SAW Filter 70.0MHz  
Model: TB1028A  
Part No: MP04766  
Rev No: 1

A. MAXIMUM RATING:

- Electrostatic Sensitive Device

1. Input Power Level: +20 dBm
2. Operating Temperature: -30°C to +80°C
3. Storage Temperature: -40°C to +85°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>69.8</td>
<td>70</td>
<td>70.2</td>
</tr>
<tr>
<td>Insertion Loss IL</td>
<td>dB</td>
<td>-</td>
<td>9.1</td>
<td>11.0</td>
</tr>
<tr>
<td>1dB Bandwidth</td>
<td>MHz</td>
<td>5.2</td>
<td>5.8</td>
<td>-</td>
</tr>
<tr>
<td>3dB Bandwidth</td>
<td>MHz</td>
<td>6.0</td>
<td>6.8</td>
<td>-</td>
</tr>
<tr>
<td>40dB Bandwidth</td>
<td>MHz</td>
<td>-</td>
<td>9.6</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Relative Attenuation:

- 10 to 64.5MHz dB 40 45 -
- 75.5 to 140MHz dB 37 41 -
- Amplitude ripple within Fc ± 2.1MHz dB - 0.8 1.0
- Group Delay ripple within Fc ± 2.1MHz nsec - 100 170
- Substrate Material - - YZ-LN -
- Temperature Coefficient of frequency ppm/°C - -94 -
C. FREQUENCY CHARACTERISTICS:

1. Frequency Response

Fig. 1: Horizontal: 10MHz / Div, Vertical: 10dB / Div

2. Passband response and Group Delay Variation

Fig. 2: Horizontal: 1MHz / Div, Vertical: 1dB / Div, Vertical: 100ns / Div
D. MEASUREMENT CIRCUIT:

\[ Z_{in} = 200 \text{ ohm} \quad Z_{out} = 200 \text{ ohm} \]

\[ L_1 = 180\text{nH} \quad L_2 = L_3 = 120\text{nH} \quad C_1 = C_2 = 82\text{pF} \quad C_3 = 22\text{pF} \]

E. OUTLINE DRAWING:

Laser Marking

K: RF input  
L: RF input ground  
E: RF output  
F: RF balance output or to be ground  
A, B, C, D, G, H, I, J: Ground  
Unit: mm

F. PCB FOOTPRINT:

Unit: mm
G. PACKING:

1. Reel Dimension

![Reel Dimension Diagram]

2. Tape Dimension

![Tape Dimension Diagram]
H. RECOMMENDED REFLOW PROFILE:

![Graph showing recommended reflow profile]

- Temp (Deg C) vs Time (Sec) graph
- Temperature increases and then decreases over time.