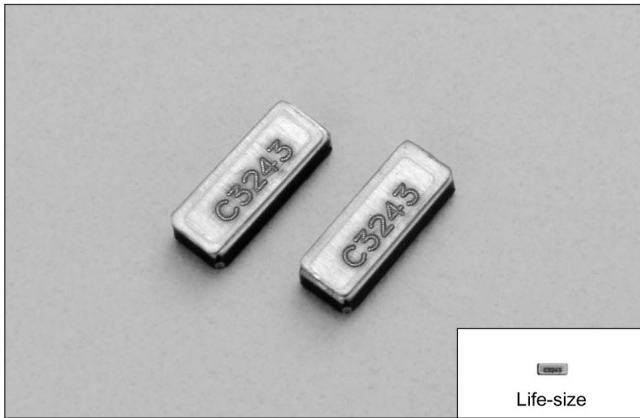


# TUNING FORK CRYSTAL UNIT (SMD • Ceramic Package)

RoHS Compliant Standard

## CM415

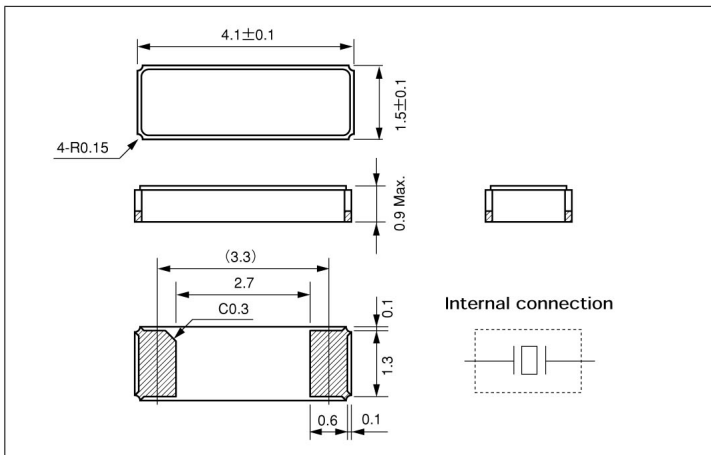
3000pcs/reel



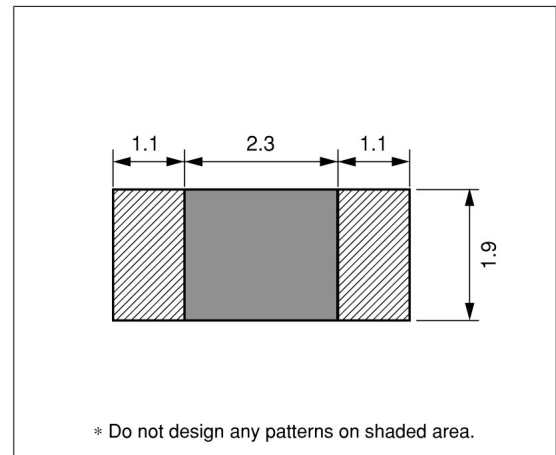
### FEATURES

- Tuning fork crystal with ceramic packaged type High-density SMD type.
- Light weight with small and thin packaging High-stability assured with tight vacuum sealing.
- Most appropriate for portable devices, automotive applications and mobile telecommunication devices.
- Complete Pb free product.

### DIMENSION [mm]



### SOLDER PAD LAYOUT [mm]



### STANDARD SPECIFICATIONS

Item	Model	CM415	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	$\beta$	$-0.034 \pm 0.006$ ppm/°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	53000 Typ.	
Shunt capacitance	$C_0$	1.05pF Typ.	