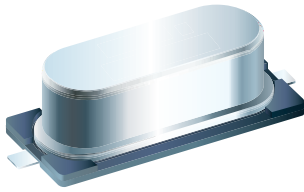




## 49MD 系列



## Type 12.5 x 4.5 mm Crystal

### FEATURE

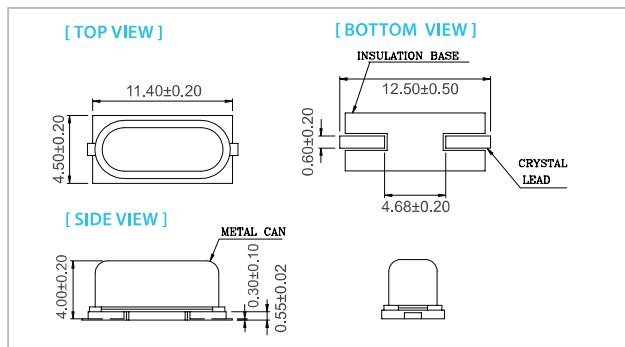
- Typical 12.5 x 4.5 x 4.0 mm metal can SMD package.
- 24mm width Tape & Reel package for automatic assembly.

### TYPICAL APPLICATION

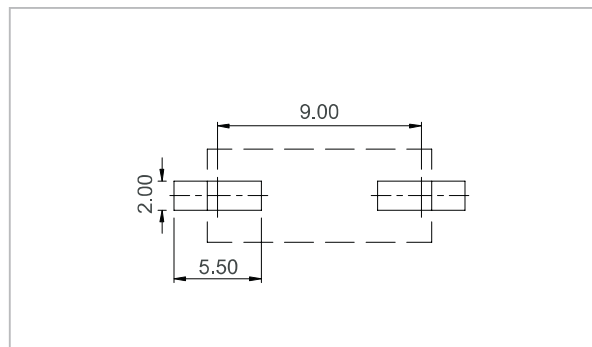
- Automotive
- Bluetooth, Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WDCT

|  |                                     |
|--|-------------------------------------|
| Frequency range                                      | 3.00~100.00MHZ                      |
| Load Capacitance                                     | Series, 6~32pf, or specify          |
| Frequency Tolerance(at25 °C )                        | ± 10 PPM± 20 PPM± 30 PPM or specify |
| Frequency stability Over Operating Temperature Range | ± 10 PPM± 20 PPM± 30 PPM or specify |
| Operating Temperature Range                          | -20~+70°C -40~+85°C or specify      |
| Storage Temperature Range                            | -40~+85°C                           |
| Shunt Capacitance(C0)                                | 7pf-Max                             |
| Drive Level  | 1~1000uW (100uW typical)            |
| Insulation Resistance                                | 500m Minimum at 100VDC              |
| Aging(at25°C)  | ± 3PPM/year Max.                    |

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

| Parameter                          | Min.                          | Typical | Max. | Unit       |
|------------------------------------|-------------------------------|---------|------|------------|
| Storage Temp. Range                | -55                           | -       | 125  | °C         |
| Standard Frequency                 | 4.096, 10.368, 16, 25, 32, 48 |         |      | MHz        |
| Level of Drive                     | -                             | 10      | 800  | µw         |
| Shunt Capacitance (Co)             | -                             | -       | 7.0  | pF         |
| Insulation Resistance              | 500 MΩ @ DC100V               | -       | -    |            |
| Aging (@25°C 1 <sup>st</sup> year) |                               | ±5.0    |      | ppm / year |

### FREQ. STABILITY vs. TEMP. RANGE

| Temp. (°C) | ppm | ±5 | ±10 | ±15 | ±20 |
|------------|-----|----|-----|-----|-----|
| -10 ~ +60  |     | ×  | ○   | ○   | ○   |
| -20 ~ +70  |     | ×  | △   | ○   | ○   |
| -40 ~ +85  |     | ×  | ×   | ×   | ○   |



# Model Numbering Guide – Crystal Units

## Available options

| ①    | ②               | ③               | ④                     |                        | ⑤                     |                                      |  |  |            |                |      |
|------|-----------------|-----------------|-----------------------|------------------------|-----------------------|--------------------------------------|--|--|------------|----------------|------|
| Type | package (mm)    | Frequency range | Load Capacitance (pF) | Freq. Tol. @25°C (ppm) | Freq. Stability (ppm) | Temp. Range(°C)                      | Special Requirement  | Oscillator Mode                            | Appearance | Lead Free      | Dash |
| 1612 | 1.6x1.2         | 3.00~100.00MHZ  | 6                     | ±5                     | ±5                    | A:-20~+70<br>E:-40~+85<br>J:-40~+105 | For Automotive Spurious DLD No Special Pullability Several | AT Fundamental AT 3 <sup>rd</sup> Overtone | Normal     | RoHs Compliant | -    |
| 2016 | 2.0x1.6         |                 | 7                     | ±10                    | ±10                   |                                      |  |  |            |                |      |
| 2520 | 2.5x2.0         |                 | 8                     | ±15                    | ±15                   |                                      |  |  |            |                |      |
| 3225 | 3.2x2.5         |                 | 9                     | ±20                    | ±20                   |                                      |  |  |            |                |      |
| 5032 | 5.0x3.2 (4Pads) |                 | 10                    | ±25                    | ±25                   |                                      |  |  |            |                |      |
| 6035 | 6.0x3.5         |                 | 12                    | ±30                    | ±30                   |                                      |  |  |            |                |      |
| 3225 | 3.2x2.5         |                 | 15                    | ±40                    | ±40                   |                                      |  |  |            |                |      |
| 5032 | 5.0x3.2 (2Pads) |                 | 16                    | ±50                    | ±50                   |                                      |  |  |            |                |      |
| 8045 | 8.0x4.5         |                 | 18                    | ±100                   | ±100                  |                                      |  |  |            |                |      |
| 49S  | 11.1x4.68       |                 | 20                    | ±150                   | ±150                  |                                      |  |  |            |                |      |
| 49MD | 13.0x4.85       |                 | 22                    |                        | ±150 above            |                                      |  |  |            |                |      |
|      |                 |                 | 25                    |                        |                       |                                      |  |  |            |                |      |
|      |                 |                 | 30                    |                        |                       |                                      |  |  |            |                |      |
|      |                 | 32              |                       |                        |                       |                                      |  |  |            |                |      |

产品编号:  -  -  -  -

① ② ③ ④ ⑤  
 ①型号 ②频率 ③负载电容 ④频率稳定度(X10<sup>-6</sup>, +25°C) ⑤温度

范例: 49MD-12.00-20-20-20/A  
 ① ② ③ ④ ⑤

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