1F1G thru 1F7G

Glass Passivated Fast Recovery Rectifiers
Reverse Voltage 50 to 1000 Volts  Forward Current 1.0 Ampere

Features

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability

Mechanical Data

- Case: Molded plastic R-1
- Epoxy: UL 94V-O rate flame retardant
- Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- High temperature soldering guaranteed:
  250°C/10 seconds .375” (9.5mm) lead lengths at 5 lbs. (2.3kg) tension
- Mounting position: Any
- Weight: 0.007 ounce, 0.20 gram

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, derate current by 20%

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbols</th>
<th>1F1G</th>
<th>1F2G</th>
<th>1F3G</th>
<th>1F4G</th>
<th>1F5G</th>
<th>1F6G</th>
<th>1F7G</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>$V_{\text{mm}}$</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>Maximum RMS voltage</td>
<td>$V_{\text{RMS}}$</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>
</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>
<td>Volts</td>
</tr>
<tr>
<td>Maximum average forward rectified current</td>
<td>$I_{AVG}$</td>
<td>1.0</td>
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<td></td>
<td></td>
<td></td>
<td>Amps</td>
</tr>
<tr>
<td>0.375” (9.5mm) lead length at $T_{A}$=30°C</td>
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<tr>
<td>Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)</td>
<td>$I_{TSM}$</td>
<td>30.0</td>
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<td></td>
<td>Amps</td>
</tr>
<tr>
<td>Maximum instantaneous forward voltage @ 1.0A</td>
<td>$V_{I}$</td>
<td>1.3</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage</td>
<td>$I_{R}$</td>
<td>5.0</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>uA</td>
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<tr>
<td>@ $T_{A}$=25°C</td>
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<tr>
<td>@ $T_{A}$=125°C</td>
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<tr>
<td>Maximum reverse recovery time (Note 1)</td>
<td>$t_{r}$</td>
<td>150</td>
<td>250</td>
<td>500</td>
<td></td>
<td></td>
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<td>nS</td>
</tr>
<tr>
<td>Typical junction capacitance (Note 2)</td>
<td>$C_{j}$</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
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<tr>
<td>Operating junction temperature range</td>
<td>$T_{J}$</td>
<td>-55 to +150</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>°C</td>
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<tr>
<td>Storage temperature range</td>
<td>$T_{STG}$</td>
<td>-55 to +150</td>
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<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. Reverse Recovery Test Conditions: $I_{R}=0.5A$, $I_{p}=1.0A$, $I_{ms}=0.25A$
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

Notes:
1. Rise Time=7ns max. Input Impedance=5 megohms.
2. Fall Time=10ns max. Source Impedance=50 ohms.

FIG. 2 - MAXIMUM FORWARD CURRENT DERATING CURVE

Average Forward Current (A) vs. Ambient Temperature (°C)

FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

Peak Forward Surge Current (A) vs. Number of Cycles at 60Hz

FIG. 4 - TYPICAL JUNCTION CAPACITANCE

Junction Capacitance (pF) vs. Reverse Voltage (V)

FIG. 5 - TYPICAL FORWARD CHARACTERISTICS

Instantaneous Forward Current (A) vs. Forward Voltage (V)

Tj=25°C
Pulse Width=300µs
1% Duty Cycle