**MITSUBISHI HIGH-FREQUENCY RECTIFIER DIODES**

**FD1500AV-90**

**HIGH POWER, HIGH FREQUENCY, PRESS PACK TYPE**

**FD1500AV-90**

- **IF(AV)** Average forward current ............... 1500A
- **VRRM** Repetitive peak reverse voltage .......... 3500 ~ 4500V
- **QRR** Reverse recovery charge .................... 2000µC
- **Press pack type**

**APPLICATION**

High-power inverters, Fly-wheel diodes in DC choppers, Power supplies as high frequency rectifiers

**MAXIMUM RATINGS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Voltage class</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRRM</td>
<td>Repetitive peak reverse voltage</td>
<td>3500</td>
<td>4000</td>
</tr>
<tr>
<td>VRSM</td>
<td>Non-repetitive peak reverse voltage</td>
<td>3500</td>
<td>4000</td>
</tr>
<tr>
<td>VR(DC)</td>
<td>DC reverse voltage</td>
<td>2800</td>
<td>3200</td>
</tr>
</tbody>
</table>

**ELECTRICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Test conditions</th>
<th>Limits</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRRM</td>
<td>Repetitive peak reverse current</td>
<td>Tj = 125°C, Vrrm Applied</td>
<td>—</td>
<td>150</td>
</tr>
<tr>
<td>VM</td>
<td>Forward voltage</td>
<td>Tj = 125°C, Ifm = 3400A, Instantaneous measurement</td>
<td>—</td>
<td>3.0</td>
</tr>
<tr>
<td>QRRI</td>
<td>Reverse recovery charge</td>
<td>Ifm = 1200A, di/dt = ~30A/µs, Vr = 150V, Tj = 125°C</td>
<td>—</td>
<td>2000</td>
</tr>
<tr>
<td>Rj(f)</td>
<td>Thermal resistance</td>
<td>Junction to fin</td>
<td>—</td>
<td>0.013</td>
</tr>
</tbody>
</table>
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PERFORMANCE CURVES

MAXIMUM FORWARD CHARACTERISTICS

FORWARD CURRENT (A) vs. FORWARD VOLTAGE (V)

RATED SURGE FORWARD CURRENT

SURGE FORWARD CURRENT (KA) vs. CONDUCTION TIME (CYCLES AT 60Hz)

MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)

THERMAL IMPEDANCE (°C/W) vs. TIME (S)

MAXIMUM POWER DISSIPATION CHARACTERISTICS

POWER DISSIPATION (W) vs. AVERAGE FORWARD CURRENT (A)

ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT

FIN TEMPERATURE (°C) vs. AVERAGE FORWARD CURRENT (A)

REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE

REVERSE RECOVERY CHARGE (µC), REVERSE RECOVERY TIME (µS) vs. JUNCTION TEMPERATURE

MITSUBISHI ELECTRIC

Aug.1998
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REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. FORWARD CURRENT

REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. RATE OF DECREASE OF REVERSE CURRENT

FORWARD CURRENT (A)
RATE OF DECREASE OF REVERSE CURRENT (A/µS)