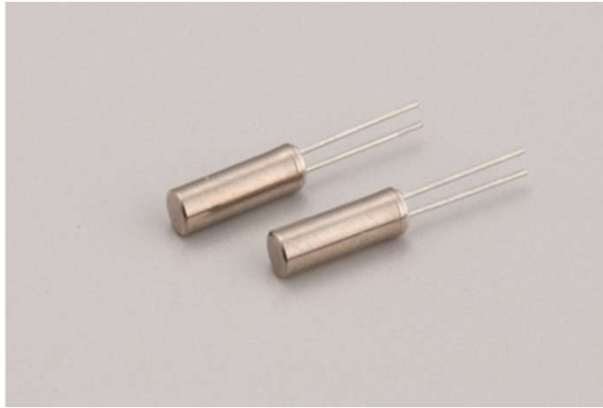


## TUNING FORK CRYSTAL UNIT (Cylinder Type)

RoHS compliant / Pb free

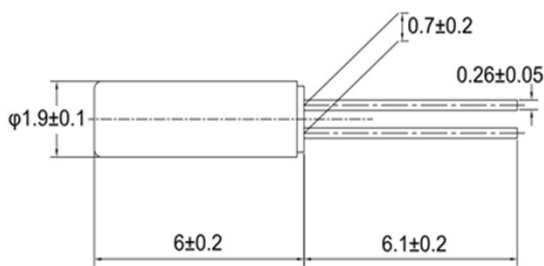
## CFS-206 • CFS-145



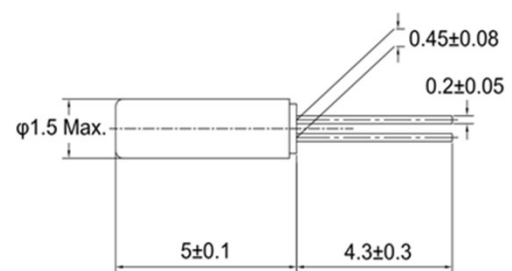
### FEATURES

- Frequency range : 32.768kHz
- External dimensions (mm)  
CFS-206  $\Phi$  : 1.9 x L : 6.0  
CFS-145  $\Phi$  : 1.5 x L : 5.0
- Applications  
Smart Meters / Watch / Clock /  
Security Devices / Consumer Products

