6A05 - 6A10
6.0A SILICON RECTIFIER

Description
- High Surge Current Capability
- Low Leakage and Forward Voltage Drop
- Lead Free Finish, RoHS Compliant (Notes 1 & 2)

Mechanical Data
- Case: R-6
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Color Band Indicates Cathode
- Approximate Weight: 2.1 grams

Ordering Information (Note 3)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Case</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A05-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
</tr>
<tr>
<td>6A1-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
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<tr>
<td>6A2-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
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<td>6A4-T</td>
<td>R-6</td>
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<td>6A6-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
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<td>6A8-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
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<td>6A10-T</td>
<td>R-6</td>
<td>500/Tape &amp; Reel, 13-inch</td>
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</table>

Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated’s definitions of Halogen- and Antimony-free, “Green” and Lead-free.
3. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

Maximum Ratings and Electrical Characteristics (@\(T_A = +25°C\), unless otherwise specified.)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>6A05</th>
<th>6A1</th>
<th>6A2</th>
<th>6A4</th>
<th>6A6</th>
<th>6A8</th>
<th>6A10</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Maximum Recurrent Peak Reverse Voltage</td>
<td>(V_{RRM})</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
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<tr>
<td>Maximum RMS Voltage</td>
<td>(V_{RMS})</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
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<tr>
<td>Maximum DC Blocking Voltage</td>
<td>(V_{DC})</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
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<tr>
<td>Maximum Average Forward Rectified Current 9.5mm Lead Length @ (T_A = +75°C) (See Figure 1)</td>
<td>(I_{(AV)})</td>
<td>6.0</td>
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<td></td>
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<td>A</td>
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<tr>
<td>Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load</td>
<td>(I_{FSM})</td>
<td>400</td>
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<td></td>
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<td></td>
<td>A</td>
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<tr>
<td>Maximum Instantaneous Forward Voltage at 6.0A DC</td>
<td>(V_{FM})</td>
<td>0.90</td>
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<td>V</td>
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<tr>
<td>Maximum DC Reverse Current at Rated Blocking Voltage @ (T_A = +25°C)</td>
<td>(I_{RM})</td>
<td>10</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(\mu A)</td>
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<tr>
<td>@ (T_A = +100°C)</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(\mu A)</td>
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<tr>
<td>Operating and Storage Temperature Range</td>
<td>(T_J, T_{STG})</td>
<td>-65 to +175</td>
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<td></td>
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<td></td>
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<td>°C</td>
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</table>
**Fig. 1** Output Current Derating Curve

- **T<sub>A</sub>**: Ambient Temperature (°C)
- **I<sub>A</sub>**: Average Rectified Current (A)

- **A**: Recommended Method (See Derating "A")
- **B**: Standard Method (See Derating "B")

**Ground Plane:** 25mm<sup>2</sup> equivalent copper surface area

**Printed Circuit Board Mounting Method**

**Fig. 2** Typical Forward Characteristics

- **I<sub>F</sub>**: Instantaneous Forward Current (A)
- **V<sub>F</sub>**: Instantaneous Forward Voltage (V)

- **T<sub>j</sub> = 25°C**
- **Pulse Width = 300ms 2% Duty Cycle**

**Fig. 3** Maximum Non-Repetitive Peak Forward Surge Current

- **I<sub>p(kA)</sub>**: Peak Forward Surge Current (A)
- **Number of Cycles at 60 Hz**

- **8.3ms Single-Half Sine-Wave**

**Fig. 4** Typical Thermal Resistance to Ambient (°C/W)

- **R<sub>ThJC</sub>**: Thermal Resistance from Junction to Case
- **R<sub>ThJA</sub>**: Thermal Resistance from Junction to Ambient
- **Lead Length to Heat Sink (mm)**

**November 2018**

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Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

![Package Outline Diagram]

<table>
<thead>
<tr>
<th>Dim</th>
<th>Min</th>
<th>Max</th>
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<tbody>
<tr>
<td>A</td>
<td>25.40</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>8.60</td>
<td>9.10</td>
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<tr>
<td>C</td>
<td>1.20</td>
<td>1.30</td>
</tr>
<tr>
<td>D</td>
<td>8.60</td>
<td>9.10</td>
</tr>
</tbody>
</table>

All Dimensions in mm

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