MINIATURE CERAMIC SMD CRYSTAL

STANDARD SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Minimum</th>
<th>Typical</th>
<th>Maximum</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>12.000</td>
<td>-----</td>
<td>32.000*</td>
<td>MHz</td>
<td>*Contact Abracon for availability of F&gt;32MHz</td>
</tr>
<tr>
<td>Operation Mode</td>
<td>Fundamental, AT</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10</td>
<td>-----</td>
<td>+60</td>
<td>°C</td>
<td>See options</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40</td>
<td>-----</td>
<td>+105</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Frequency Tolerance @+25°C</td>
<td>-50</td>
<td>-----</td>
<td>+50</td>
<td>ppm</td>
<td>See options</td>
</tr>
<tr>
<td>Frequency Stability over the Operating Temperature (ref. to +25°C)</td>
<td>-50</td>
<td>-----</td>
<td>+50</td>
<td>ppm</td>
<td>See options</td>
</tr>
<tr>
<td>Equivalent series resistance (R1)</td>
<td>See table 1 below</td>
<td>-----</td>
<td></td>
<td>Ω</td>
<td></td>
</tr>
<tr>
<td>Shunt capacitance (C0)</td>
<td>-----</td>
<td>-----</td>
<td>7.0</td>
<td>pF</td>
<td></td>
</tr>
<tr>
<td>Load capacitance (CL)</td>
<td>-----</td>
<td>18.0</td>
<td>-----</td>
<td>pF</td>
<td>See options</td>
</tr>
<tr>
<td>Drive Level</td>
<td>-----</td>
<td>10</td>
<td>100</td>
<td>µW</td>
<td></td>
</tr>
<tr>
<td>Aging</td>
<td>-5</td>
<td>-----</td>
<td>+5</td>
<td>ppm</td>
<td>@25°C±3°C, First year</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>500</td>
<td>-----</td>
<td>-----</td>
<td>MΩ</td>
<td>@ 100Vdc ± 15V</td>
</tr>
</tbody>
</table>

TABLE 1- Standard ESR

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>ESR(Ω) max</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.000 -23.999</td>
<td>80</td>
</tr>
<tr>
<td>24.000 -32.000</td>
<td>60</td>
</tr>
</tbody>
</table>

OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ABM9 - MHz - - - - -

Frequency in MHz
Please specify the frequency in MHz, e.g. 16.000MHz

Packaging
Blank: Bulk
T: Tape & Reel

Freq. Stability
U: ± 10 ppm(*)
G: ± 15 ppm
X: ± 20 ppm
W: ± 25 ppm
Y: ± 30 ppm
H: ± 35 ppm
Z: ± 100 ppm (#)

(*) -10°C to +60°C only.
( #) for extended temperatures
Contact ABRACON for tighter freq. stability.

CUSTOM ESR if other than standard
□: Specify a value in Ω (e.g.: R40)

Operating Temp.
E: 0°C ~ +70°C
B: -20°C ~ +70°C
C: -30°C ~ +70°C
N: -30°C ~ +85°C
D: -40°C ~ +85°C

Freq. Tolerance
1: ± 10 ppm
7: ± 15 ppm
2: ± 20 ppm
3: ± 25 ppm
4: ± 30 ppm

Load Capacitance (pF)
Please specify CL in pF or S for series

ABRACON IS ISO 9001: 2008 CERTIFIED

Visit www.abracon.com for Terms & Conditions of Sale
30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000| fax 949-546-8001| www.abracon.com

Revised: 04.07.11

APPLICATIONS:

• High density applications.
• Modems, communication and test equipment.
• PMCIA, Wireless applications

FEATURES:

• Low in height; suitable for thin equipment.
• Available +/-10ppm stability -10 ~ +60°C
• Tight tolerance and stability available.
• Suitable for RoHS compliant reflow
OUTLINE DRAWING:

Tape and reel (1,000pcs)

Dimensions : mm

0.16 ± 0.08
(4.0 ± 0.2)

0.098 ± 0.008
(2.5 ± 0.2)

0.052 max.
(0.8)

0.079
(2.6)

0.044 ± 0.006
(1.0 ± 0.015)

0.067
(1.7)

ABM9

4.0 x 2.5 x 0.8mm

Pb RoHS Compliant

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