1A1S THRU 1A7S

SILICON RECTIFIERS
Reverse Voltage – 50 to 1000 Volts
Forward Current – 1.0 Amperes

Features
- High reliability
- Low leakage
- Low forward voltage drop
- High current capability

Mechanical Data
- Case: Molded plastic black body
- Mounting Position: Any
- Lead: MIL-STD 202E method 208C guaranteed

Absolute Maximum Ratings and Characteristics
Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>1A1S</th>
<th>1A2S</th>
<th>1A3S</th>
<th>1A4S</th>
<th>1A5S</th>
<th>1A6S</th>
<th>1A7S</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive 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>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>Maximum average forward rectified current at ( T_A = 25°C )</td>
<td>( I_O )</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)</td>
<td>( I_{FSM} )</td>
<td></td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Maximum instantaneous forward voltage at 1A DC</td>
<td>( V_F )</td>
<td></td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage ( @T_A = 25°C )</td>
<td>( I_R )</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td>uA</td>
</tr>
<tr>
<td>Maximum full load reverse current full cycle average 0.375&quot; (9.5mm) lead length at ( T_L = 75°C )</td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>uA</td>
</tr>
<tr>
<td>Typical junction capacitance at 4 V, 1MHz</td>
<td>( C_J )</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Typical thermal resistance</td>
<td>( R_{JA} )</td>
<td></td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating and storage temperature range</td>
<td>( T_J, T_S )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-65 to +150 °C</td>
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</table>
RATING AND CHARACTERISTIC CURVES (1A1S thru 1A7S)

**FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE**

- **AVERAGE FORWARD CURRENT (A)**
- **AMBIENT TEMPERATURE (°C)**
  - Single Phase
  - Half Wave 60Hz
  - Resistive or Inductive Load

**FIG.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

- **INSTANTANEOUS FORWARD CURRENT (A)**
- **INSTANTANEOUS FORWARD VOLTAGE (V)**
  - TJ=25°C
  - Pulse Width=300μS
  - 1% Duty Cycle

**FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

- **PEAK FORWARD SURGE CURRENT (A)**
- **NUMBER OF CYCLES AT 60 Hz**
  - 8.3ms Single Half Sine-Wave
  - (JEDEC Method)

**FIG.4-TYPICAL REVERSE CHARACTERISTICS**

- **INSTANTANEOUS REVERSE CURRENT (A)**
- **PERCENT OF RATED PEAK REVERSE VOLTAGE (%)**
  - TJ=25°C

**FIG.5-TYPICAL JUNCTION CAPACITANCE**

- **JUNCTION CAPACITANCE (pF)**
- **REVERSE VOLTAGE (V)**
  - TJ=25°C

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