### DIMENSION [mm]



CFS-206

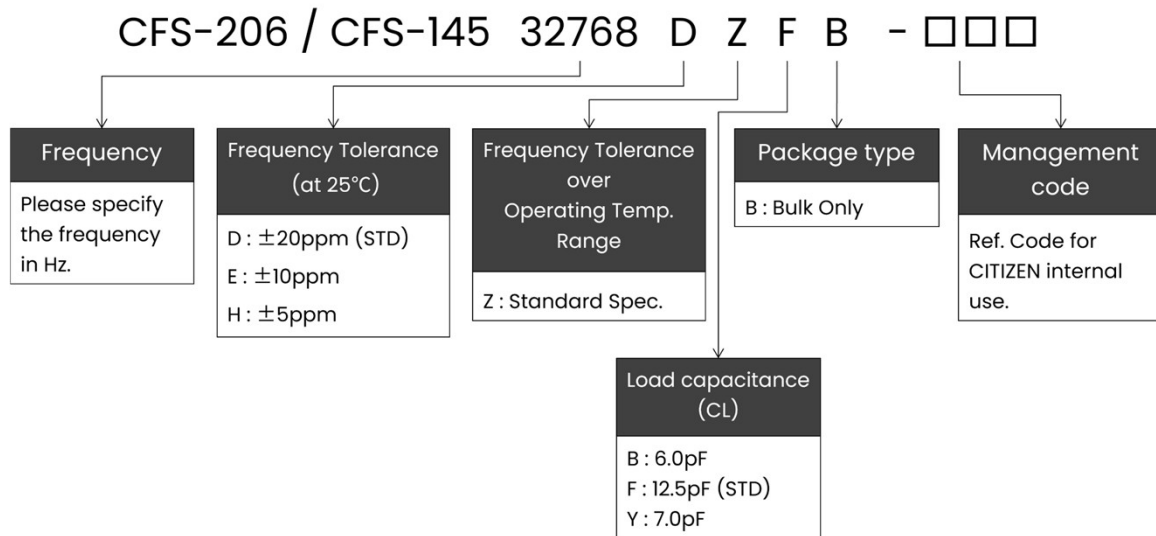


CFS-145

### STANDARD SPECIFICATIONS

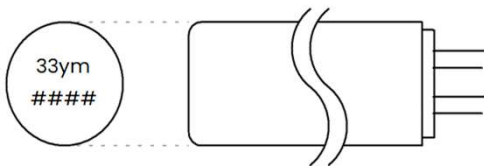
Item		CFS-206	CFS-145	Conditions
Nominal Frequency	$f_0$	32.768kHz		
Frequency Tolerance	$\Delta f/f_0$	$\pm 5\text{ppm} / \pm 10\text{ppm} / \pm 20\text{ppm}$		at 25°C
Load capacitance	$C_L$	6.0pF / 7.0pF / 12.5pF		Please specify your requirement
Operating Temperature Range	$T_{OPR}$	-20°C ~ +70°C		
Storage Temperature Range	$T_{STR}$	-40°C ~ +85°C		
Turnover Temperature	$T_M$	25°C $\pm$ 5°C		
Temperature Coefficient	$\beta$	-0.034 $\pm$ 0.006ppm/°C <sup>2</sup>		
Motional (series) resistance	$R_1$	35K $\Omega$ Max.	40K $\Omega$ Max.	at 25°C
Level of drive	$D_L$	1.0 $\mu$ W Max.		
Aging (first year)	$\Delta f/f_0$	$\pm 3\text{ppm}$ Max.		25°C $\pm$ 3°C
Shunt capacitance	$C_0$	1.2pF Typ.	1.0pF Typ.	

## ■ PART NUMBERING SYSTEM



※Please contact us for specifications available.

## ■ Part Marking [standard]



33 : Manufacture's ID Code

y : The last digit of production year

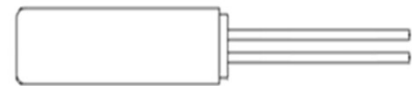
m : Production month (See Table.1)

# : Production Lot No.

Table.1

Month	Jan	Feb	...	Sep	Oct	Nov	Dec
Code	1	2	...	9	X	Y	Z

CFS-145

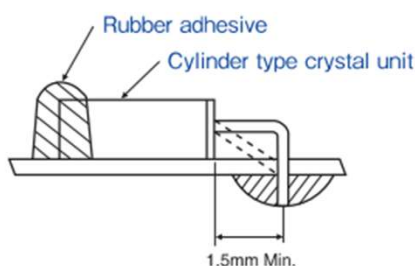


No marking

## ■ Handling Notes

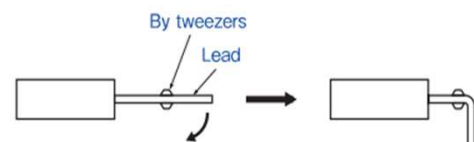
### Mounting

- Soldering the body of cylinder type crystal unit must be strictly avoided as it may cause significant deterioration in characteristics of the product.
- Rubber adhesive is recommended for mounting.



### Bending Lead

- Hold the body of crystal unit by hand, and the part to be bent with tweezers leaving more than 1.5mm of lead from the body case. (3.0mm is recommended)
- Bend the lead 90° holding with the tweezers. Pulling the lead strongly may crack the hermetic seal glass at the root of the lead and may cause the airtightness and the characteristics to deteriorate.



\*Product specifications are subject to change without notice.