FR101G thru FR107G

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 DO-204AL (DO-41)/A-405
◆ 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
◆ Weight: DO-41 - 0.012 ounce, 0.335 gram
   A-405 - 0.008 ounce, 0.235 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%

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<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>$V_{\text{rm}}$</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>
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<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>
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<tr>
<td>Maximum DC blocking voltage</td>
<td>$V_{\text{DC}}$</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>
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<tr>
<td>Maximum average forward rectified current 0.375” (9.5mm) lead length at $T_{j}=55^\circ$C</td>
<td>$I_{\text{AV}}$</td>
<td>1.0</td>
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<td>Amps</td>
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<td>Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)</td>
<td>$I_{\text{SM}}$</td>
<td>30.0</td>
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<td>Amps</td>
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<td>Maximum instantaneous forward voltage @ 1.0A</td>
<td>$V_{i}$</td>
<td>1.3</td>
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<td>Volts</td>
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<tr>
<td>Maximum DC reverse current at rated DC blocking voltage @ $T_{j}=25^\circ$C</td>
<td>$I_{p}$</td>
<td>5.0</td>
<td>100</td>
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<td></td>
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<tr>
<td>Maximum reverse recovery time (Note 1)</td>
<td>$t_{\text{rr}}$</td>
<td>150</td>
<td>250</td>
<td>500</td>
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<td>nS</td>
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<td>Typical junction capacitance (Note 2)</td>
<td>$C_{j}$</td>
<td>12</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>pF</td>
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<td>Operating junction temperature range</td>
<td>$T_{j}$</td>
<td>-55 to +150</td>
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<td>°C</td>
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<td>Storage temperature range</td>
<td>$T_{\text{STG}}$</td>
<td>-55 to +150</td>
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<td></td>
<td></td>
<td>°C</td>
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Notes:
1. Reverse Recovery Test Conditions: $I_{p}=0.5\text{A}$, $I_{sp}=1.0\text{A}$, $I_{rr}=0.25\text{A}$
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=70ns max. Input Impedance=1 megohm 22pf
2. Rise Time=10ns max. Source Impedance=50 ohms

FIG. 2: MAXIMUM FORWARD CURRENT DERATING CURVE

Average Forward Current (A)

Ambient Temperature (°C)

FIG. 3: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

Peak Forward Surge Current (A)

Number of Cycles at 60Hz

Tj=25°C

8.3ms Single Half Sine Wave JEDEC Method

FIG. 4: TYPICAL JUNCTION CAPACITANCE

Junction Capacitance (pF)

Reverse Voltage (V)

Tj=25°C

FIG. 5: TYPICAL FORWARD CHARACTERISTICS

Instantaneous Forward Current (A)

Forward Voltage (V)

Tj=25°C

Pulse Width=300µs
1% Duty Cycle