FR301 THRU FR307

FAST RECOVERY RECTIFIERS
Reverse Voltage - 50 to 1000 Volts  Forward Current - 3.0 Amperes

**FEATURES**
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:
  260°C/10 seconds, 0.375”(9.5mm) lead length,
  5 lbs. (2.3kg) tension

**MECHANICAL DATA**

**Case:** JEDEC DO-201AD molded plastic body
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026
**Polarity:** Color band denotes cathode end
**Mounting Position:** Any
**Weight:** 0.04 ounce, 1.10 grams

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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

<table>
<thead>
<tr>
<th>SYMBOLS</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>Volts</td>
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<tr>
<td>Maximum DC blocking voltage</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum average forward rectified current 0.375”(9.5mm) lead length at T&lt;sub&gt;A&lt;/sub&gt;=75°C</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>Amps</td>
</tr>
<tr>
<td>Maximum instantaneous forward voltage at 3.0A</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage T&lt;sub&gt;A&lt;/sub&gt;=25°C</td>
<td>µA</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage T&lt;sub&gt;A&lt;/sub&gt;=100°C</td>
<td>µA</td>
</tr>
<tr>
<td>Maximum reverse recovery time (NOTE 1)</td>
<td>ns</td>
</tr>
<tr>
<td>Typical junction capacitance (NOTE 2)</td>
<td>pF</td>
</tr>
<tr>
<td>Typical thermal resistance (NOTE 3)</td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>°C</td>
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</tbody>
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<table>
<thead>
<tr>
<th>SYMBOLS</th>
<th>FR 301</th>
<th>FR 302</th>
<th>FR 303</th>
<th>FR 304</th>
<th>FR 305</th>
<th>FR 306</th>
<th>FR 307</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V&lt;sub&gt;RRM&lt;/sub&gt;</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>V&lt;sub&gt;RMS&lt;/sub&gt;</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>Volts</td>
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<tr>
<td>V&lt;sub&gt;DC&lt;/sub&gt;</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>I&lt;sub&gt;(AV)&lt;/sub&gt;</td>
<td>3.0</td>
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<tr>
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<td>200.0</td>
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<td>Amps</td>
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<td>1.3</td>
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<td></td>
<td></td>
<td>Volts</td>
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<tr>
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<td>5.0</td>
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<td></td>
<td>µA</td>
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<tr>
<td>I&lt;sub&gt;R&lt;/sub&gt;</td>
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<td>100.0</td>
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<td></td>
<td>µA</td>
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<tr>
<td>t&lt;sub&gt;r&lt;/sub&gt;</td>
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<td>150</td>
<td>250</td>
<td>500</td>
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<td>ns</td>
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<tr>
<td>C&lt;sub&gt;J&lt;/sub&gt;</td>
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<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>R&lt;sub&gt;θJA&lt;/sub&gt;</td>
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<td>40.0</td>
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<td></td>
<td></td>
<td></td>
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<td>°C/W</td>
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**Note:**
1. Reverse recovery condition I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3. Thermal resistance from junction to ambient at 0.375”(9.5mm) lead length, P.C.B. mounted

Note: Specification is subject to change without further notice. For more details and updates, please visit our website.
RATINGS AND CHARACTERISTIC CURVES FR301 THRU FR307

FIG. 1- FORWARD CURRENT DERATING CURVE

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

FIG. 5-TYPICAL JUNCTION CAPACITANCE

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

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