

ECN/PCN No.: 5100

| For Manufacturer                                                                                                                                                                                                                                                            |                                                                   |                                                                                                                        |                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Product Description:</b><br>Oscilent-Crystal                                                                                                                                                                                                                             | <b>Abracon Part Number / Part Series:</b><br>253                  | <input type="checkbox"/> Documentation only<br><input type="checkbox"/> ECN<br><input checked="" type="checkbox"/> EOL | <input checked="" type="checkbox"/> Series<br><input type="checkbox"/> Part Number |
| <b>Affected Revision:</b><br>REV A                                                                                                                                                                                                                                          | <b>New Revision:</b><br>EOL                                       | <b>Application:</b><br><input type="checkbox"/> Safety<br><input checked="" type="checkbox"/> Non-Safety               |                                                                                    |
| <b>Prior to Change:</b><br>ACTIVE                                                                                                                                                                                                                                           |                                                                   |                                                                                                                        |                                                                                    |
| <b>After Change:</b><br>EOL                                                                                                                                                                                                                                                 |                                                                   |                                                                                                                        |                                                                                    |
| <b>Cause/Reason for Change:</b><br>As part of an effort to streamline our portfolio and better serve customers, we are discontinuing select products and offering a Last Time Buy period.                                                                                   |                                                                   |                                                                                                                        |                                                                                    |
| Change Plan                                                                                                                                                                                                                                                                 |                                                                   |                                                                                                                        |                                                                                    |
| <b>Effective Date:</b><br>11/27/2025                                                                                                                                                                                                                                        |                                                                   | <b>Additional Remarks:</b>                                                                                             |                                                                                    |
| <b>Change Declaration:</b><br>Product Discontinuation                                                                                                                                                                                                                       |                                                                   |                                                                                                                        |                                                                                    |
| <b>Issued Date:</b><br>8/29/2025                                                                                                                                                                                                                                            | <b>Issued By:</b><br><i>Stephanie Lopez</i>                       | <b>Issued Department:</b><br>Engineering                                                                               |                                                                                    |
| <b>Approval:</b><br><i>Thomas Culhane</i><br>Engineering Director                                                                                                                                                                                                           | <b>Approval:</b><br><i>Reuben Quintanilla</i><br>Quality Director | <b>Approval:</b><br><i>Ying Huang</i><br>Purchasing Director                                                           |                                                                                    |
| For Abracon EOL only                                                                                                                                                                                                                                                        |                                                                   |                                                                                                                        |                                                                                    |
| <b>Last Time Buy (if applicable):</b><br>2/27/2026                                                                                                                                                                                                                          |                                                                   | <b>Alternate Part Number / Part Series:</b><br>N/A                                                                     |                                                                                    |
| <b>Additional Approval:</b>                                                                                                                                                                                                                                                 | <b>Additional Approval:</b>                                       | <b>Additional Approval:</b>                                                                                            |                                                                                    |
| Customer Approval (If Applicable)                                                                                                                                                                                                                                           |                                                                   |                                                                                                                        |                                                                                    |
| <b>Qualification Status:</b><br><div style="text-align: center;"> <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted </div> <p><i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i></p> |                                                                   |                                                                                                                        |                                                                                    |
| <b>Customer Part Number:</b>                                                                                                                                                                                                                                                |                                                                   | <b>Customer Project:</b>                                                                                               |                                                                                    |
| <b>Company Name:</b>                                                                                                                                                                                                                                                        | <b>Company Representative:</b>                                    | <b>Representative Signature:</b>                                                                                       |                                                                                    |
| <b>Customer Remarks:</b>                                                                                                                                                                                                                                                    |                                                                   |                                                                                                                        |                                                                                    |

| Package       | Description        |
|---------------|--------------------|
| HC-49SM 4 Pad | SMD Quartz Crystal |

