CITIZEN

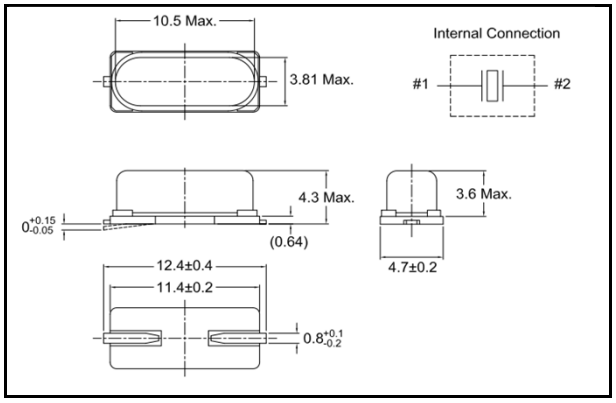
# AT-CUT CRYSTAL UNIT (SMD · Metal-can Type)

**RoHS compliant** | **HCM49** | **1,000pcs/reel**

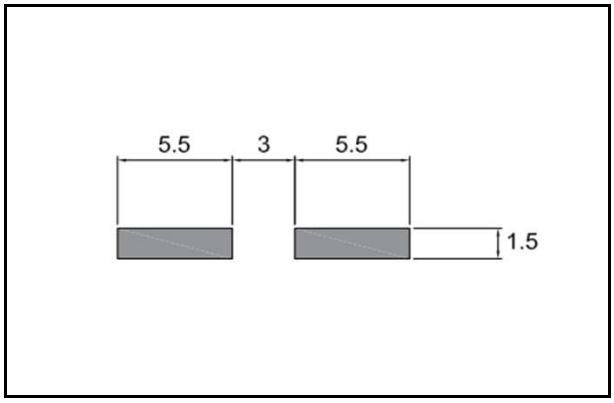
## ■ FEATURES

- Frequency range : 3.5 ～ 50.0MHz
- External dimensions (mm)
  L : 11.4 x W : 4.7 x H : 4.3
- Applications
  Consumer products

## ■ DIMENSION [mm]




## ■ SOLDER PAD LAYOUT [mm]




## ■ STANDARD SPECIFICATIONS

| Item | Model | HCM49 | Conditions |
|---|---|---|---|
| Nominal Frequency | $f_0$ | 3.5MHz ～ 30.0MHz (Fundamental)<br>30.0MHz ～ 50.0MHz (3rd Overtone) | Please contact us for frequencies available |
| Frequency Tolerance | $\Delta f/f_0$ | ±30ppm | at 25°C |
| Frequency Tolerance over Operating Temperature Range | $\Delta f/f_0$ | below 6.0MHz:±50ppm<br>above 6.0MHz:±30ppm | −10°C～+60°C |
| Operating Temperature Range | $T_{OPR}$ | −40°C ～ +85°C | |
| Storage Temperature Range | $T_{STR}$ | −55°C ～ +125°C | |
| Motional (series) resistance | $R_1$ | Refer to the following table | at 25°C |
| Load capacitance | $C_L$ | Fundamental:10.0pF ～ ∞<br>3rd Overtone:5.0pF ～ ∞ | Please specify your requirement |
| Shunt capacitance | $C_0$ | 7.0pF Max. | |
| Level of drive | $D_L$ | 100 μW | |
| Insulation Resistance | $I_R$ | 500MΩ Min. | DC100V±15V |
| Aging (first year) | $\Delta f/f_0$ | ±5ppm Max. | 25°C±3°C |

## ■ MOTIONAL (SERIES) RESISTANCE ($R_1$)

| Freq. Range (MHz) | 3.5≦f0<4.0 | 4.0≦f0<6.0 | 6.0≦f0<10.0 | 10.0≦f0<14.0 | 14.0≦f0<30.0 | 30.0≦f0<36.0 | 36.0≦f0≦50.0 |
|---|---|---|---|---|---|---|---|
| Mode | Fundamental | Fundamental | Fundamental | Fundamental | Fundamental | 3rd Overtone | 3rd Overtone |
| $R_1$ | 200Ω Max. | 150Ω Max. | 100Ω Max. | 80Ω Max. | 50Ω Max. | 140Ω Max. | 100Ω Max. |

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## ■ PART NUMBERING SYSTEM

HCM49 20000000 A B J T - □□□

**Frequency**

Please specify the frequency in Hz.

