32.768kHz SMD LOW PROFILE CRYSTAL

ABS07

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

**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

**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>Flexural Mode (Tuning Fork)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40</td>
<td>+85</td>
<td></td>
<td>°C</td>
<td>See options</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55</td>
<td>+125</td>
<td></td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Frequency Tolerance @+25°C</td>
<td>-20</td>
<td>+20</td>
<td></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>
<td></td>
</tr>
<tr>
<td>Turn-over temperature:</td>
<td>+20</td>
<td>+25</td>
<td>+30</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Equivalent series resistance (R1)</td>
<td></td>
<td>70</td>
<td></td>
<td>kΩ</td>
<td></td>
</tr>
<tr>
<td>Shunt capacitance (C0)</td>
<td></td>
<td>0.9 ~ 1.2</td>
<td></td>
<td>pF</td>
<td></td>
</tr>
<tr>
<td>Load capacitance (CL)</td>
<td></td>
<td>12.5</td>
<td></td>
<td>pF</td>
<td>See options</td>
</tr>
<tr>
<td>Drive Level</td>
<td></td>
<td>0.1</td>
<td>0.5</td>
<td>µW</td>
<td></td>
</tr>
<tr>
<td>Q value</td>
<td></td>
<td>10000</td>
<td>30000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aging@25°C±3°C</td>
<td>-3</td>
<td>3</td>
<td></td>
<td>ppm</td>
<td>First year</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td></td>
<td>500</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).
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**ABS07**

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**FREQUENCY VS. TEMPERATURE CHARACTERISTICS**

![Graph of Frequency Stability Vs. Temperature Prediction: Tuning Fork Crystal]

**OUTLINE DIMENSIONS:**

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

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**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.

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**Dimensions:** inches (mm)
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