SAW Resonator 915.0MHz  
Model: TC0278A  
Part No: MP02715  
Rev No: 1

A. FEATURES:

One-Port Resonator

B. MAXIMUM RATING:

1. Input Power Level: 0dBm
2. DC voltage: 3V
3. Operating Temperature: -40°C to +85°C
4. Storage Temperature: -40°C to +85°C

C. ELECTRICAL CHARACTERISTICS:

Reference Temperature $T_A = 25°C$

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center frequency $F_c$</td>
<td>MHz</td>
<td>914.9</td>
<td>915</td>
<td>915.1</td>
</tr>
<tr>
<td>Insertion Loss IL</td>
<td>dB</td>
<td>-</td>
<td>1.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Unload quality factor $Q_U$</td>
<td>ppm</td>
<td>5000</td>
<td>6200</td>
<td>-</td>
</tr>
<tr>
<td>Ageing of $f_c$</td>
<td>ppm/yr</td>
<td>-</td>
<td>-</td>
<td>±10</td>
</tr>
<tr>
<td>Motional capacitance $C_1$</td>
<td>fF</td>
<td>-</td>
<td>1.39</td>
<td>-</td>
</tr>
<tr>
<td>Motional inductance $L_1$</td>
<td>μH</td>
<td>-</td>
<td>21.8</td>
<td>-</td>
</tr>
<tr>
<td>Motional resistance $R_1$</td>
<td>Ohm</td>
<td>-</td>
<td>20.3</td>
<td>-</td>
</tr>
<tr>
<td>Parallel capacitance $C_0$</td>
<td>pF</td>
<td>-</td>
<td>2.6</td>
<td>-</td>
</tr>
<tr>
<td>Frequency Temperature coefficient ($T_{cf}$)</td>
<td>ppm/c²</td>
<td>-</td>
<td>0.032</td>
<td>-</td>
</tr>
<tr>
<td>Turnover $T_o$</td>
<td>deg.C</td>
<td>10</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Package size</td>
<td>SMD</td>
<td>3.8 X 3.8 X 1.4mm</td>
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</tr>
</tbody>
</table>

Temperature dependence of $f_c$: $f_c(T_A) = f_c(T_O) (1 + T_{cf}(T_A - T_O)^2)$
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Part No: MP02715

D. OUTLINE DRAWING:

E. EQUIVIRENT CIRCUIT:

One-Port Resonator:

![Diagram of One-Port Resonator]

Source Impedance: 50Ω  Load Impedance: 50Ω

R1  C1  L1
F. FREQUENCY CHARACTERISTICS:

![Graph showing frequency characteristics of the SAW resonator](image)

G. TEST CIRCUIT:

Network analyzer

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From 50Ω Network Analyzer 50Ω B SAW Resonator E 50Ω To 50Ω Network Analyzer
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A · C · D · F
H. PCB FOOTPRINT:
I. PACKING:

1. Reel Dimension

2. Tape Dimension

Section A-A

Direction of feed