**Product Summary (@T_A = +25°C)**

<table>
<thead>
<tr>
<th>V_{RRM} (V)</th>
<th>I_D (A)</th>
<th>V_F Max (V)</th>
<th>I_R Max (μA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>1</td>
<td>1.3</td>
<td>5</td>
</tr>
</tbody>
</table>

**Features and Benefits**

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Surge Overload Rating to 30A Peak
- High Current Capability
- Low Profile Design, Package Height Less than 1.1mm
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- An Automotive-Compliant Part is Available Under Separate Datasheet (RS1MDFQ)

**Description and Applications**

The RS1MDF is a rectifier packaged in the low profile D-FLAT package. Providing fast recovery time for high efficiency, this device is ideal for use in general rectification applications such as:

- Switching Mode Power Supplies
- Chargers
- LED Lighting
- Inverters
- AC-DC Adapters

**Mechanical Data**

- Case: D-FLAT
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.035 grams (Approximate)

**Ordering Information (Note 4)**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Compliance</th>
<th>Case</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS1MDF-13</td>
<td>AEC-Q101</td>
<td>D-FLAT</td>
<td>10,000/Tape &amp; Reel</td>
</tr>
</tbody>
</table>

**Notes:**

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated’s definitions of Halogen- and Antimony-free, “Green” and Lead-free.
3. Halogen- and Antimony-free “Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Marking Information**

```
D-FLAT

R1M = Product Type Marking Code
YWW = Date Code Marking
Y = Last Digit of Year (ex: 6 for 2016)
WW = Week Code (01 to 53)
AB = Foundry and Assembly Code
```
**Maximum Ratings** (@\(T_A = +25°C\), unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Repetitive Reverse Voltage</td>
<td>(V_{RRM})</td>
<td>1,000</td>
<td>V</td>
</tr>
<tr>
<td>Working Peak Reverse Voltage</td>
<td>(V_{RWM})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC Blocking Voltage (Note 5)</td>
<td>(V_R)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMS Reverse Voltage</td>
<td>(V_{R(RMS)})</td>
<td>700</td>
<td>V</td>
</tr>
<tr>
<td>Average Rectified Output Current @ (T_A = +100°C)</td>
<td>(I_O)</td>
<td>1.0</td>
<td>A</td>
</tr>
<tr>
<td>Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load</td>
<td>(I_{FSM})</td>
<td>30</td>
<td>A</td>
</tr>
</tbody>
</table>

**Thermal Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Thermal Resistance, Junction to Terminal (Note 7)</td>
<td>(R_{\theta JT})</td>
<td>31</td>
<td>°C/W</td>
</tr>
<tr>
<td>Typical Thermal Resistance, Junction to Air (Note 7)</td>
<td>(R_{\theta JA})</td>
<td>83</td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating and Storage Temperature Range</td>
<td></td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

**Electrical Characteristics** (@\(T_A = +25°C\), unless otherwise specified.)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
<th>Test Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Breakdown Voltage (Note 5)</td>
<td>(V_{(BR)R})</td>
<td>1,000</td>
<td>—</td>
<td>—</td>
<td>V</td>
<td>(I_R = 10\mu A)</td>
</tr>
<tr>
<td>Forward Voltage Drop</td>
<td>(V_F)</td>
<td>0.95</td>
<td>0.83</td>
<td>1.3</td>
<td>V</td>
<td>(I_F = 1A, T_J = +25°C)  (I_F = 1A, T_J = +125°C)</td>
</tr>
<tr>
<td>Leakage Current (Note 5)</td>
<td>(I_R)</td>
<td>0.2</td>
<td>5</td>
<td>5</td>
<td>µA</td>
<td>(V_R = 1,000V, T_J = +25°C)  (V_R = 1,000V, T_J = +125°C)</td>
</tr>
<tr>
<td>Reverse Recovery Time</td>
<td>(t_{rr})</td>
<td>140</td>
<td>500</td>
<td>ns</td>
<td></td>
<td>(I_F = 0.5A, I_R = 1.0A, I_F = 0.25A)</td>
</tr>
<tr>
<td>Total Capacitance</td>
<td>(C_T)</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>pF</td>
<td>(V_R = 4.0V_{DC}, f = 1MHz)</td>
</tr>
</tbody>
</table>

Notes:
5. Short duration pulse test used to minimize self-heating effect.
6. Device mounted on FR-4 substrate, 1" x 1", 2oz, single-sided, PC boards with 0.1" x 0.15" copper pads.
7. Device mounted on FR-4 substrate, 0.4" x 0.5", 2oz, single-sided, PC boards with 0.2" x 0.25" copper pads.
Notes:
8. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
9. Rise Time = 10ns max. Input Impedance = 50Ω.

Package Outline Dimensions
Please see http://www.diodes.com/package-outlines.html for the latest version.

Suggested Pad Layout
Please see http://www.diodes.com/package-outlines.html for the latest version.
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