RS401L THRU RS407L

SINGLE-PHASE GLASS PASSIVATED SILICON BRIDGE RECTIFIERS

Reverse Voltage – 50 to 1000 Volts
Forward Current – 4.0 Amperes

Features
- Ideal for printed circuit board
- Surge overload rating: 200 amperes peak
- Mounting position: Any
- Weight: 4.8 grams
- Molded structure

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>RS401L</th>
<th>RS402L</th>
<th>RS403L</th>
<th>RS404L</th>
<th>RS405L</th>
<th>RS406L</th>
<th>RS407L</th>
<th>Units</th>
</tr>
</thead>
<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 Volts</td>
</tr>
<tr>
<td>Maximum RMS bridge input 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 Volts</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 Volts</td>
</tr>
<tr>
<td>Maximum average forward output current at $T_A = 75°C$</td>
<td>$I_O$</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amps</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>200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amps</td>
</tr>
<tr>
<td>Maximum forward voltage drop per bridge element at 4A DC</td>
<td>$V_F$</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Typical junction Capacitance (Note)</td>
<td>$C_J$</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Maximum reverse current at rated DC blocking voltage per element @ $T_A = 25°C$</td>
<td>$I_R$ @ $T_A = 25°C$</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μAmps</td>
</tr>
<tr>
<td>@ $T_A = 100°C$</td>
<td>$I_R$ @ $T_A = 100°C$</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mAmps</td>
</tr>
<tr>
<td>Operating and storage temperature range</td>
<td>$T_J,T_S$</td>
<td>-55 to +150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes: (1) Measured at 1 MHz and applied reverse voltage of 4volts.
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RATINGS AND CHARACTERISTIC CURVES (RS401L THRU RS407L)

FIG.1-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

8.3 ms Single Half Sine-Wave (JEDEC Method)

PEAK FORWARD SURGE CURRENT (A)

NUMBER OF CYCLES AT 60 Hz

FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

Single Phase Half Wave
60Hz Inductive or Resistive Load

AVERAGE FORWARD OUTPUT CURRENT (A)

CASE TEMPERATURE (°C)

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

Pulse Width=300us
1% Duty Cycle

INSTANTANEOUS FORWARD CURRENT (A)

INSTANTANEOUS FORWARD VOLTAGE (V)

FIG.4-TYPICAL REVERSE CHARACTERISTICS

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)

Tj=100°C

Tj=25°C