DESCRIPTION

- 240 MHz SAW bandpass filter with 1.23 MHz bandwidth.
- 24.6 x 9 mm LCC package.
- RoHS compliant.

TYPICAL PERFORMANCE

Horizontal: Frequency : 0.5 MHz/div
Vertical from Top: Relative Magnitude : 10 dB/div
               Relative magnitude : 1 dB/div
               Phase Linearity : 5 deg/div
               Group Delay Deviation : 100 ns/div

S11 (237.5-242.5 MHz) S22 (237.5-242.5 MHz)
### SPECIFICATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Frequency (F&lt;sub&gt;c&lt;/sub&gt;)</td>
<td>-</td>
<td>240</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>Insertion Loss at F&lt;sub&gt;c&lt;/sub&gt;</td>
<td>-</td>
<td>12.7</td>
<td>16</td>
<td>dB</td>
</tr>
<tr>
<td>1 dB Bandwidth</td>
<td>1.23</td>
<td>1.40</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>10 dB bandwidth</td>
<td>-</td>
<td>1.87</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>38 dB Bandwidth</td>
<td>-</td>
<td>2.29</td>
<td>2.5</td>
<td>MHz</td>
</tr>
<tr>
<td>45 dB bandwidth</td>
<td>-</td>
<td>2.35</td>
<td>4.1</td>
<td>MHz</td>
</tr>
<tr>
<td>Passband Ripple (F&lt;sub&gt;c&lt;/sub&gt;+/-0.615 MHz)</td>
<td>-</td>
<td>0.2</td>
<td>1</td>
<td>dB p-p</td>
</tr>
<tr>
<td>Phase Linearity (F&lt;sub&gt;c&lt;/sub&gt;+/-0.615 MHz)</td>
<td>-</td>
<td>2.5</td>
<td>8</td>
<td>deg p-p</td>
</tr>
<tr>
<td>Stopband Rejection (F&lt;sub&gt;c&lt;/sub&gt;+/-1.25 to F&lt;sub&gt;c&lt;/sub&gt;+/-2.05 MHz)</td>
<td>38</td>
<td>46</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Stopband Rejection (F&lt;sub&gt;c&lt;/sub&gt;+/-2.05 to F&lt;sub&gt;c&lt;/sub&gt;+/-220 MHz)</td>
<td>45</td>
<td>47.5</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Absolute Delay</td>
<td>-</td>
<td>3.04</td>
<td>-</td>
<td>us</td>
</tr>
<tr>
<td>Input Return Loss (F&lt;sub&gt;c&lt;/sub&gt;+/-0.615 MHz)</td>
<td>10</td>
<td>15</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss (F&lt;sub&gt;c&lt;/sub&gt;+/-0.615 MHz)</td>
<td>10</td>
<td>18</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>System Source and Load Impedance</td>
<td>50</td>
<td></td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-</td>
<td>25</td>
<td>-</td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. Defined as the average of the 10 dB frequencies.
2. All dB levels are defined relative to the insertion loss at F<sub>c</sub>.
3. All electrical specifications apply across the full operating temperature range.

### MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature Range</td>
<td>-40</td>
<td>25</td>
<td>85</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-10</td>
<td>25</td>
<td>85</td>
<td>°C</td>
</tr>
<tr>
<td>Input Power Level</td>
<td>-</td>
<td>10</td>
<td>13</td>
<td>dBm</td>
</tr>
</tbody>
</table>

### MATCHING CIRCUIT

```
\[
\begin{array}{c}
\text{Input} \\
50 \, \Omega \\
\text{Single-ended}
\end{array}
\begin{array}{c}
Ls1 = 52 \, \text{nH} \\
Cp1 = 29 \, \text{pF}
\end{array}
\begin{array}{c}
10 \\
\end{array}
\begin{array}{c}
1 \\
\end{array}
\begin{array}{c}
Ls2 = 56 \, \text{nH} \\
Cp2 = 27 \, \text{pF}
\end{array}
\begin{array}{c}
\text{Output} \\
50 \, \Omega \\
\text{Single-ended}
\end{array}
\]
```

Typical component values:

- \( Ls1 = 52 \, \text{nH} \)
- \( Ls2 = 56 \, \text{nH} \)
- \( Cp1 = 29 \, \text{pF} \)
- \( Cp2 = 27 \, \text{pF} \)

Notes:
1. Recommend use of 2% tolerance matching components. Inductor Q=45.
2. Component values are for reference only and may change depending on board layout.
PACKAGE OUTLINE

SUGGESTED FOOTPRINT

Units: mm

Tolerances are ±0.15 mm except where indicated and for the overall length and width, which are nominal values.

Pad Configuration:

Input: 10
Input return: 1
Output: 5
Output return: 6
Ground: All other pads

Package Material:
Body: Al₂O₃ ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 1 µm min,
over a 1.3-8.9 µm Ni plating

All specifications are believed to be accurate and reliable. However, Spectrum Microwave reserves the right to make changes without notice.
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