## Features

- Cost Effective
- Low Profile
- Space saving design
- Tape and Reel



## Electrical Characteristics

| Parameter             | Conditions     | Characteristics                           | Units |
|-----------------------|----------------|-------------------------------------------|-------|
| Frequency Range       | f <sub>0</sub> | 3.579545 ~ 30.999                         | MHz   |
| Frequency Tolerance   | Ref @ +25°C    | ±30 (Std.) / ±15, ±50 (Option)            | PPM   |
| Temperature Stability | TL             | ±50 (Std.) / ±30, ±100 (Option)           | PPM   |
| Operating Temperature | TOPR           | -20 ~ +70 (Std.) / -40 ~ +85 (Option)     | °C    |
| Storage Temperature   | TSTG           | -40 ~ +85                                 | °C    |
| Resistance            | ESR            | (See Table 1)                             | Ohms  |
| Mode of Operation     |                | Fundamental                               |       |
| Shunt Capacitance     | C <sub>0</sub> | 7.0 max.                                  | pF    |
| Load Capacitance      | C <sub>L</sub> | 18.0 (Std.) / 10 ~ 50 and Series (Option) | pF    |
| Drive Level           | DL             | 1.0 max.                                  | mW    |
| Aging (First Year)    | @ +25°C        | ±5.0                                      | PPM/Y |
| Insulation Resistance | IR             | 500 (DC100 ±10V) min.                     | Mohm  |

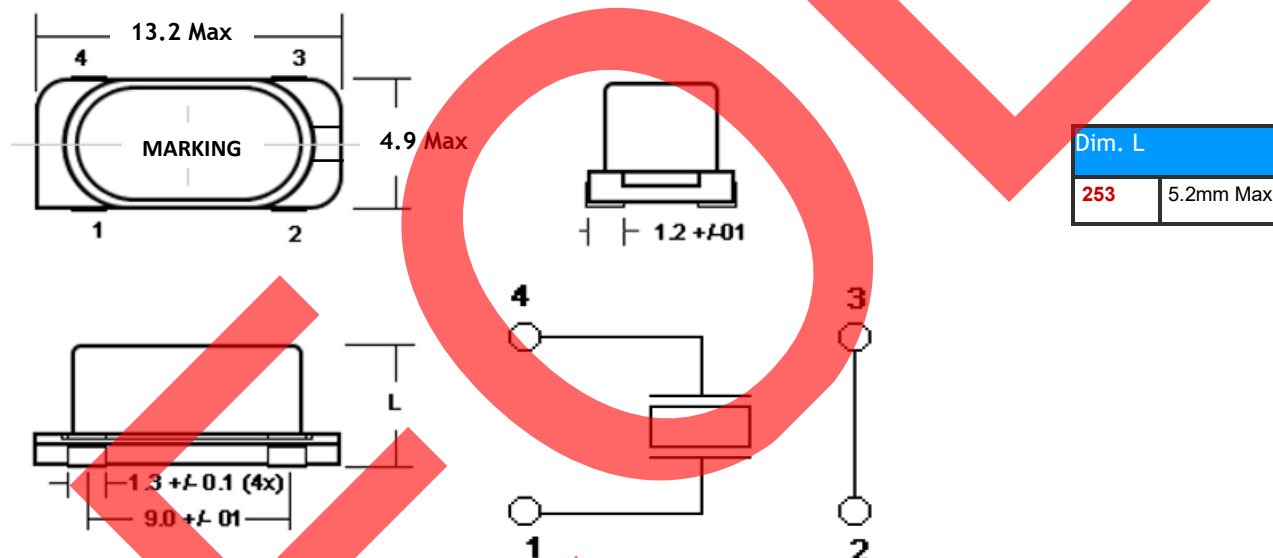
**Table 1: Operation Mode and Motional Resistance**

