Vectron International’s XR-B (HC43) Series Cold Weld crystals provide a high reliability design in a rugged mount. These precision crystals offer excellent performance characteristics and tight stabilities in a wide range of frequencies. Outstanding performance in a cost effective industry standard package make this an ideal crystal for a wide range of applications.

### Features
- Cost Effective - Volume Production Available
- Industry Standard Holder (smaller can heights available)
- DR (SC-IT) Cut Fundamental and OT Modes (3rd, 5th, 7th)
- Cold Weld (HC43/U)
- Tight Stabilities and Tolerances, Excellent Aging
- Robust Rugged Design for harsh environments
- Surface Mount Lead Forming options available
- Swept Quartz & Hi-Rel Screening Options Available
- High Temperature Options to +200°C

### Applications
- Telecommunications
- Military & Defense
- Base Station
- Medical-Test and Measurement Instrumentation
- Precision Oscillators (TCXO, VCXO, OCXO)

Note: HC43 (XR-B series for best precision/stability-Cold Weld)

### Standard Physical Specifications

<table>
<thead>
<tr>
<th>HEIGHT CODE OPTION</th>
<th>PACKAGE EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XR-A SERIES</td>
</tr>
<tr>
<td>inches</td>
<td>mm</td>
</tr>
<tr>
<td>1</td>
<td>0.530</td>
</tr>
<tr>
<td>2</td>
<td>0.440</td>
</tr>
</tbody>
</table>

Nominal dimensions specified in inches and millimeters (mm). Specification subject to change without notice.

SURFACE MOUNT APPLICATIONS: Special lead forming is available for surface mount applications
Vectron International designs and manufactures HC49 series resistance weld crystals for a wide variety of commercial and high reliability applications. Our proven processes yield excellent aging and low perturbations. We have tight controls over series resistance, motional capacitance, temperature characteristics and other parameters critical to your application. We primarily build to customer specifications but we’ve optimized designs on all frequencies that are commonly used in telecommunications. Tighter performance requirements than those shown above may be available.

Please feel free to contact us with your questions. We are here to assist you with selecting the best performing and most cost effective crystal for your application.

Typical Environmental Specifications

<table>
<thead>
<tr>
<th>TEST DESCRIPTION</th>
<th>SPECIFICATION REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHOCK</td>
<td>MIL-STD-202, Method 213, Cond. C (100g, 6ms, Half-Sine)</td>
</tr>
<tr>
<td>VIBRATION</td>
<td>MIL-STD-202, Method 201/204 (Random-Sine, 20g)</td>
</tr>
<tr>
<td>TEMPERATURE CYCLE</td>
<td>MIL-STD-883, Method 1010 (-55°C/+125°C), 10 cycles</td>
</tr>
<tr>
<td>THERMAL SHOCK</td>
<td>MIL-STD-202, Method 107</td>
</tr>
<tr>
<td>MOISTURE RESISTANCE</td>
<td>MIL-STD-202, Method 106</td>
</tr>
<tr>
<td>SALT ATMOSPHERE</td>
<td>MIL-STD-202, Method 101</td>
</tr>
<tr>
<td>ACCELERATION</td>
<td>MIL-STD-883, Method 2001, Condition A (5,000g)</td>
</tr>
<tr>
<td>TERMINAL STRENGTH</td>
<td>MIL-STD-202, Method 211 (2lbs)</td>
</tr>
<tr>
<td>PIND</td>
<td>MIL-STD-883, Method 2020, Condition A or B (20g, 10g)</td>
</tr>
<tr>
<td>FINE LEAK</td>
<td>MIL-STD-202, Method 112, Condition C-III (1x10^{-8} atm/cc²)</td>
</tr>
<tr>
<td>GROSS LEAK</td>
<td>MIL-STD-202, Method 112, Condition D</td>
</tr>
<tr>
<td>RESISTANCE TO SOLVENTS</td>
<td>MIL-STD-202, Method 215</td>
</tr>
<tr>
<td>RESISTANCE TO SOLDERING HEAT</td>
<td>MIL-STD-202, Method 210, Condition K</td>
</tr>
<tr>
<td>HIGH TEMPERATURE STORAGE</td>
<td>MIL-STD-883, Method 1008, Condition C (+125°C, 168 hours)</td>
</tr>
<tr>
<td>LOW TEMPERATURE STORAGE</td>
<td>MIL-PRF-3098</td>
</tr>
</tbody>
</table>

Vectron is uniquely equipped to handle all of your special test requirements. All environmental and qualification related tests are performed in house. We’ve demonstrated compliance and the ability to test to the requirements of all governing industry and military crystal specifications (past and present).

Some of which include:
- MIL-PRF-3098
- MIL-C-49468
- MIL-C-3098
- TOR-2006 (8583)-5236
- EEE-INST-002
- MIL-PRF-55310
- MIL-STD-202
- MIL-STD-883
- OTHERS
**PART NUMBER ORDERING INFORMATION**

### A

- **CODE**: XR
- **CRYSTAL RESONATOR**

### B

- **CODE**: XR
- **PACKAGE ATTRIBUTES**
- **MODE**: LOAD CAPACITANCE (CL)
- **OPERATING TEMPERATURE RANGE**
- **TEMPERATURE STABILITY**
- **FREQUENCY CALIBRATION TEMPERATURE**
- **OUTPUT FREQUENCY (MHZ)**
- **ATTRIBUTE (TBD)**

**PART NUMBER CODES** (attribute details)

<table>
<thead>
<tr>
<th>Code</th>
<th>Package Type</th>
<th>Package Height (A)</th>
<th>Seal Method</th>
<th>Lead Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>HC43</td>
<td>.530 (13.46)</td>
<td>1 CW</td>
<td>1 STANDARD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.440 (11.17)</td>
<td></td>
<td>2 LEAD FORM (SMT)</td>
</tr>
</tbody>
</table>

**Note**: not all combination of options are available. Other specification parameters may be available (i.e., tighter tolerances/stabilities). Please consult the factory for your specific needs.
Additional Technical Information

Typical Wave Solder Reflow Profile (Sn-Pb)

Diagrams of Series and Parallel Resonant Circuits

Equivalent Circuit of a Crystal Resonator

For Additional Information, Please Contact

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