DESCRIPTION

- 696.42 MHz SAW delay line with 1.4 MHz bandwidth.
- 5 x 7 mm ceramic LCC.
- RoHS compliant.

TYPICAL PERFORMANCE

Center = 696.42 MHz, 2 MHz/div (25 kHz incr)
**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 (Fc, at 10dB points)</td>
<td>696.35</td>
<td>696.42</td>
<td>696.49</td>
<td>MHz</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>-</td>
<td>6.9</td>
<td>9</td>
<td>dB</td>
</tr>
<tr>
<td>3 dB Bandwidth</td>
<td>1.4</td>
<td>1.51</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>10 dB Bandwidth</td>
<td>-</td>
<td>2.71</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>Phase Linearity</td>
<td>-</td>
<td>2.5</td>
<td>10</td>
<td>deg p-p</td>
</tr>
<tr>
<td>Phase Slope (in 3 dB BW)</td>
<td>-</td>
<td>-0.16</td>
<td>-</td>
<td>deg/kHz</td>
</tr>
<tr>
<td>Insertion Phase</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>deg</td>
</tr>
<tr>
<td>Device Delay</td>
<td>-</td>
<td>570</td>
<td>-</td>
<td>ns</td>
</tr>
<tr>
<td>Turn Over Temperature (Tc)</td>
<td>-</td>
<td>46</td>
<td>-</td>
<td>°C</td>
</tr>
<tr>
<td>Source and Load Impedance</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>Ω</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-</td>
<td>23</td>
<td>-</td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes: 1. Measured at 696.42 MHz in a tuned reference test fixture.
2. Specifications apply at an ambient temperature of 23C +/- 5C.
3. Frequency versus temperature will be according to the following:
   \[ \frac{dFc}{Fc} = -0.032 \text{ ppm} \times (T-Tc)^2 \]
   where \( \frac{dFc}{Fc} \) = Change in center frequency (in ppm) and \( T \) = temperature (in degrees C). \( Tc \) = the turnover temperature.

**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>125</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-30</td>
<td>100</td>
<td>°C</td>
</tr>
<tr>
<td>Input Power Level</td>
<td>-</td>
<td>+13</td>
<td>dBm</td>
</tr>
</tbody>
</table>

**MATCHING CIRCUIT**

Typical component values:

\[
L_{s1} = 15 \text{ nH} \\
C_{p1} = 8 \text{ pF} \\
L_{s2} = 12 \text{ nH} \\
C_{p2} = 7 \text{ pF}
\]

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.
696.42 MHz Delay Line
1.4 MHz Bandwidth
Part Number SD0696BA03217S

PACKAGE OUTLINE

SUGGESTED FOOTPRINT

MARKING

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 for the overall length and width, which are nominal values.

Pad Configuration:
Input: 12
Input return: 10
Output: 6
Output return: 4
Ground: All other pads

Model Number
SMI BA03217S

Serial Number (Optional)
XXXXX

ESD/Pad 1 indicator and Date Code (YY=year, DDD=day)
Δ YYDDD

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