td>
<td>A-grade only offered in SOT23-5</td>
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</table>

**Design Resources**

- **Automotive LED Lighting with Adjustable Shunt References**
- **Using the TL431 as a Voltage Comparator**
- **Setting the Shunt Voltage on a Shunt Regulator**
- **Understanding Stability Boundary Conditions for TL431**
- **Flyback Compensation Network Design for TL431**
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