SAW Filter 433.920MHz  
Part No: MP05191  
Rev No: 3

A. MAXIMUM RATING:

Electrostatic Sensitive Device

1. Input Power Level: 10dBm
2. DC Voltage: 6V
3. Operating Temperature: -40°C to +85°C
4. Storage Temperature: -40°C to +105°C

B. ELECTRICAL CHARACTERISTICS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center frequency Fc</td>
<td>MHz</td>
<td>-</td>
<td>433.92</td>
<td>-</td>
</tr>
<tr>
<td>1.5dB BW</td>
<td>kHz</td>
<td>300</td>
<td>550</td>
<td>-</td>
</tr>
<tr>
<td>3dB BW</td>
<td>kHz</td>
<td>-</td>
<td>670</td>
<td>900</td>
</tr>
<tr>
<td>Minimum insertion loss IL (min)</td>
<td>dB</td>
<td>-</td>
<td>2.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Including loss of matching elements (Q=) *1)</td>
<td>dB</td>
<td>-</td>
<td>2.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Exclude loss in matching elements *2)</td>
<td>dB</td>
<td>-</td>
<td>0.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Passband (relative to IL min) *1)</td>
<td>433.770 ~ 434.070 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.5</td>
</tr>
<tr>
<td>Attenuation (relative to IL min) *1)</td>
<td>10.000 ~ 420.00MHz</td>
<td>dB</td>
<td>47</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>420.00 ~ 427.00MHz</td>
<td>dB</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>427.00 ~ 432.00MHz</td>
<td>dB</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>432.00 ~ 433.00MHz</td>
<td>dB</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>435.00 ~ 436.00MHz</td>
<td>dB</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>436.00 ~ 445.00MHz</td>
<td>dB</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>445.00 ~ 450.00MHz</td>
<td>dB</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>450.00 ~ 2000.00MHz</td>
<td>dB</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td>Impedance at Fc, Input *1) Z_IN = R_IN</td>
<td></td>
<td>C_IN Z_S</td>
<td>Ω</td>
<td>130Ω</td>
</tr>
<tr>
<td>Impedance at Fc, Output *1) Z_OUT = R_OUT</td>
<td></td>
<td>C_OUT Z_L</td>
<td>Ω</td>
<td>157Ω</td>
</tr>
</tbody>
</table>

*1): The matching circuit is real by actual passive components.
0805 Coillcraft CS series chip conductor is used for inductor.
0402 muRata GRM series is used for capacitor.

*2): The matching circuit is ideal by simulation.
C. FREQUENCY CHARACTERISTICS:

Frequency vs. Magnitude (Log Scale)

1. Center 433.92 MHz
2. 1 FBW 4 kHz
3. Span 50 MHz

-10.00 dB at
-1.5319 dB at

-20.00 dB at
-30.00 dB at
-40.00 dB at
-50.00 dB at
-60.00 dB at
-70.00 dB at

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Tel: +44 1460 256 100
Fax: +44 1460 256 101
www.golledge.com
Golledge Electronics Ltd
Eaglewood Park, Ilminster
Somerset, TA19 9DQ, UK
SAW Filter 433.920MHz
Part No: MP05191

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Smith Chart S11

Smith Chart S22
D. MEASUREMENT CIRCUIT:

The matching circuit is real by actual passive components.

![Matching Circuit Diagram]

E. OUTLINE DRAWING:

![Outline Drawing]

A: Input (recommended) or Input ground
B: Input ground (recommended) or Input
D: Output (recommended) or Output ground
E: Output ground (recommended) or Output
C: F: Ground

Unit: mm

*3) The recommended pin configuration offers better suppression of electrical crosstalk.

F. PCB FOOTPRINT:
G. PACKING:

1. Reel Dimension (Please refer To Fr-75d10 for packing quantity)

2. Tape Dimension
H. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150 ~ 180°C for 60 ~ 90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50 ~ 80 seconds and at 245 ~ 260°C peak (min. 10sec).
4. Time: 2 times.