2FAI-M16R – Integrated Passive & Active Device using MLP

Features
■ Lead free as standard
■ RoHS compliant*
■ ESD protection
■ Protects up to eight data lines
■ Low insertion loss

Applications
■ Cell Phones
■ PDAs and Notebooks
■ GPS and SMART Cards

General Information

The 2FAI-M16R device, manufactured using Thin Film on Silicon technology, provides ESD protection for the external ports of portable electronic devices such as cell phones, modems and PDAs.

The ESD protection provided by the component enables a data port to withstand a minimum ±8 KV Contact /±15 KV Air Discharge per the ESD test method specified in IEC 61000-4-2.

The device measures 3 mm x 3 mm and is intended to be mounted directly onto an FR4 printed circuit board. The MLP device meets typical thermal cycle and bend test specifications.

Electrical & Thermal Characteristics

<table>
<thead>
<tr>
<th>Electrical Characteristics (T. = 25 °C unless otherwise noted)</th>
<th>Symbol</th>
<th>Minimum</th>
<th>Nominal</th>
<th>Maximum</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance</td>
<td>R</td>
<td>180</td>
<td>200</td>
<td>220</td>
<td>Ω</td>
</tr>
<tr>
<td>Capacitance @ 2.5 V 1 MHz</td>
<td>C</td>
<td>16</td>
<td>20</td>
<td>24</td>
<td>pF</td>
</tr>
<tr>
<td>Rated Standoff Voltage</td>
<td>V</td>
<td>5.0</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Breakdown Voltage @ 1 mA</td>
<td>V</td>
<td>6.0</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Forward Voltage @ 10 mA</td>
<td>V</td>
<td>0.8</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Leakage Current @ 3 V</td>
<td>I</td>
<td>0.1</td>
<td></td>
<td></td>
<td>µA</td>
</tr>
<tr>
<td>ESD Protection: IEC 61000-4-2 Contact Discharge</td>
<td>±8</td>
<td></td>
<td></td>
<td></td>
<td>kV</td>
</tr>
<tr>
<td>Air Discharge</td>
<td>±15</td>
<td></td>
<td></td>
<td></td>
<td>kV</td>
</tr>
</tbody>
</table>

Thermal Characteristics (T. = 25 °C unless otherwise noted)

| DC Power Rating                                               | P      | 100     |         |         | mW   |
| Operating Temperature Range                                   | T.     | -40     | 25      | +85     | °C   |
| Storage Temperature Range                                     | T.     | -55     | 25      | +150    | °C   |

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.
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**Product Dimensions**

This silicon-based device is packaged using micro leadframe packaging technology. The MLPs have an exposed die attach pad that provides the interconnect medium from die to PCB. The pads are arranged for easy PCB routing. The pitch is 0.5 mm and the dimensions for the packaged device are shown below.

**Recommended Pad Layout**

![Diagram of recommended pad layout]

**How to Order**

<table>
<thead>
<tr>
<th>Thin Film</th>
<th>Model</th>
<th>MLP Package</th>
<th>No. of Solder Pads</th>
<th>Packaging Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAI</td>
<td>B0412</td>
<td>MLP</td>
<td>16</td>
<td>R = Tape and Reel</td>
</tr>
</tbody>
</table>

Packaged 3000 pcs. / 13 " reel

(100 % Sn Termination)
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Block Diagram

The MLP Device block diagram below includes the pin names and basic electrical connections associated with each channel.

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Frequency Response

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Device Pin Out

The Pin-Out for the device is shown below. Note also that the device is shown with bottom side pads facing up.

Packaging

The surface mount product is packaged in a 12 mm x 8 mm Tape and Reel format per EIA-481 standard.