Surface Mount GaAs Tuning Varactor

Features
- Hyperabrupt Tuning Varactor
- Small Profile Surface Mount Package
- RoHS Compliant Package
- Supplied on Tape and Reel

Description
The MAVR-011005-12790T diode is a hyperabrupt tuning varactor with constant gamma from 2 to 12 volts. This device offers a large capacitance ratio and high quality factor. It is offered in the surface mount, RoHS compliant, plastic SC-79 package.

Applications
In addition to the electrical characteristics of the MAVR-011005-12790T the small package size and minimal package parasitics (0.6nH package inductance) make these parts attractive for tuning applications where the optimum combination of very wide tuning range and high quality factor is required.

Absolute Maximum Ratings\(^1,2\)
@\(T_A=+25\,^\circ\text{C}\) (Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Voltage</td>
<td>18 V</td>
</tr>
<tr>
<td>Forward Current</td>
<td>50 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55 °C to +125 °C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55 °C to +125 °C</td>
</tr>
</tbody>
</table>

1. Operation of this device above any one of these parameters may cause permanent damage.
2. Please refer to application note M538 for surface mounting.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Configuration</th>
<th>Package</th>
<th>Package Cp (pF)</th>
<th>Package Ls (nH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAVR-011005-12790T</td>
<td>Single</td>
<td>SC-79</td>
<td>0.10</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Electrical Specifications @ \(T_A = +25\,^\circ\text{C}\)

Breakdown Voltage @ \(I_R = 10\,\mu\text{A}, V_B = 20\,\text{V Minimum}\)
Reverse Leakage Current @ \(V_R = 10\,\text{V}, I_R = 100\,\text{nA Maximum}\)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Ct (pF)</th>
<th>Capacitance Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAVR-011005-12790T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(V_R = 4,\text{V})</td>
<td>Typ. 0.270</td>
<td>1.8</td>
</tr>
<tr>
<td>(V_R = 12.0,\text{V})</td>
<td>Typ. 0.20</td>
<td></td>
</tr>
</tbody>
</table>

Specifications subject to change without prior notification.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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Case Styles

SC-79 (Case Style 1279)

Mounting Information
The illustration indicates the recommended mounting pad configuration for the SC-79 packages. Solder paste containing flux should be screened onto the pads to a thickness of 0.005-0.007 inches. The plastic package is placed in position, firmly adhering to the solder paste.

Permanent attachment is performed by a reflow soldering procedure during which the tab temperature does not exceed +275 °C and the body temperature does not exceed +250 °C, for standard models and +260 °C for the RoHS compliant devices.

Please refer to Application Note M538 for surface mounting instructions.

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