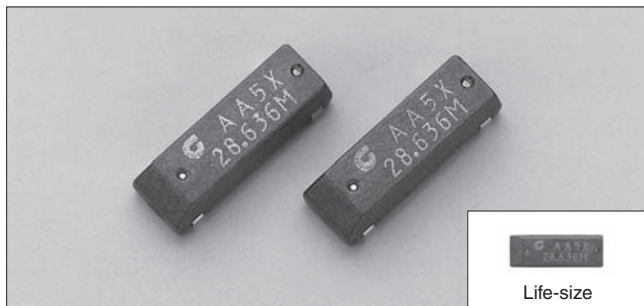


# AT-CUT CRYSTAL UNIT (SMD • Plastic Package)

## CM309S

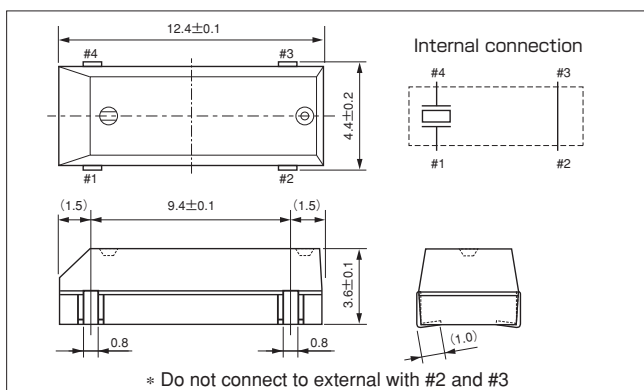
1000pcs/reel



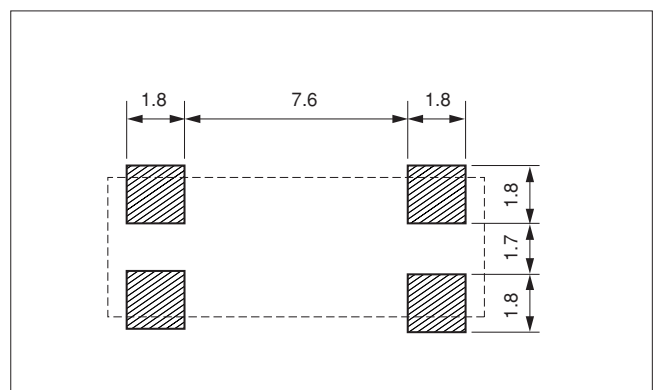
### FEATURES

- Embedded with heat resistant cylinder type crystal bring highly stable characteristics.
- Automatic mounting and reflowable type.
- Suitable for various applications such as communication devices, AV devices, automotive devices and measuring instruments.

### DIMENSION [mm]



### SOLDER PAD LAYOUT [mm]



### STANDARD SPECIFICATIONS

| Item                                                 | Model          | CM309S                           | Conditions                                     |
|------------------------------------------------------|----------------|----------------------------------|------------------------------------------------|
| Nominal Frequency                                    | $f_0$          | 3.5MHz~34.0MHz (Fundamental)     | Need to contact us for the available frequency |
|                                                      |                | 27.0MHz~70.0MHz (3rd Overtone)   |                                                |
| Frequency Tolerance                                  | $\Delta f/f_0$ | $\pm 30\text{ppm}$               | at 25°C                                        |
| Frequency Tolerance over Operating Temperature Range | $\Delta f/f_0$ | below 6.0MHz: $\pm 50\text{ppm}$ | -10°C ~ +60°C                                  |
|                                                      |                | above 6.0MHz: $\pm 30\text{ppm}$ | See figure 3 in P4                             |
| 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                                     | $C_L$          | 16.0pF, 18.0pF                   | Need to specify your requirement               |
| Shunt capacitance                                    | $C_0$          | 7.0pF Max.                       |                                                |
| Level of drive                                       | $D_L$          | 100 $\mu\text{W}$                |                                                |
| Insulation Resistance                                | $I_R$          | 500M $\Omega$ Min.               | DC100V $\pm 15\text{V}$                        |
| Aging (first year)                                   | $\Delta f/f_0$ | $\pm 5\text{ppm}$ Max.           | 25°C $\pm 3^\circ\text{C}$                     |

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

| Frequency Range | 3.5MHz≤f <sub>0</sub> <4.0MHz | 4.0MHz ≤ f <sub>0</sub> < 6.0MHz | 6.0MHz≤f <sub>0</sub> <10MHz | 10MHz≤f <sub>0</sub> <27MHz | 27MHz≤f <sub>0</sub> <36MHz |              | 36MHz≤f <sub>0</sub> ≤70MHz |
|-----------------|-------------------------------|----------------------------------|------------------------------|-----------------------------|-----------------------------|--------------|-----------------------------|
| Mode            | Fundamental                   | Fundamental                      | Fundamental                  | Fundamental                 | Fundamental                 | 3rd Overtone | 3rd Overtone                |
| R <sub>1</sub>  | 200 Ω Max.                    | 150 Ω Max.                       | 100 Ω Max.                   | 50 Ω Max.                   | 50 Ω Max.                   | 100 Ω Max.   | 80 Ω Max.                   |