M1-M7
1.0 AMP. Surface Mount Rectifiers
SMA/DO-214AC

Features
✧ For surface mounted application
✧ Glass passivated junction chip.
✧ Low forward voltage drop
✧ High current capability
✧ Easy pick and place
✧ High surge current capability
✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
✧ High temperature soldering: 260°C / 10 seconds at terminals
✧ High reliability grade (AEC Q101 qualified)

Mechanical Data
✧ Case: Molded plastic
✧ Terminals: Pure tin plated, lead free solderable per J-STD-002B and JESD22-B102D.
✧ Polarity: Indicated by cathode band
✧ Packaging: 12mm tape per EIA STD RS-481
✧ Weight: 0.064 gram

Maximum Ratings and Electrical Characteristics
Rating 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>Type Number</th>
<th>Symbol</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</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>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>V_RMS</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
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<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>V</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current @T_a =110°C</td>
<td>I_{(AV)}</td>
<td>1.0</td>
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<td>A</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_{FSM}</td>
<td>40</td>
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<td>A</td>
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<td>Maximum Instantaneous Forward Voltage @ 1.0A</td>
<td>V_F</td>
<td>1.1</td>
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<td>V</td>
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<tr>
<td>Maximum DC Reverse Current @ T_a =25°C at Rated DC Blocking Voltage @ T_a =125°C</td>
<td>I_R</td>
<td>5.0</td>
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<td>uA</td>
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<td>Typical Reverse Recovery Time (Note 1)</td>
<td>T_{rr}</td>
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<td>Typical Junction Capacitance ( Note 2 )</td>
<td>C_J</td>
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<td>pF</td>
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<td>Non-Repetitive Peak Reverse Avalanche Energy at 25°C, I_{AS}=1A, L=10mH</td>
<td>E_{AS}</td>
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<td></td>
<td>mJ</td>
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<td>Typical Thermal Resistance (Note 3)</td>
<td>R_{BUL}</td>
<td>27</td>
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<td>R_{BJA}</td>
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<tr>
<td>Operating 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_{STG}</td>
<td>-55 to +150</td>
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<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{AS}=0.25A
2. Measured at 1 MHz and Applied V_R=4.0 Volts
3. Measured on P.C. Board with 0.2” x 0.2” (5.0mm x 5.0mm) Copper Pad Areas.

Note: Specification is subject to change without further notice. For more details and updates, please visit our website.
RATINGS AND CHARACTERISTIC CURVES (M1 THRU M7)

FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE

FIG. 2 - TYPICAL REVERSE CHARACTERISTICS

FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

FIG. 4 - TYPICAL JUNCTION CAPACITANCE

FIG. 5 - TYPICAL FORWARD CHARACTERISTICS

FIG. 6 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

**FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

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

**FIG. 4 - TYPICAL JUNCTION CAPACITANCE**

- Junction Capacitance (pF)
- Reverse Voltage (V)

**FIG. 6 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**

- Pulse Generator (NOTE 2)
- Oscilloscope (NOTE 1)
- Noninductive 50Ω (approx)
- Noninductive 10Ω

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

**SPECIFICATIONS:**
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