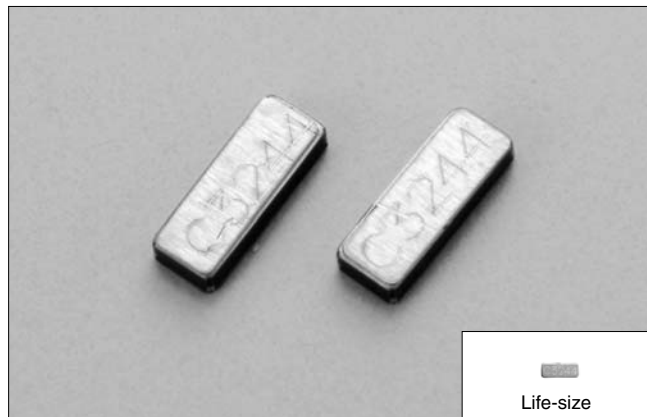


RoHS Compliant Standard

## CM519

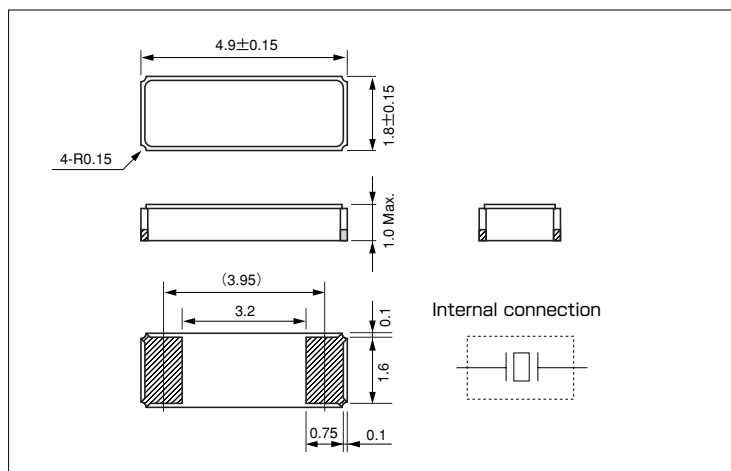
3000pcs/reel



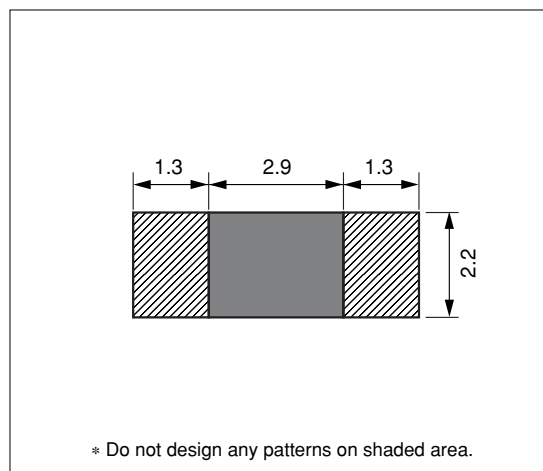
### FEATURES

- 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]



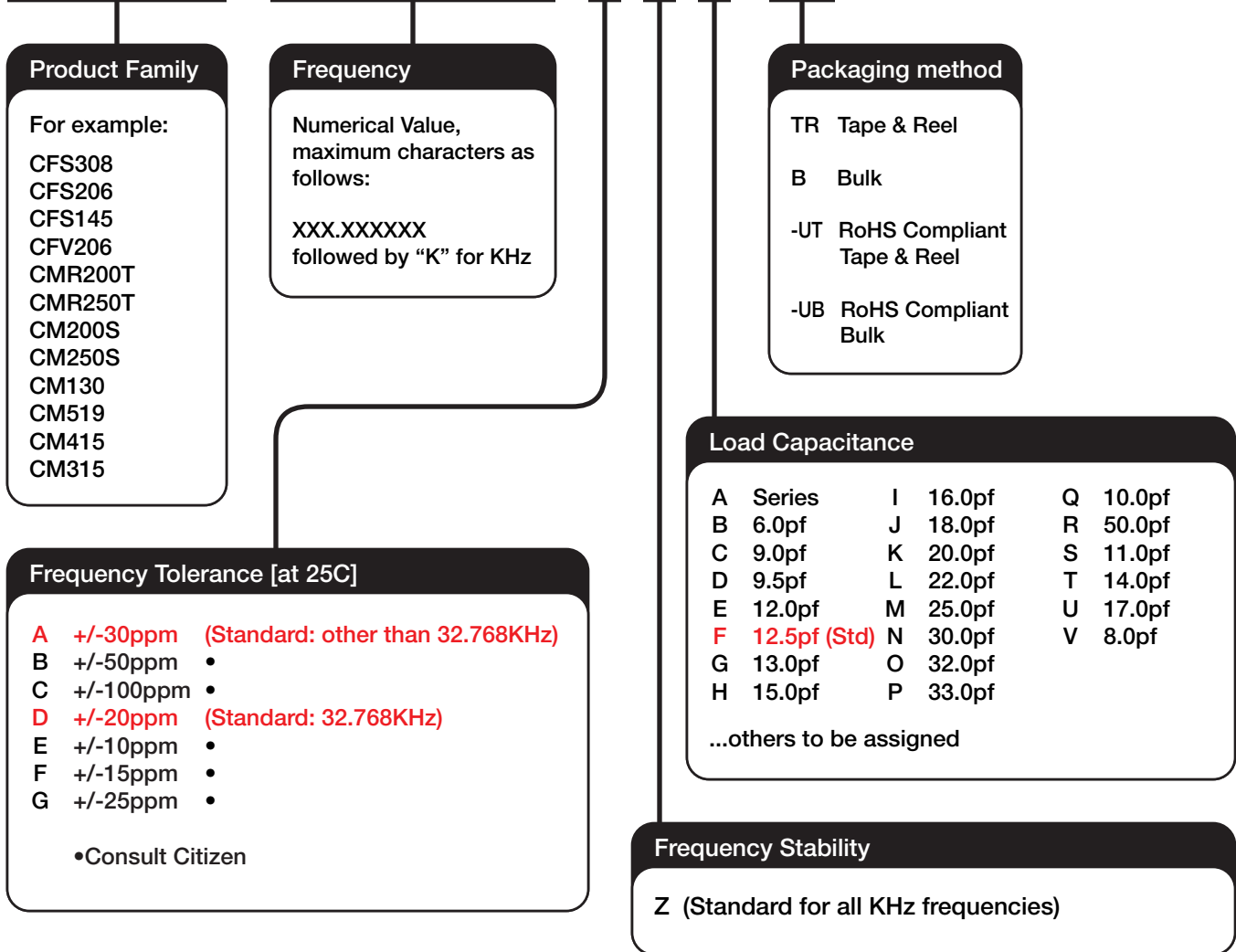
### STANDARD SPECIFICATIONS

Item	Model	CM519	Conditions
Nominal Frequency	$f_0$	32.768kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 20$ 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	$\beta$	-0.034 $\pm$ 0.006ppm/°C <sup>2</sup>	
Motional (series) resistance	$R_1$	70KΩ Max.	at 25°C
Level of drive	$D_L$	1 μW Max.	
Aging (first year)	$\Delta f/f_0$	$\pm 3$ 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
<b>F 12.5pf (Std)</b>	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)