SCHOTTKY BARRIER DIODES

Features

• Metal silicon junction, majority carrier conduction
• Guarding for overvoltage protection
• Low power loss, high efficiency
• High current capability
  low forward voltage drop
• High surge capability
• For use in low voltage, high frequency inverters,
  free wheeling, and polarity protection applications
• High temperature soldering guaranteed;
  250°C/10 seconds, 0.375” (9.5mm) lead length,
  5 lbs. (2.3Kg) tension

Absolute Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>1N5817</th>
<th>1N5818</th>
<th>1N5819</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Repetitive Peak Reverse Voltage</td>
<td>$V_{RRM}$</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>$V_{RMS}$</td>
<td>14</td>
<td>21</td>
<td>28</td>
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<tr>
<td>Maximum DC Blocking Voltage</td>
<td>$V_{DC}$</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Maximum Non-repetitive Peak Reverse Voltage</td>
<td>$V_{RSM}$</td>
<td>24</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current 0.375” (9.5mm) Lead Length At $T_L = 90°C$</td>
<td>$I_{AVJ}$</td>
<td>1</td>
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</tr>
<tr>
<td>Peak Forward Surge Current, 8.3ms Single half sine-wave Superimposed On Rated Load (JEDEC method) At $T_L = 70°C$</td>
<td>$I_{FSM}$</td>
<td></td>
<td>25</td>
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<tr>
<td>Maximum Instantaneous Forward Voltage At 1 A</td>
<td>$V_F$</td>
<td>0.450</td>
<td>0.550</td>
<td>0.600</td>
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<tr>
<td>Maximum Instantaneous Forward Voltage At 3.1 A</td>
<td>$V_F$</td>
<td>0.750</td>
<td>0.875</td>
<td>0.900</td>
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<tr>
<td>Maximum Instantaneous Reverse Current at Rated DC Reverse Voltage $T_A = 25°C$</td>
<td>$I_R$</td>
<td>1</td>
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<td></td>
<td>$T_A = 100°C$</td>
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<td>Typical Thermal Resistance</td>
<td>$R_{ThJ}$</td>
<td>50</td>
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<td></td>
<td>$R_{thJC}$</td>
<td>15</td>
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<tr>
<td>Typical Junction Capacitance</td>
<td>$C_J$</td>
<td>110</td>
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<tr>
<td>Storage and Operating Junction Temperature Range</td>
<td>$T_{J}$, $T_{S}$</td>
<td>-65 to +125</td>
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</tbody>
</table>
1N 5817 THRU 1N 5819

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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

SEMTECH ELECTRONICS LTD.
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