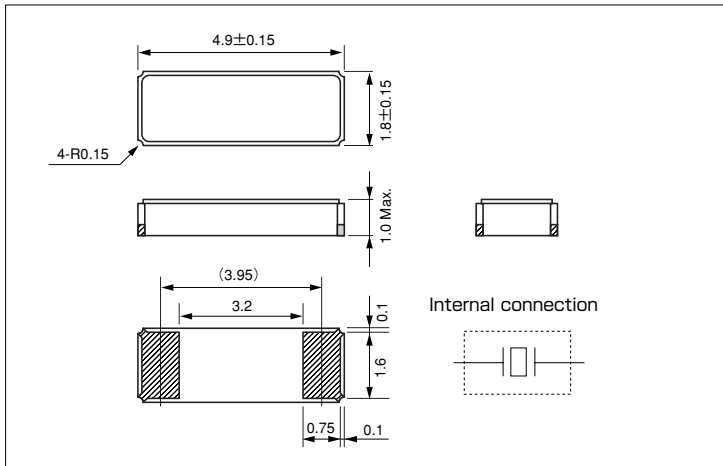




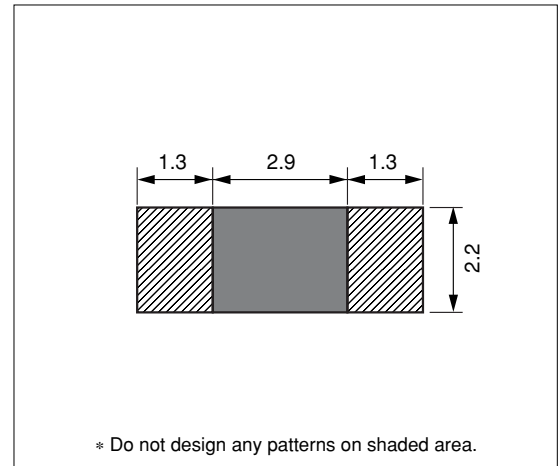
FEATURES

- Tuning fork crystal with ceramic packaged type.
- Small & thin packaging and light weight.
- Most appropriate for portable devices and mobile telecommunications devices.
- Complete Pb free product.

DIMENSION [mm]



SOLDER PAD LAYOUT [mm]



STANDARD SPECIFICATIONS

Item	Model	CM519	Conditions
Nominal Frequency	f_0	32.768kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 20\text{ppm}$	at 25°C
Load capacitance	C_L	12.5pF	Need to specify your requirement
Operating Temperature Range	T_{OPR}	-40°C ~ +85°C	
Storage Temperature Range	T_{STR}	-55°C ~ +125°C	
Turnover Temperature	T_M	25°C $\pm$ 5°C	See figure 2 in P4
Temperature Coefficient	β	-0.034 $\pm$ 0.006ppm/°C ²	
Motional (series) resistance	R_1	70K Ω Max.	at 25°C
Level of drive	D_L	1 μ W Max.	
Aging (first year)	$\Delta f/f_0$	$\pm 3\text{ppm}$ Max.	25°C $\pm$ 3°C
Quality Factor	Q	65000 Typ.	
Shunt capacitance	C_0	1.33pF Typ.	

KHz CRYSTAL Part Numbering System

Example Part Number:

CM200S 32.768K D Z F -UT

Product Family

For example:

CFS308
CFS206
CFS145
CFV206
CMR200T
CMR250T
CM200S
CM250S
CM130
CM519
CM415
CM315

Frequency

Numerical Value,
maximum characters as
follows:

XXX.XXXXXX
followed by "K" for KHz

Frequency Tolerance [at 25C]

A +/-30ppm (Standard: other than 32.768KHz)
B +/-50ppm •
C +/-100ppm •
D +/-20ppm (Standard: 32.768KHz)
E +/-10ppm •
F +/-15ppm •
G +/-25ppm •

•Consult Citizen

Packaging method

TR Tape & Reel

B Bulk

-UT RoHS Compliant
Tape & Reel

-UB RoHS Compliant
Bulk

Load Capacitance

A	Series	I	16.0pf	Q	10.0pf
B	6.0pf	J	18.0pf	R	50.0pf
C	9.0pf	K	20.0pf	S	11.0pf
D	9.5pf	L	22.0pf	T	14.0pf
E	12.0pf	M	25.0pf	U	17.0pf
F	12.5pf (Std)	N	30.0pf	V	8.0pf
G	13.0pf	O	32.0pf		
H	15.0pf	P	33.0pf		

...others to be assigned

Frequency Stability

Z (Standard for all KHz frequencies)