**FEATURES:**
- Low resonant impedance
- Built-in load capacitors
- IR reflow capable

**APPLICATIONS:**
- Remote controls, Microprocessor clocks, Mobile phones, DVD & CD-Roms, Electric appliances
- Consumer electronics

**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>8.00</td>
<td>13.00</td>
<td>60.00</td>
<td>MHz</td>
<td>8.00 MHz – 13.00 MHz</td>
</tr>
<tr>
<td></td>
<td>16.00</td>
<td></td>
<td></td>
<td></td>
<td>13.01 MHz – 15.99 MHz</td>
</tr>
<tr>
<td>Resonant Impedance (Ro)</td>
<td>30</td>
<td>60</td>
<td>40</td>
<td>Ω</td>
<td>16.00 MHz – 20.00 MHz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td>20.01 MHz – 25.99 MHz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td>26.00 MHz – 60.00 MHz</td>
</tr>
<tr>
<td>Standard Built-in Capacitance</td>
<td>22 – 20%</td>
<td>22</td>
<td>22 + 20%</td>
<td>pF</td>
<td>8.00 MHz – 13.00 MHz</td>
</tr>
<tr>
<td>(C1+C2)</td>
<td>22 – 20%</td>
<td>22</td>
<td>22 + 20%</td>
<td></td>
<td>13.01 MHz – 15.99 MHz</td>
</tr>
<tr>
<td></td>
<td>10 – 20%</td>
<td>10</td>
<td>10 + 20%</td>
<td></td>
<td>20.01 MHz – 25.99 MHz</td>
</tr>
<tr>
<td></td>
<td>5 – 20%</td>
<td>5</td>
<td>5 + 20%</td>
<td></td>
<td>26.00 MHz – 60.00 MHz</td>
</tr>
<tr>
<td>Frequency Tolerance @ 25 ºC</td>
<td>-0.5</td>
<td>0.5</td>
<td></td>
<td>%</td>
<td>8.00 MHz – 13.00 MHz</td>
</tr>
<tr>
<td>Frequency Stability @ -25ºC to +85ºC</td>
<td>-0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>%</td>
<td>13.01 MHz – 15.99 MHz</td>
</tr>
<tr>
<td>Withstanding Voltage</td>
<td>50</td>
<td>V</td>
<td>D C, 1 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rating Voltage</td>
<td>(1) D.C. Voltage</td>
<td>6</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) A.C. Voltage</td>
<td>15</td>
<td>Vp-p.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>100</td>
<td>MΩ</td>
<td>10 V, 1 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-25</td>
<td>85</td>
<td>ºC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55</td>
<td>85</td>
<td>ºC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aging Rate (Fosc) (10 years)</td>
<td>-0.3</td>
<td>0.3</td>
<td>%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OPTIONS AND PART IDENTIFICATION:**

**AWSCR – X.XXCV - C□□ - □**

- **Frequency**
  - Frequency in MHz

- **Load Capacitance**
  - Contact ABRACON for Built-in Capacitance options

- **Packaging**
  - T: 1000pcs/Reel

Moisture Sensitivity Level (MSL) – This product is not Moisture Sensitive - MSL = 1

Pb in ceramic, exemption (7c-I) RoHS/RoHS II compliant

ABRACON IS ISO9001:2008 CERTIFIED

Visit www.abracon.com for Terms & Conditions of Sale

Revised: 04.25.14

30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com
**TEST CIRCUIT:**

Parts shall be measured under a condition (Temp.: 20±15°C, Humidity: 65±20% R.H.) unless the standard condition (Temp: 25±3°C, Humidity: 65±10% R.H.) is regulated to measure

- **X:** Ceramic Resonator
- **1.** Input
- **2.** Ground
- **3.** Output

**OUTLINE DRAWING:**

**Recommended Land Pattern**

**Dimension:** mm

**A** stands for the thickness of the ceramic element, which varies with the frequency.
3.7 x 3.1mm Industrial Grade Built-in Capacitance Ceramic Resonator

**AWSCR-CV**

Pb in ceramic, exemption (7c-I)  
RoHS/RoHS II compliant

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**SUGGESTED REFLOW:**

![Recommended reflow profile graph]

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**TAPE & REEL:**

**Packaging:**  
T: 1000pcs/Reel

![Tape and reel diagram]

<table>
<thead>
<tr>
<th>Reel Quantity</th>
<th>ΦA</th>
<th>ΦB</th>
<th>W</th>
<th>T</th>
<th>Pieces per reel</th>
<th>Carrier tape size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 (T)</td>
<td>180±3</td>
<td>60 min.</td>
<td>12.4 min</td>
<td>19.4 max</td>
<td>1000 typ.</td>
<td>12</td>
</tr>
</tbody>
</table>

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**Note:** upon opening the original packaging, it is recommended that the product be used within 1 year. If the product will not be used within 1 year, it is recommended that the product be re-sealed in airtight packaging according to MSL 1 requirements to maintain solderability.

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**CAUTION:**

1. Do not apply excess mechanical stress to the component body or terminations. Do not attempt to re-form or bend the components as this will cause damage to the component.
2. This component is not hermetically sealed. Do not clean or wash the component.
3. Reflow Soldering: Do not use strong acidity flux, such as flux with chlorine content of greater than 0.2wt% during Reflow Soldering.
4. Do not expose the component to open flame.
5. This specification applies to the functionality of the component as a single unit.
6. Storage Conditions: If the product is to be stored for a period greater than Six Months after the Delivery Date, it is recommended that customers confirm the solderability and characteristics for the product prior to use.
7. This product is not recommended for use in the following applications: Automotive, Medical, Military, Safety, or any other high-reliability, life dependant applications. Contact Abracon Corporation prior to using this product when in doubt.