SAW Filter 310.0MHz  Model: TB1215A
Part No: MP07588  Rev No: 1

A. MAXIMUM RATING:

- Electrostatic Sensitive Device
- Operating temperature range: -10°C to 80°C
- Storage temperature range: -40°C to 85°C
- Input Power Level: 10dBm
- Maximum DC Voltage: 10V

B. CHARACTERISTICS:

Ambient Temperature: 25°C

<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>310</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Insertion Loss IL</td>
<td>dB</td>
<td>24.5</td>
<td>27.0</td>
<td>-</td>
</tr>
<tr>
<td>-1dB bandwidth</td>
<td>MHz</td>
<td>14.20</td>
<td>14.45</td>
<td>-</td>
</tr>
<tr>
<td>-5dB bandwidth</td>
<td>MHz</td>
<td>15.23</td>
<td>15.30</td>
<td>-</td>
</tr>
<tr>
<td>-40dB bandwidth</td>
<td>MHz</td>
<td>16.87</td>
<td>17.00</td>
<td>-</td>
</tr>
<tr>
<td>Passband Ripple Fc ± 6.92MHz</td>
<td>dB</td>
<td>0.8</td>
<td>1.5</td>
<td>-</td>
</tr>
<tr>
<td>Group Delay variation Fc ± 6.92MHz</td>
<td>ns</td>
<td>60</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Absolute Group Delay</td>
<td>us</td>
<td>1.36</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Attenuation: (Reference level from Min IL)

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultimate Attenuation</td>
<td>dB</td>
<td>40</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>Temperature Coefficient</td>
<td>ppm/°C</td>
<td>-</td>
<td>-23</td>
<td>-</td>
</tr>
<tr>
<td>Source Impedance</td>
<td>Ohm</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Load Impedance</td>
<td>Ohm</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
C. FREQUENCY CHARACTERISTICS:

1. Wide Band Response:

![Wide Band Response Graph]

- Center Frequency: 310.0000 MHz
- Bandwidth: 24.920 dB
- Q: 18.811
- Loss: -34.920 dB

2. Pass Band Response and Group Delay Response:

![Pass Band Response and Group Delay Graph]

- Center Frequency: 310.0000 MHz
- Bandwidth: 24.910 dB
- Q: 21.439
- Loss: -34.910 dB
3. Smith Chart:
D. MATCHING CIRCUIT:

\[ L_1 = 5.6 \text{nH}, \quad C_1 = 27 \text{pF}, \quad C_2 = 15 \text{pF} \]

E. OUTLINE DRAWING:

- L: Input
- M: Input Ground
- E: Output
- F: Output Ground
- A, B, C, D, G, H, J, K: Ground
- Unit: mm

F. PCB FOOTPRINT:

- Unit: mm
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 260°C +0/-5°C peak (20 ~ 40 sec).
4. Time: 2 times.