**Frequency Tolerance (at 25℃)**

| | |
|---|---|
| A | ±30ppm (STD) |
| B | ±50ppm (STD) |

**Frequency Tolerance over Operating Temp. Range**

| | |
|---|---|
| A | ±30ppm Range −10℃ ～ +60℃ |
| B | ±50ppm Range −10℃ ～ +60℃ |
| G | ±50ppm Range −40℃ ～ +85℃ |
| H | ±100ppm Range −40℃ ～ +85℃ |

**Load capacitance (CL)**

| | |
|---|---|
| I | 16.0pF |
| J | 18.0pF |
| K | 20.0pF |

**Package specification**

| | |
|---|---|
| T | Only Tape & Reel |

**CITIZEN management code**

Ref. Code for internal use.

*Please contact us for specifications available.

## ■ Part Marking [standard]


f : The first 4 digits of Frequency including the decimal point

C : Manufacture's ID Code

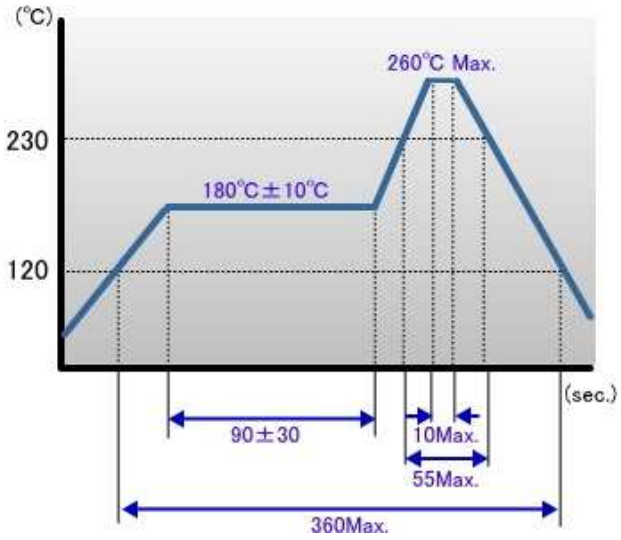
y : The last digit of production year

m : Production month (See Table.1)

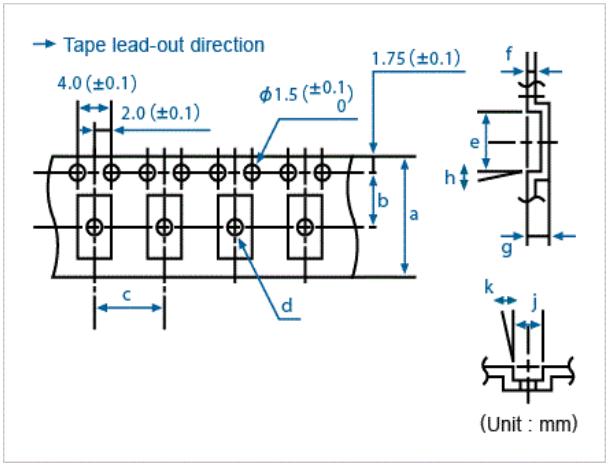
Table.1

| Month | Jan | Feb | ⋯ | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|
| Code | 1 | 2 | ⋯ | 9 | X | Y | Z |

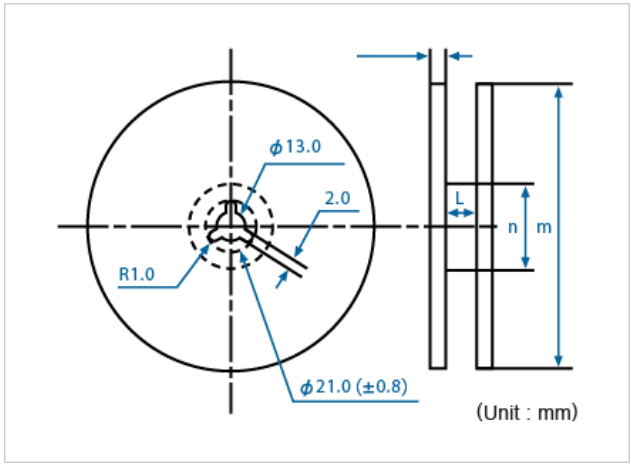
## ■ Reflow profile




## ■ Packing




Conforming to JIS C 0806 TB1208NEIAJ and RC−1009B TE1208N




Conforming to JIS C 0806 R12R and EIAJ RC−1009B R15

| Q'ty/reel | a | b | c | d (φ) | e | f | g | h | j | k | l | m (φ) | n (φ) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,000 | 24.0 | 11.5 | 12.0 | 2.0 | 14.1 | 0.4 | 4.2 | 5° | 6.5 | 5° | 25.5 | 330 | 80 |

Product specifications are subject to change without notice.

Rev.2

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