

AT-CUT CRYSTAL UNIT (SMD • Metal-can Type)

RoHS compliant

HCM49

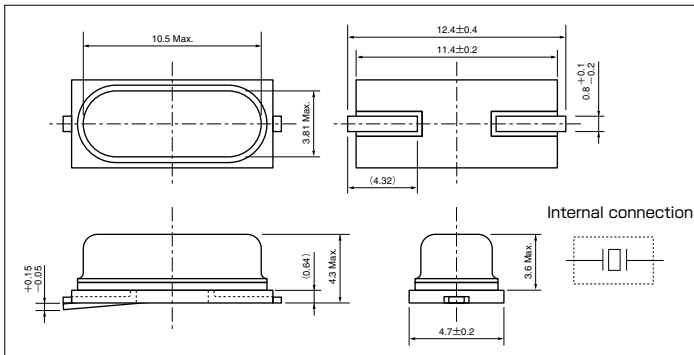
1000pcs/reel



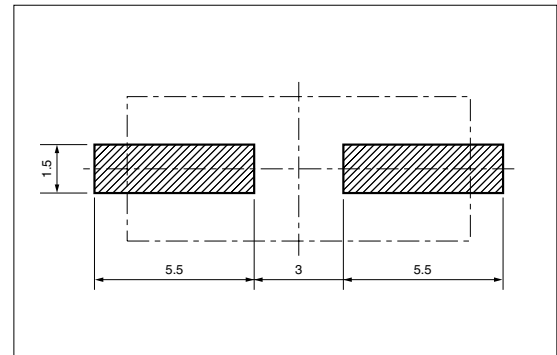
FEATURES

- Surface mount type of metal-can HC-49/U-S. High performance with the resistance weld sealing.
- Suitable for various applications such as communication devices, AV devices and measuring instruments.

DIMENSION [mm]



SOLDER PAD LAYOUT [mm]



STANDARD SPECIFICATIONS

Item	Model	HCM49	Conditions
Nominal Frequency	f ₀	3.5MHz~30.0MHz (Fundamental)	Need to contact us for the available frequency
		30.0MHz~50.0MHz (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: $\pm 30\text{ppm}$	
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 ~ ∞ 3rd Overtone: 5.0pF ~ ∞	Need to specify your requirement
Shunt capacitance	C ₀	7.0pF Max.	
Level of drive	DL	100 μW	
Insulation Resistance	I _R	500MΩ Min.	DC100V ± 3V
Aging (first year)	$\Delta f/f_0$	$\pm 5\text{ppm Max.}$	25°C ± 3°C

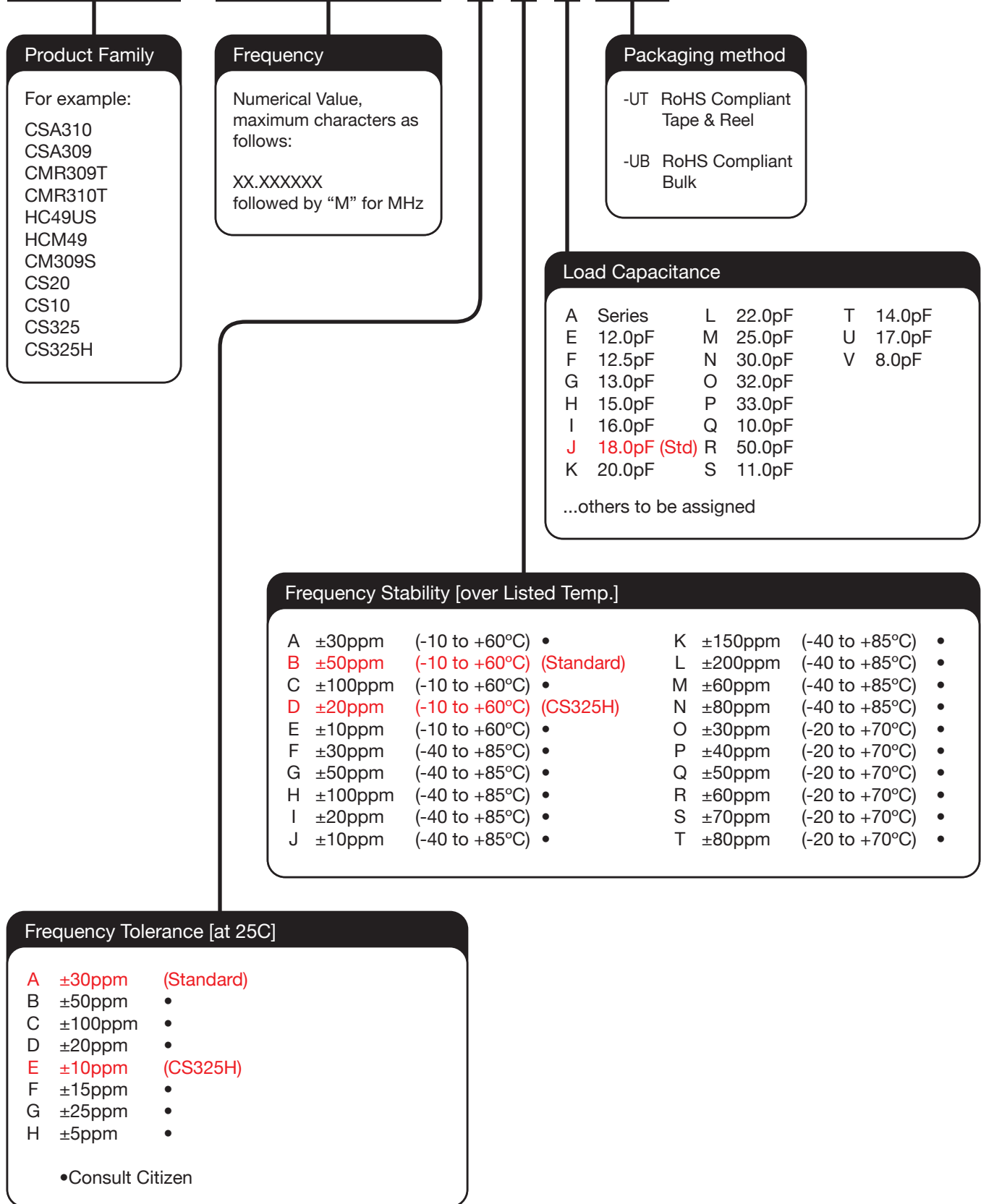
MOTIONAL (SERIES) RESISTANCE (R₁)

