Crystal Unit
- For Automotive application -

Feature and Structure

✓ Small Size : 2.5 x 2.0 x 0.8mm
✓ High Quality : Low ESR, High shock resistance
✓ Economical & Robust Design
  Simple structure using Murata’s proven package technology.
  Particle screening process for enhanced reliability.
✓ Complied with AEC-Q200

Application

XRCHA-F-A Series For Automotive.
Power Train (ex. Engine/Transmission management ECU)
ADAS (ex. Camera for driver assist, Image processing, Emergency Brake Assist ECU)
Chassis, Safety applications …

Frequency shift by temperature

![Graph showing frequency shift by temperature](image)

Compatibility

Self-alignment test on conventional 3225 crystal land pattern (2 terminals)
Before reflow
After reflow

Compatible land pattern

Product specifications are as of July 2015. They are subject to change without notice.
Murata Manufacturing Co., Ltd.
No. VPPT-HCRJ078A-D
High Performance

Murata crystal (2520*) and conventional crystal (3225*) have same ESR and DLD performance. Murata can offer same performance with smaller package size to contribute downsizing for new design.

Drive level VS $\Delta F$  

Drive level VS ESR (*16MHz)

Lineup

<table>
<thead>
<tr>
<th>P/N</th>
<th>Freq. (MHz)</th>
<th>Freq. Tolerance at +25 °C (ppm max.)</th>
<th>Frequency Shift By Temp. (ppm max.)</th>
<th>ESR (ohm max.)</th>
<th>Frequency Aging (ppm/Y)</th>
<th>Load Capacitance (pF)</th>
<th>Drive Level (μW max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XRCHA16M000F0A01R0</td>
<td>16.0000</td>
<td></td>
<td></td>
<td>100</td>
<td>80</td>
<td>8 +/-0.1</td>
<td>300</td>
</tr>
<tr>
<td>XRCHA20M000F0A01R0</td>
<td>20.0000</td>
<td>$\pm$100 (-40 to +125 °C)</td>
<td></td>
<td>80</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XRCHA24M000F0A01R0</td>
<td>24.0000</td>
<td>$\pm$100 (-40 to +150 °C)</td>
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