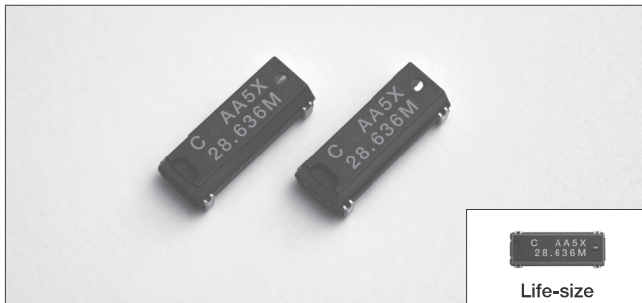


# AT-CUT CRYSTAL UNIT (SMD • Plastic Package)

RoHS compliant

## CM309E

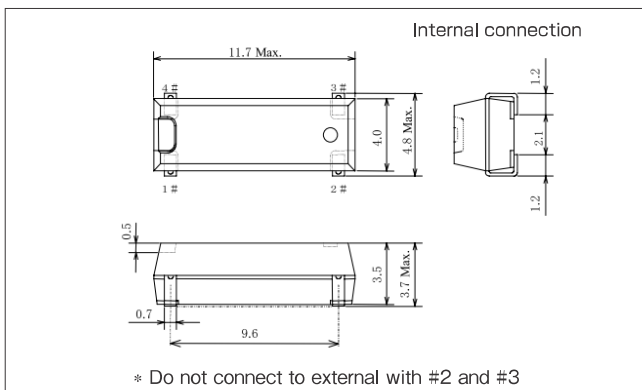
1000pcs/reel



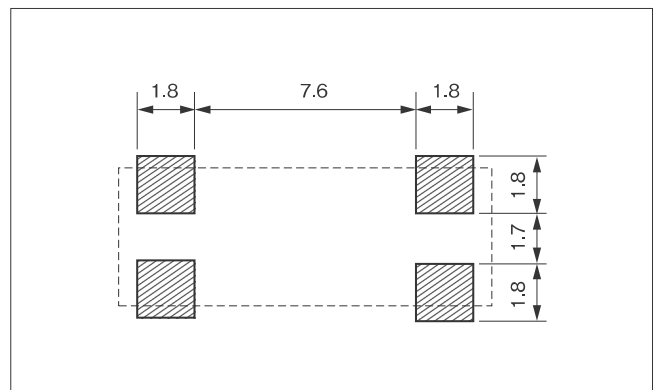
### FEATURES

- 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, and measuring instruments.

### DIMENSION [mm]



### SOLDER PAD LAYOUT [mm]



### STANDARD SPECIFICATIONS

Item	Model	CM309E	Conditions
Nominal Frequency	f <sub>0</sub>	4.000MHz~29.999MHz (Fundamental)	Need to contact us for the available frequency
		30.000MHz~64.000MHz (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 5.5MHz: $\pm 50\text{ppm}$	-10°C ~ +60°C See figure 3 in P4
		above 5.5MHz: $\pm 30\text{ppm}$	
Operating Temperature Range	T <sub>OPR</sub>	-40°C ~ +85°C	
Storage Temperature Range	T <sub>STR</sub>	-55°C ~ +125°C	
Motional (series) resistance	R <sub>1</sub>	Refer to the following table	at 25°C
Load capacitance	C <sub>L</sub>	16.0pF, 18.0pF	Need to specify your requirement
Shunt capacitance	C <sub>0</sub>	5.0pF Max.	
Level of drive	D <sub>L</sub>	100 μW	
Insulation Resistance	I <sub>R</sub>	500MΩ Min.	DC100V ± 15V
Aging (first year)	$\Delta f/f_0$	$\pm 5\text{ppm Max.}$	25°C ± 3°C

### MOTIONAL (SERIES) RESISTANCE (R<sub>1</sub>)

Frequency Range	4.0MHz ≤ f <sub>0</sub> < 5.5MHz	5.5MHz ≤ f <sub>0</sub> < 6.0MHz	6.0MHz ≤ f <sub>0</sub> < 10.0MHz	10.0MHz ≤ f <sub>0</sub> < 12.0MHz	12.0MHz ≤ f <sub>0</sub> < 16.0MHz	16.0MHz ≤ f <sub>0</sub> < 30.0MHz	30.0MHz ≤ f <sub>0</sub> < 36.0MHz	36.0MHz ≤ f <sub>0</sub> < 64.0MHz
Mode	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	3rd Overtone	3rd Overtone
R <sub>1</sub>	150Ω Max.	100Ω Max.	80Ω Max.	60Ω Max.	50Ω Max.	40Ω Max.	100Ω Max.	80Ω Max.