Frequency Range	3.5MHz ≤ f ₀ < 4.0MHz	4.0MHz ≤ f ₀ < 6.0MHz	6.0MHz ≤ f ₀ < 10MHz	10MHz ≤ f ₀ < 14MHz	14MHz ≤ f ₀ < 30MHz	30MHz ≤ f ₀ < 36MHz	36MHz ≤ f ₀ ≤ 50MHz
Mode	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	3rd Overtone	3rd Overtone
R ₁	200 Ω Max.	150 Ω Max.	100 Ω Max.	80 Ω Max.	50 Ω Max.	140 Ω Max.	100 Ω Max.

MHz CRYSTAL Part Numbering System

Example Part Number:

CM309S 25.000M A B J -UT



Product Family

For example:

- CSA310
- CSA309
- CMR309T
- CMR310T
- HC49US
- HCM49
- CM309S
- CS20
- CS10
- CS325
- CS325H

Frequency

Numerical Value, maximum characters as follows:

XX.XXXXXX
followed by "M" for MHz

Packaging method

- UT RoHS Compliant Tape & Reel
- UB RoHS Compliant Bulk

Load Capacitance

A Series	L 22.0pF	T 14.0pF
E 12.0pF	M 25.0pF	U 17.0pF
F 12.5pF	N 30.0pF	V 8.0pF
G 13.0pF	O 32.0pF	
H 15.0pF	P 33.0pF	
I 16.0pF	Q 10.0pF	
J 18.0pF (Std)	R 50.0pF	
K 20.0pF	S 11.0pF	

...others to be assigned

Frequency Stability [over Listed Temp.]

A ±30ppm (-10 to +60°C) •	K ±150ppm (-40 to +85°C) •
B ±50ppm (-10 to +60°C) (Standard)	L ±200ppm (-40 to +85°C) •
C ±100ppm (-10 to +60°C) •	M ±60ppm (-40 to +85°C) •
D ±20ppm (-10 to +60°C) (CS325H)	N ±80ppm (-40 to +85°C) •
E ±10ppm (-10 to +60°C) •	O ±30ppm (-20 to +70°C) •
F ±30ppm (-40 to +85°C) •	P ±40ppm (-20 to +70°C) •
G ±50ppm (-40 to +85°C) •	Q ±50ppm (-20 to +70°C) •
H ±100ppm (-40 to +85°C) •	R ±60ppm (-20 to +70°C) •
I ±20ppm (-40 to +85°C) •	S ±70ppm (-20 to +70°C) •
J ±10ppm (-40 to +85°C) •	T ±80ppm (-20 to +70°C) •

Frequency Tolerance [at 25C]

- A ±30ppm (Standard)**
- B ±50ppm •
- C ±100ppm •
- D ±20ppm •
- E ±10ppm (CS325H)**
- F ±15ppm •
- G ±25ppm •
- H ±5ppm •

•Consult Citizen