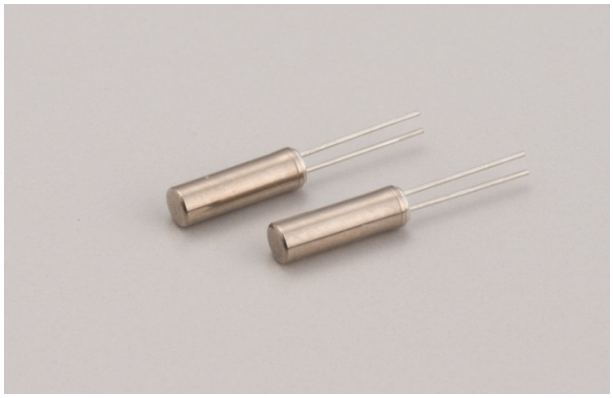
CITIZEN

TUNING FORK CRYSTAL UNIT (Cylinder Type)

RoHS compliant / Pb free

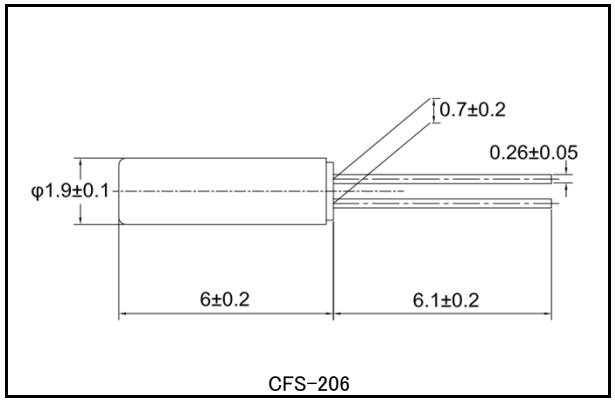
CFS-206・CFS-145



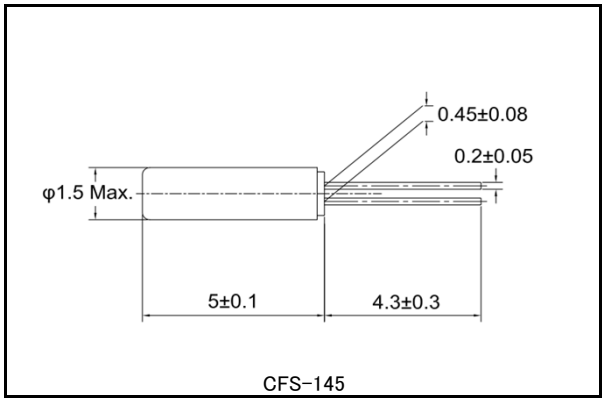
■ FEATURES

- Frequency range : 32.768kHz
- External dimensions (mm)
  CFS-206 Φ : 2.0 x L : 6.2
  CFS-145 Φ : 1.5 x L : 5.1
- Applications
  Watch / Clock / Security devices / Consumer products

■ DIMENSION [mm]



CFS-206



CFS-145

■ STANDARD SPECIFICATIONS

Item \ Model		CFS-206	CFS-145	Conditions
Nominal Frequency	f_0	32.768kHz		
Frequency Tolerance	$\Delta f/f_0$	±5ppm / ±10ppm / ±20ppm		at 25℃
Load capacitance	C_L	6.0pF / 7.0pF / 8.0pF / 12.5pF		Please specify your requirement
Operating Temperature Range	T_{OPR}	-20℃ ～ +70℃		
Storage Temperature Range	T_{STR}	-40℃ ～ +85℃		
Turnover Temperature	T_M	25℃±5℃		
Temperature Coefficient	β	-0.034±0.006ppm/℃^{2}		
Motional (series) resistance	R_1	35KΩ Max.	40KΩ Max.	at 25℃
Level of drive	D_L	1μW Max.		
Aging (first year)	$\Delta f/f_0$	±3ppm Max.		25℃±3℃
Shunt capacitance	C_0	1.2pF Typ.	1.0pF Typ.	

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■ PART NUMBERING SYSTEM

CFS-206 / CFS-145 32768 D Z F B - □□□

Frequency
Please specify the frequency in Hz.

Frequency Tolerance (at 25℃)	
D	±20ppm (STD)
E	±10ppm
H	±5ppm

Frequency Tolerance over Operating Temp. Range	
Z	Standard Spec.

Load capacitance (CL)	
B	6.0pF
F	12.5pF (STD)
V	8.0pF
Y	7.0pF

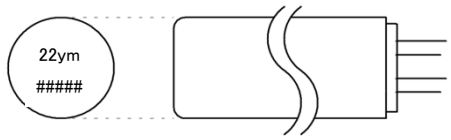
Package specification	
B	Only Bulk

CITIZEN management code
Ref. Code for internal use.

*Please contact us for specifications available.

■ Part Marking [standard]

CFS-206



22 : Manufacture's ID Code

y : The last digit of production year

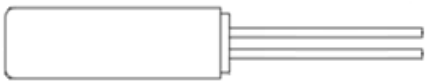
m : Production month (See Table.1)

: Production Lot No.

Table.1

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

CFS-145



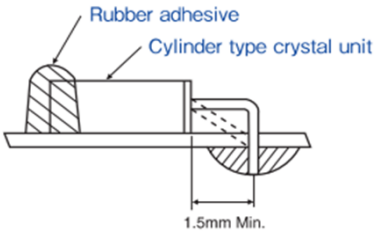
No marking

■ 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.

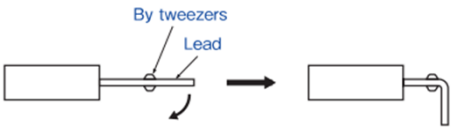
Rubber adhesive is recommended for mounting.



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.



Rev.1

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