Ceramic Resonators (CERALOCK®)
Lead Type Three-Terminals CSTLS Series

“CERALOCK” with built-in load capacitors. MURATA’s ceramic resonator, “CERALOCK”, has been widely applied as the most suitable component for clock oscillators in a broad range of microprocessors. The CSTLS series can be used in the design of oscillation circuits not requiring external load capacitors, enabling both high-density mounting and cost reduction.

■ Features
1. Oscillation circuits do not require external load capacitors.
2. The series is stable over a wide temperature range.
3. The resonators are compact, light weight and exhibit superior shock resistance performance.
4. They enable the design of oscillator circuits requiring no adjustment.
5. The series is inexpensive and available in stable supply.
6. There are some variation of built-in capacitance value to apply various of IC.

■ Applications
- DTMF generators.
- Clock oscillators for microcomputers.
- Remote control units.
- Automated office equipment.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Oscillating Frequency (MHz)</th>
<th>Initial Tolerance (%)</th>
<th>Temp. Stability (%)</th>
<th>Temperature Range (°C)</th>
<th>Aging (10 years) (%)</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSTLS_G</td>
<td>3.40 to 10.00</td>
<td>±0.5</td>
<td>±0.2</td>
<td>-20 to 80</td>
<td>±0.2</td>
<td>For consumer electronics</td>
</tr>
<tr>
<td>CSTLS_X</td>
<td>16.00 to 70.00</td>
<td>±0.5</td>
<td>±0.2</td>
<td>-20 to 80</td>
<td>±0.2</td>
<td>For consumer electronics</td>
</tr>
</tbody>
</table>

Irregular or stop oscillation may occur under unmatched circuit conditions. Please check the actual conditions prior to use. The order quantity should be an integral multiple of the “Minimum Quantity” shown in the packaging page.

■ Oscillation Frequency Measuring Circuit

![Oscillation Frequency Measuring Circuit Diagram]