Features
- RF & Microwave Medium Barrier Silicon 70 V Schottky Diode
- Available as Single Diode, Series Pair or Unconnected Pair Configurations.
- Low Profile Surface Mount Plastic Package
- Lead Free
- RoHS* Compliant with 260°C Reflow Capability

Description and Applications
The MA4E1340 series is a silicon medium barrier Schottky diode suitable for use in mixer, detector and limiter circuits. These diodes are also suitable for usage in anti-parallel, shunt power surge protection circuits for 50 Ω and 75 Ω systems.

The MA4E1340 Series of Schottky diodes is available in the SOT-23 (case style 287), SOT-323 (case style 1146), SC-79 (case style 1279) and the SOD 323, (case style 1141) plastic package. These packages are supplied on tape and reel for automatic pick and place assembly and for surface mount placement to circuit boards, as indicated by a "T" to the P/N suffix.

These Silicon Medium Barrier, 70 V Schottky Diodes are useful in detector, limiter, mixer, and surge protection applications for operating frequency bands from DC through 6 GHz.

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA4E1340A1-287T</td>
<td>SOT-23</td>
</tr>
<tr>
<td>MA4E1340A1-1146T</td>
<td>SOT-323</td>
</tr>
<tr>
<td>MA4E1340B1-287T</td>
<td>SOT-23</td>
</tr>
<tr>
<td>MA4E1340B1-1146T</td>
<td>SOT-323</td>
</tr>
<tr>
<td>MA4E1340A1-1141T</td>
<td>SOD-323</td>
</tr>
<tr>
<td>MADS-001340-12790T</td>
<td>SC-79</td>
</tr>
</tbody>
</table>

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.
Silicon Medium Barrier Schottky Diodes

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**MA4E1340 Series**

**Silicon Medium Barrier Schottky Diodes**

**Rev. V12**

**Electrical Specifications @ +25°C**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage ($V_f$)</td>
<td>$I_F = 1$ mA</td>
<td>$410$ mV max.</td>
</tr>
<tr>
<td></td>
<td>$I_F = 15$ mA</td>
<td>$1$ V max.</td>
</tr>
<tr>
<td>Delta Forward Voltage($\Delta V_f$)</td>
<td>$I_F = 1$ mA</td>
<td>$20$ mV max.</td>
</tr>
<tr>
<td></td>
<td>(for series pair and unconnected pair configurations)</td>
<td></td>
</tr>
<tr>
<td>Total Capacitance ($C_T$)</td>
<td>$V_R = 0$ V, $F = 1$ MHz</td>
<td>$2$ pF max.</td>
</tr>
<tr>
<td>Reverse Leakage Current ($I_R$)</td>
<td>$V_R = 50$ V</td>
<td>$200$ nA max.</td>
</tr>
<tr>
<td>Reverse Voltage Breakdown ($V_B$)</td>
<td>$I_R = 10$ $\mu$A</td>
<td>$70$ V min.</td>
</tr>
</tbody>
</table>

**Maximum Ratings @ +25°C (unless otherwise specified)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating &amp; Storage Temperature</td>
<td>-55°C to +125°C</td>
</tr>
<tr>
<td>Total Power Dissipation (RF and DC)</td>
<td>250 mW</td>
</tr>
<tr>
<td>Continuous Forward Current</td>
<td>200 mA</td>
</tr>
<tr>
<td>Surge Forward Current, @ $t &lt; 10$ ms</td>
<td>200 mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>70 V</td>
</tr>
<tr>
<td>Soldering Temperature (Standard Part #)</td>
<td>+235°C for 5 sec.</td>
</tr>
<tr>
<td>Soldering Temperature (RoHS Compliant Part #)</td>
<td>+260°C for 5 sec.</td>
</tr>
</tbody>
</table>

1. Operation of this device above any one of the Maximum Rated parameters may cause permanent damage.
2. Please refer to Application Note M538 for surface mounting instructions.
MA4E1340 Series
Silicon Medium Barrier Schottky Diodes

Circuit Models
SOT-23

SOT-323

SOD-323
Case Styles

SOT-23

SOT-23 (Case Style 287)

- **Dimensions (Inches and Millimeters):**
  - A: 0.048 – 1.22
  - B: 0.008 – 0.20
  - C: 0.040 – 1.00
  - D: 0.013 – 0.020, 0.35 – 0.50
  - E: 0.003 – 0.006, 0.08 – 0.15
  - F: 0.110 – 0.119, 2.80 – 3.00
  - G: 0.047 – 0.056, 1.20 – 1.40
  - H: 0.037 typical, 0.95 typical
  - J: 0.075 typical, 1.90 typical
  - K: —, 0.103
  - L: —, 0.024

- **Package Parasitics:**
  - Ls = 1.4 nH
  - Cp = 0.12 pF

SOT-323

SOT-323 (Case Style 1146)

- **Dimensions (Inches and Millimeters):**
  - A: 0.063 – 0.087, 1.6 – 2.2
  - B: 0.045 – 0.053, 1.15 – 1.35
  - C: 0.079 – 0.087, 2.0 – 2.2
  - D: 0.047 – 0.055, 1.2 – 1.4
  - E: 0.008 – 0.016, 0.2 – 0.4
  - F: 0.031 – 0.039, 0.8 – 1.0
  - G: —, 0.004
  - H: 0.003 – 0.006, 0.08 typical, 0.15
  - J: 0.004 – 0.010, 0.1 – 0.25

- **Package Parasitics:**
  - Ls = 1.2 nH
  - Cp = 0.11 pF

3. Applicable on all sides.

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DC-0007060
MA4E1340 Series

Silicon Medium Barrier Schottky Diodes

Revised V12

Case Styles (Cont’d)

SOD-323

![SOD-323 Dimensional Drawing]

Package Parasitics

Ls = 1.2 nH

Cp = 0.11 pF

SOD-323 (Case Style 1141)

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>A</td>
<td>—</td>
<td>0.043</td>
</tr>
<tr>
<td>B</td>
<td>—</td>
<td>0.004</td>
</tr>
<tr>
<td>C</td>
<td>—</td>
<td>0.008</td>
</tr>
<tr>
<td>D</td>
<td>0.010</td>
<td>0.016</td>
</tr>
<tr>
<td>E</td>
<td>0.003</td>
<td>0.006</td>
</tr>
<tr>
<td>F</td>
<td>0.063</td>
<td>0.075</td>
</tr>
<tr>
<td>G</td>
<td>0.045</td>
<td>0.057</td>
</tr>
<tr>
<td>H</td>
<td>0.091</td>
<td>0.106</td>
</tr>
</tbody>
</table>

SC-79

![SC-79 Dimensional Drawing]

Package Parasitics

Ls = 0.6 nH

Cp = 0.10 pF

SC-79 (Case Style 1279)

![SC-79 (Case Style 1279) Dimensional Drawing]
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