Surface Mount Schottky Barrier rectifiers

Using the Schottky Barrier principle with a Molybdenum barrier meta. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes, in surface mount applications where compact size and weight are critical to the system.

Features
* Low Forward Voltage.
* Low Switching noise.
* High Current Capacity
* Guarantee Reverse Avalanche.
* Guard-Ring for Stress Protection.
* Low Power Loss & High efficiency.
* 150°C Operating Junction Temperature
* Low Stored Charge Majority Carrier Conduction.
* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O
* Moisture Sensitivity Level: MSL-1

* In compliance with EU RoHs 2002/95/EC directives

MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>SM17</th>
<th>SM18</th>
<th>SM19</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Repetitive Reverse Voltage</td>
<td>( V_{RRM} )</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>Working Peak Reverse Voltage</td>
<td>( V_{RRM} )</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>DC Blocking Voltage</td>
<td>( V_R )</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>RMS Reverse Voltage</td>
<td>( V_{R(MS)} )</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>V</td>
</tr>
<tr>
<td>Average Rectifier Forward Current</td>
<td>( I_D )</td>
<td>1.0</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Non-Repetitive Peak Surge Current</td>
<td>( I_{FSM} )</td>
<td>25</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>(Surge applied at rate load conditions half-wave, single phase,60Hz )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating and Storage Junction Temperature Range</td>
<td>( T_J, T_{STG} )</td>
<td>-65 to +150</td>
<td></td>
<td></td>
<td>°C</td>
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</table>

ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>SM17</th>
<th>SM18</th>
<th>SM19</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Instantaneous Forward Voltage</td>
<td>( V_F ) ( I_F = 1.0 \text{ Amp} ) ( I_F = 3.0 \text{ Amp} )</td>
<td>0.45</td>
<td>0.75</td>
<td>0.55</td>
<td>0.87</td>
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<tr>
<td>Maximum Instantaneous Reverse Current</td>
<td>( I_R ) ( \text{Rated DC Voltage, } T_C = 25°C ) ( \text{Rated DC Voltage, } T_C = 125°C )</td>
<td>0.5</td>
<td>10</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Maximum Thermal Resistance Junction to Case</td>
<td>( R_{SJC} )</td>
<td>60</td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td>Typical Junction Capacitance</td>
<td>( C_P ) ( \text{Reverse Voltage of 4 volts &amp; } f=1 \text{ MHz} )</td>
<td>90</td>
<td>80</td>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

CASE---
Transfer molded plastic
OLARITY---
Cathode indicated polarity band
SM17 Thru SM19

FIG-1 FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD RECTIFIED CURRENT (Amp.)

CASE TEMPERATURE (°C)

FIG-2 TYPICAL FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT (Amp.)

FORWARD VOLTAGE (Volts)

FIG-3 TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT (mA.)

PERCENT OF RATED REVERSE VOLTAGE (%)

FIG-4 TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE (µF)

REVERSE VOLTAGE (Volts)

FIG-5 PEAK FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT (Amp.)

NUMBER OF CYCLES AT 60 Hz

Tj = 125°c

Tj = 75°c

Tj = 25°c