MAFL-011078

CATV Diplex Filter
5 - 42 / 54 - 1218 MHz

Features
- 75 Ω
- Surface Mount Technology
- RoHS* Compliant

Description
The MAFL-011078 is a surface mount diplex filter designed for the CATV applications, DTV, and DBS applications.

Ordering Information¹

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAFL-011078</td>
<td>200 piece reel</td>
</tr>
<tr>
<td>MAFL-011078-SB1</td>
<td>Sample Board</td>
</tr>
</tbody>
</table>

¹. Reference Application Note M513 for reel size information.

Pin Configuration²

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 6, 8, 10-17, 19, 20</td>
<td>Ground</td>
</tr>
<tr>
<td>7</td>
<td>High Pass Port</td>
</tr>
<tr>
<td>9</td>
<td>Low Pass Port</td>
</tr>
<tr>
<td>18</td>
<td>Common Port</td>
</tr>
</tbody>
</table>

². MACOM recommends connecting unused package pins to ground.

Electrical Specifications: +25°C, Z₀ = 75 Ω

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency Test Conditions (MHz)</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>5 - 42 54 - 1218 MHz</td>
<td>dB</td>
<td>1.0</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Filter Isolation</td>
<td>5 - 42 42 - 54 54 - 1218 MHz</td>
<td>dB</td>
<td>45</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td>Filter Return Loss (all ports)</td>
<td>5 - 42 54 - 750 750 - 1218 MHz</td>
<td>dB</td>
<td>22</td>
<td>24</td>
<td>—</td>
</tr>
<tr>
<td>Group Delay</td>
<td>39 - 40.5 40.5 - 42 55.25 - 58.83 61.25 - 64.83 67.25 - 70.83 MHz</td>
<td>ns</td>
<td>—</td>
<td>10</td>
<td>17</td>
</tr>
</tbody>
</table>


For further information and support please visit: https://www.macom.com/support
CATV Diplex Filter
5 - 42 / 54 - 1218 MHz

Absolute Maximum Ratings\textsuperscript{3,4}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Power</td>
<td>1000 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20°C to +125°C</td>
</tr>
</tbody>
</table>

3. Exceeding any one or combination of these limits may cause permanent damage to this device.
4. MACOM does not recommend sustained operation near these survivability limits.

Recommended PCB Configuration

Dimensions in mm. Tolerance: .x \pm 0.1, .xx \pm 0.05
Typical Performance Curves

**Input Port Return Loss**

**Low Pass Filter Performance**

**High Pass Filter Performance**

**Filter Isolation**

**Low Pass port Return Loss**

**High Pass port Return Loss**
Outline Drawing

Dimensions in mm. Tolerance: .x ± 0.1, .xx ± 0.05
Tape & Reel Orientation

**Tape & Reel Information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty per reel</td>
<td>-</td>
<td>200</td>
</tr>
<tr>
<td>Reel Size</td>
<td>mm</td>
<td>330</td>
</tr>
<tr>
<td>Tape Width</td>
<td>mm</td>
<td>56.00</td>
</tr>
<tr>
<td>Pitch</td>
<td>mm</td>
<td>40.00</td>
</tr>
<tr>
<td>Ao</td>
<td>mm</td>
<td>30.3</td>
</tr>
<tr>
<td>Bo</td>
<td>mm</td>
<td>30.3</td>
</tr>
<tr>
<td>Ko</td>
<td>mm</td>
<td>6.4</td>
</tr>
<tr>
<td>Orientation</td>
<td>-</td>
<td>F30</td>
</tr>
</tbody>
</table>

Reference Application Note ANI-019 for orientation
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