| Frequency Range  | Mode           | Ohm Max | Frequency Range | Mode           | Ohm Max |
|------------------|----------------|---------|-----------------|----------------|---------|
| 3.579545 ~ 4.999 | Fundamental/AT | 200     | 15.0 ~ 15.999   | Fundamental/AT | 60      |
| 5.0 ~ 5.999      | Fundamental/AT | 150     | 16.0 ~ 23.999   | Fundamental/AT | 50      |
| 6.0 ~ 7.999      | Fundamental/AT | 120     | 24.0 ~ 30.999   | Fundamental/AT | 40      |
| 8.0 ~ 8.999      | Fundamental/AT | 90      |                 |                |         |
| 9.0 ~ 9.999      | Fundamental/AT | 80      |                 |                |         |
| 10.0 ~ 14.999    | Fundamental/AT | 70      |                 |                |         |

Table 2: Part Numbering Guide

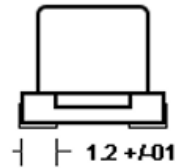
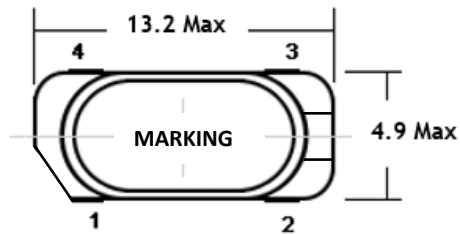
| Series Number                                                                                                                                                                                                             | Frequency                                                                                                  | Load Capacitance                                     | Tolerance @ +25oC                                                | Tolerance Over Temp ( oC )                                     | Operating Temp ( oC )      | Packaging                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------|----------------------------|---------------------------------|
| 253                                                                                                                                                                                                                       | - 12.0M                                                                                                    | - 18                                                 | - 50                                                             | N                                                              | W                          | - TR                            |
| HC-49SM                                                                                                                                                                                                                   | Enter desired standard freq. and enter here<br>e.g. 2.048M for 2.048 MHz OR<br>enter any desire frequency. | Enter desired capacitance here.<br>e.g. -20 for 20pF | Blank * = $\pm 30$ PPM<br>15 = $\pm 15$ PPM<br>50 = $\pm 50$ PPM | Blank* = $\pm 50$ PPM<br>G = $\pm 30$ PPM<br>N = $\pm 100$ PPM | S = -20~+70<br>W = -40~+85 | Blank* = Bulk<br>TR = Tape/Reel |
| <p><b>NOTE:</b> Deviations on all parameters available. Please consult Oscilent for details.</p> <p><b>*STANDARDS:</b> "Blank" part number selections indicate standard variables for that particular characteristic.</p> |                                                                                                            |                                                      |                                                                  |                                                                |                            |                                 |

## Package Dimensions

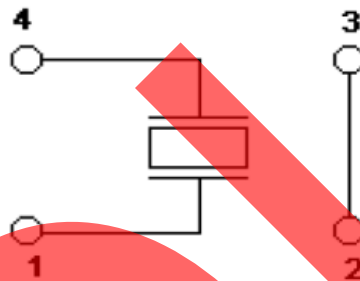
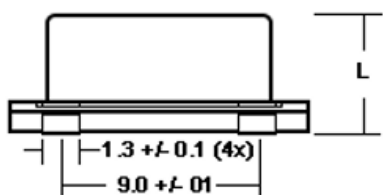


Note: Bottom side; package requires use of Epoxy Sealant.

## Alternative Package Dimensions

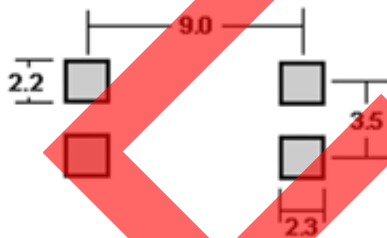


| Dimension L |           |
|-------------|-----------|
| <b>253</b>  | 5.2mm Max |



Note: Bottom side; package does not require use of Epoxy Sealant.

## Solder Pad Layout





**OSCILENT**

[illegible]