ABS07

32.768kHz SMD LOW PROFILE CRYSTAL

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

RoHS/RoHS II

3.2 x 1.5 x 0.9 mm

FEATURES:
• Low frequency in small size SMD
• 0.9mm height ideal for high density circuit boards
• Seam sealed ceramic package offers excellent environmental & heat resistance
• Extended temperature -55°C to +125°C for industrial applications

APPLICATIONS:
• Wide range in communication & measuring equipment
• Commercial & Industrial applications
• Wireless communications
• PDA and Smartphone

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</td>
<td>32.768</td>
<td></td>
<td></td>
<td>kHz</td>
<td></td>
</tr>
<tr>
<td>Operation Mode</td>
<td></td>
<td></td>
<td></td>
<td>Flexural Mode (Tuning Fork)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40</td>
<td></td>
<td>+85</td>
<td>ºC</td>
<td>See options</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55</td>
<td></td>
<td>+125</td>
<td>ºC</td>
<td></td>
</tr>
<tr>
<td>Frequency Tolerance @+25°C</td>
<td>-20</td>
<td></td>
<td>+20</td>
<td>ppm</td>
<td>See options</td>
</tr>
<tr>
<td>Temperature Coefficient:</td>
<td>-0.040</td>
<td>-0.036</td>
<td></td>
<td>ppm/T²</td>
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</tr>
<tr>
<td>Turn-over temperature:</td>
<td>+20</td>
<td>+25</td>
<td>+30</td>
<td>ºC</td>
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</tr>
<tr>
<td>Equivalent series resistance (R1)</td>
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<td></td>
<td>70</td>
<td>kΩ</td>
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<tr>
<td>Shunt capacitance (C0)</td>
<td>0.9 ~ 1.2</td>
<td></td>
<td></td>
<td>pF</td>
<td></td>
</tr>
<tr>
<td>Load capacitance (CL)</td>
<td>12.5</td>
<td></td>
<td></td>
<td>pF</td>
<td>See options</td>
</tr>
<tr>
<td>Drive Level</td>
<td>0.1</td>
<td>0.5</td>
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<td>µW</td>
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<tr>
<td>Q value</td>
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<td>30000</td>
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<tr>
<td>Aging@25°C±3°C</td>
<td>-3</td>
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<td></td>
<td>ppm</td>
<td>First year</td>
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<tr>
<td>Insulation Resistance</td>
<td>500</td>
<td></td>
<td></td>
<td>MΩ</td>
<td>@ 100Vdc ± 15V</td>
</tr>
</tbody>
</table>

OPTIONS AND PART IDENTIFICATION (left blank if standard)

ABS07  -  32.768 kHz  -  -  -  -  -  -

- Height
  - Blank: 0.9mm max.
  - 1: 0.65mm max.

- Load Capacitance
  - Blank: 12.5pF
  - 9: 9pF
  - 7: 7pF
  - 6: 6pF
  - 4P*: 4pF

- Operating Temp. Range
  - Blank: -40 ~ +85°C
  - H: -40 ~ +125°C
  - W: -55 ~ +125°C

- Freq. Tolerance
  - Blank: ±20ppm
  - 1: ±10ppm
  - 4: ±30ppm

- Packaging
  - Blank: Bulk
  - T: Tape & Reel (3000pcs/reel)

Note: *Option “4P” is only available with standard height (0.9mm max).
FREQUENCY VS. TEMPERATURE CHARACTERISTICS

FREQUENCY STABILITY VS. TEMPERATURE PREDICTION: TUNING FORK CRYSTAL

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Height (H)</th>
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</thead>
<tbody>
<tr>
<td>ABS07</td>
<td>0.9 mm max.</td>
</tr>
<tr>
<td>ABS071</td>
<td>0.65 mm max.</td>
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</tbody>
</table>

Note: Due to material availability, the outline and finish color of the component may vary. This variation in no way affects the electrical performance of the product.

Dimensions: inches (mm)
32.768kHz SMD LOW PROFILE CRYSTAL

**REFLOW PROFILE**

![Reflow Profile Diagram]

**Dimensions:** 3.2 x 1.5 x 0.9 mm

**TAPE & REEL**

T=Tape and reel (3,000pcs/reel)

![Tape & Reel Diagram]

**Dimensions:** mm

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