SF81 THRU SF88

Glass Passivated Super Fast Rectifier
Reverse Voltage - 50 to 600 V
Forward Current - 8 A

Features

• Low forward voltage drop
• Low reverse leakage current
• Superfast switching time for high efficiency
• High current capability
• High surge current capability

Mechanical Data

• Case: Molded plastic, TO-220A
• Epoxy: UL 94V-0 rate flame retardant
• Terminals: leads solderable per MIL-STD-202 method 208 guaranteed
• Polarity: As marked
• Mounting Position: Any

Absolute Maximum Ratings and Characteristics

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbols</th>
<th>SF81</th>
<th>SF82</th>
<th>SF83</th>
<th>SF84</th>
<th>SF85</th>
<th>SF86</th>
<th>SF87</th>
<th>SF88</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>150</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>V_{RMS}</td>
<td>35</td>
<td>70</td>
<td>105</td>
<td>140</td>
<td>210</td>
<td>280</td>
<td>350</td>
<td>420</td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC Blocking Voltage</td>
<td>V_{DC}</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current at T_C = 100 °C</td>
<td>I_{AV}</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>A</td>
</tr>
<tr>
<td>Peak Forward Surge Current 8.3 ms Single half Sine-wave Superimposed on Rated Load (JEDEC method)</td>
<td>I_{FSM}</td>
<td>125</td>
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<td></td>
<td>A</td>
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<tr>
<td>Maximum Forward Voltage at 8 A and 25 °C</td>
<td>V_F</td>
<td>0.95</td>
<td>1.3</td>
<td>1.7</td>
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<td></td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>Maximum Reverse Current at T_A = 25 °C at Rated DC Blocking Voltage</td>
<td>I_R</td>
<td>10</td>
<td></td>
<td></td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
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<tr>
<td>Typical Junction Capacitance</td>
<td>C_J</td>
<td>80</td>
<td>60</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
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<tr>
<td>Maximum Reverse Recovery Time</td>
<td>t_{rr}</td>
<td>35</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
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<td>Typical Thermal Resistance</td>
<td>R_{JUC}</td>
<td>2.2</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>°C/W</td>
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<tr>
<td>Operating and Storage Temperature Range</td>
<td>T_P, T_STG</td>
<td>-55 to +150</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

1) Measured at 1 MHz and applied reverse voltage of 4 V.
2) Reverse recovery test conditions: I_F = 0.5 A, I_{IN} = 1 A, I_{RR} = 0.25 A
3) Thermal resistance from Junction to case mounted on heatsink.
RATINGS AND CHARACTERISTIC CURVES

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

NOTES: 1. Rise Time=7ns max, Input Impedance=1 megohm 22pf
2. Rise Time=10ns max, Source Impedance=50 ohms

FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

FIG.3- TYPICAL REVERSE CHARACTERISTICS

FIG.4- MAXIMUM NON-REPEETITIVE FORWARD SURGE CURRENT

FIG.5- TYPICAL JUNCTION CAPACITANCE

FIG.6- TYPICAL FORWARD CHARACTERISTICS

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