DESCRIPTION

- 141 MHz SAW bandpass filter with 1.25 MHz bandwidth.
- 19 x 6.5 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 (138.5 to 143.5 MHz)  S22 (138.5 to 143.5 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, $F_C$ (fixed reference)</td>
<td>-</td>
<td>141.0</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>Insertion loss at $F_C$</td>
<td>-</td>
<td>11.7</td>
<td>14</td>
<td>dB</td>
</tr>
<tr>
<td>1 dB Bandwidth $\uparrow$</td>
<td>-</td>
<td>1.21</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>Attenuation at $141 \pm 1.25$ MHz $\uparrow$</td>
<td>38</td>
<td>44</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Stopband Rejection (70 to 139.5 MHz) $\uparrow$</td>
<td>42</td>
<td>50</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Stopband Rejection (139.5 to 139.75 MHz) $\uparrow$</td>
<td>38</td>
<td>45</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Stopband Rejection (142.25 to 142.5 MHz) $\uparrow$</td>
<td>38</td>
<td>44</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Stopband Rejection (142.5 to 202.25 MHz) $\uparrow$</td>
<td>42</td>
<td>48</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Return Loss at Input and Output (141 ± 0.625 MHz) $\downarrow$</td>
<td>10</td>
<td>15</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Passband Amplitude Ripple (141 ± 0.625 MHz) $\downarrow$</td>
<td>-</td>
<td>0.65</td>
<td>1</td>
<td>dB p-p</td>
</tr>
<tr>
<td>Phase Linearity (141 ± 0.625 MHz) $\downarrow$</td>
<td>-</td>
<td>2.8</td>
<td>4</td>
<td>deg p-p</td>
</tr>
<tr>
<td>Source/Load Impedance</td>
<td>-</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. All dB levels to be measured relative to average loss across the passband.  
2. When matched using external components as described below.  
3. Does not include roll-offs at edge of pass band.

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>95</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-10</td>
<td>85</td>
<td>°C</td>
</tr>
<tr>
<td>Input Power Level</td>
<td>-</td>
<td>13</td>
<td>dBm</td>
</tr>
</tbody>
</table>

MATCHING CIRCUIT

![Matching Circuit Diagram]

Typical component values:

- $L_{s1} = 120$ nH
- $C_{p1} = 51$ pF
- $L_{s2} = 110$ nH
- $C_{p2} = 56$ pF

Notes:  
1. Recommend use of 2% tolerance matching components.  
2. Component values are for reference only and may change depending on board layout.
141 MHz SAW Filter
1.25 MHz Bandwidth
Part Number: SF0141CD03092S

PACKAGE OUTLINE

SUGGESTED FOOTPRINT

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

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

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

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

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