SAW Resonator: 315.0MHz  Model: TC0274A  Part No: MP06999  Rev No: 2

A. FEATURES:

One - Port Resonator.

B. MAXIMUM RATING:

1. Input Power Level: 0dBm
2. DC voltage: 12V
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>Unit</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center frequency $F_c$</td>
<td>MHz</td>
<td>314.925</td>
<td>315.00</td>
<td>315.075</td>
</tr>
<tr>
<td>Insertion Loss IL</td>
<td>dB</td>
<td>-</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Unload quality factor $Q_U$</td>
<td>ppm/yr</td>
<td>-</td>
<td>8000</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>2.89</td>
<td>-</td>
</tr>
<tr>
<td>Motional inductance $L_1$</td>
<td>μH</td>
<td>-</td>
<td>87.5</td>
<td>-</td>
</tr>
<tr>
<td>Motional resistance $R_1$</td>
<td>Ohm</td>
<td>-</td>
<td>20.2</td>
<td>-</td>
</tr>
<tr>
<td>Parallel capacitance $C_0$</td>
<td>pF</td>
<td>-</td>
<td>4.14</td>
<td>-</td>
</tr>
<tr>
<td>Frequency Temperature coefficient ($T_C f$)</td>
<td>ppm/c$^2$</td>
<td>-</td>
<td>0.032</td>
<td>-</td>
</tr>
<tr>
<td>Turnover To</td>
<td>deg. C</td>
<td>-</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>Package size</td>
<td>SMD 3 X 3 X 1.1mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Temperature dependence of $F_c$: $F_c (T_A) = F_c (T_O) (1+T_C f (T_A-T_O)^2)$
D. EQUIVALENT CIRCUIT:

One-Port Resonator:

![Equivalent Circuit Diagram]

E. OUTLINE DRAWING:

![Outline Drawing]

Pin B: Input or Output; Pin E: Output or Input
Pin A,C,D,F: Ground

Unit: mm
F. FREQUENCY CHARACTERISTICS:
G. TEST CIRCUIT:

Network analyzer

From 50Ω Network Analyzer | 50Ω SAW Resonator | To 50Ω Network Analyzer
--------------------------|------------------|--------------------------
 E                         | A, C, D, F       |                         
 B                         |                 |                         

H. PCB FOOT PRINT:

---

TC0274A v2
I. PACKING:

1. Reel Dimension

2. Tape Dimension
SAW Resonator: 315.0MHz  
Part No: MP06999

J. RECOMMENDED REFLOW PROFILE: