A. FEATURES:

Electrostatic Sensitive Device

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
5. Moisture Sensitivity Level: Level 1 (MSL1)

C. ELECTRICAL CHARACTERISTICS:

Reference Temperature \( T_A = 25°C \)

<table>
<thead>
<tr>
<th>Characteristics</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>499.965</td>
<td>500</td>
<td>500.035</td>
</tr>
<tr>
<td>Insertion Loss ( IL )</td>
<td>dB</td>
<td>-</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Unload quality factor ( QU )</td>
<td></td>
<td>-</td>
<td>14000</td>
<td>-</td>
</tr>
<tr>
<td>Motional capacitance ( C_1 )</td>
<td>fF</td>
<td>-</td>
<td>1.68</td>
<td>-</td>
</tr>
<tr>
<td>Motional inductance ( L_1 )</td>
<td>( \mu )H</td>
<td>-</td>
<td>60.24</td>
<td>-</td>
</tr>
<tr>
<td>Motional resistance ( R_1 )</td>
<td>Ohm</td>
<td>-</td>
<td>13.58</td>
<td>-</td>
</tr>
<tr>
<td>Parallel capacitance ( C_0 )</td>
<td>pF</td>
<td>-</td>
<td>2.96</td>
<td>-</td>
</tr>
<tr>
<td>Frequency Temperature coefficient ( TC_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>25</td>
<td>40</td>
<td>55</td>
</tr>
<tr>
<td>Package size</td>
<td>SMD 5.0 X 3.5 X 1.5mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Temperature dependence of \( F_c \): \( F_c (T_A) = F_c (T_O) \left(1+TC_f(T_A-T_O)^2\right) \)
D. EQUIVALENT CIRCUIT:

One-Port Resonator:

![Equivalent Circuit Diagram]

E. OUTLINE DRAWING:

![Outline Drawing]

F. TEST CIRCUIT:

Network analyzer

![Test Circuit Diagram]

G. PCB FOOTPRINT:

![PCB Footprint Diagram]
H. FREQUENCY CHARACTERISTICS:

![Graph showing frequency characteristics of SAW Resonator 500.0MHz Model: TC0632A Part No: MP09532 Rev No: 1.](image)
I. PACKING:

1. Reel Dimension

2. Tape Dimension

SECTION A-A

SECTION B-B

Direction of feed
J. 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.