DESCRIPTION

- 140 MHz SAW bandpass filter with 2.6 MHz bandwidth.
- 13.3 x 6.5 mm ceramic LCC package.
- RoHS compliant.

TYPICAL PERFORMANCE

Horizontal: Frequency : 2 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 (130 to 150 MHz)  S22 (130 to 150 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_C )</td>
<td>139.70</td>
<td>140.00</td>
<td>140.30</td>
<td>MHz</td>
</tr>
<tr>
<td>Minimum Insertion Loss</td>
<td>10</td>
<td>11.7</td>
<td>13</td>
<td>dB</td>
</tr>
<tr>
<td>1 dB Bandwidth</td>
<td>2.6</td>
<td>2.74</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>3 dB Bandwidth</td>
<td>2.8</td>
<td>3.32</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>40 dB Bandwidth</td>
<td>-</td>
<td>5.04</td>
<td>5.3</td>
<td>MHz</td>
</tr>
<tr>
<td>Ultimate Rejection (70 to 210 MHz)</td>
<td>40</td>
<td>45</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Passband Ripple (( F_C +/-1.3 ) MHz)</td>
<td>-</td>
<td>0.5</td>
<td>1.0</td>
<td>dB p-p</td>
</tr>
<tr>
<td>Phase Ripple (( F_C +/-1.3 ) MHz)</td>
<td>-</td>
<td>4.1</td>
<td>5</td>
<td>deg p-p</td>
</tr>
<tr>
<td>Group Delay Ripple (( F_C +/-1.3 ) MHz)</td>
<td>100</td>
<td>300</td>
<td>-</td>
<td>ns/div</td>
</tr>
<tr>
<td>Temperature Coefficient of ( F_C )</td>
<td>-</td>
<td>-18</td>
<td>-</td>
<td>ppm/°C</td>
</tr>
<tr>
<td>Source/Load Impedance</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>ohms</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 lower and upper 3 dB frequencies at room ambient.
2. All dB levels are defined relative to the insertion loss.
3. This parameter shall be evaluated as +/- 1.3 MHz from actual \( F_C \) obtained.

MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature Range</td>
<td>-40</td>
<td>85</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>5</td>
<td>50</td>
<td>°C</td>
</tr>
<tr>
<td>Input Power Level</td>
<td>-</td>
<td>10</td>
<td>dBm</td>
</tr>
</tbody>
</table>

MATCHING CIRCUIT

Typical component values:
- \( L_{s1} = 20 \) nH
- \( L_{s2} = 15 \) nH
- \( C_{p1} = 72 \) pF
- \( L_{p2} = 27 \) nH

Notes:
1. Recommend use of 2% tolerance matching components. Typical inductor Q=40.
2. Component values are for reference only and may change depending on board layout.
140 MHz SAW Filter
2.6 MHz Bandwidth
Part Number: SF0140BA03147S

PACKAGE OUTLINE

SUGGESTED FOOTPRINT

Units: mm
Tolerances are ±0.15 mm except where indicated.

Pad Configuration:
Input: 5
Output: 11
Ground: 1,2,3,5,7,8,9,10

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.
© 2010 All rights reserved.

Spectrum Microwave
400 Nickerson Road, Marlborough, MA 01752, USA • Phone 1-508-251-6400 • Fax 1-508-251-6401
www.SpectrumMicrowave.com

ISO 9001 Registered

DSSF0140BA03147S Rev A 22-Feb-2010
ECN 36650 Page 3 of 3