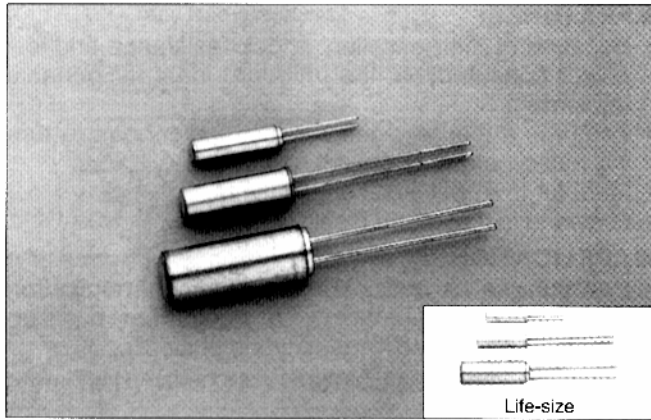


kHz RANGE CRYSTAL UNITS (CYLINDER TYPE)

CITIZEN®

CFV-308, CFV-206, CFV-145, CSE-145



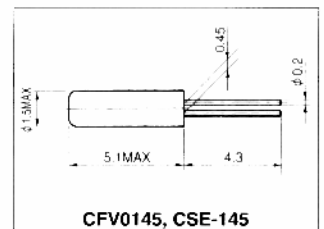
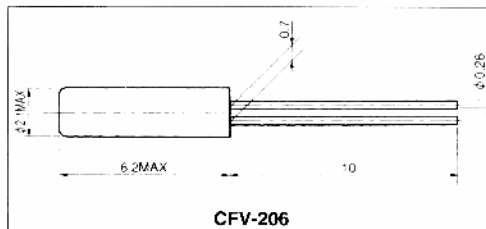
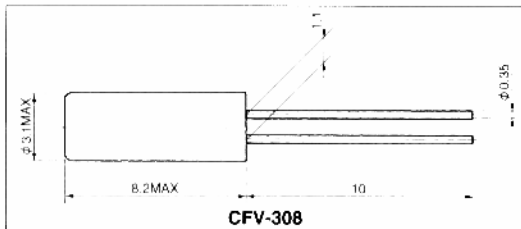
■ FEATURES:

- Similar to the CFS series, the CFV series features superior characteristics of a kind that only tuning fork-type crystal units can offer. Ideal for application to compact portable equipment.
- CSE-145, which adopts Citizen's unique E-shaped configuration for its crystal piece, not only boasts the world's smallest size among 1MHz-band crystals, but also features outstanding shock resistance.

■ APPLICATIONS:

- Because of their miniature size and excellent impact resistance, the units are ideal for such compact portable equipment as communication equipment, AV equipment and measuring instruments.

■ DIMENSIONS: (UNIT=mm)



■ STANDARD SPECIFICATIONS

Item	Model	CFV-308	CFV-206	CFV-145	CSE-145	Conditions
Nominal frequency	f_0	30kHz~40kHz	30kHz~165kHz	200kHz	1MHz	Please contact us for changes in frequency.
Frequency tolerance	$\Delta f/f_0$	± 30 ppm	± 30 ppm	$\pm 10,000$ ppm	$\pm 3,000$	At 25°C
Frequency vs. Temperature characteristics	$\Delta f/f_0$	See drawing				-10°C ~ +60°C
Turnover temperature	T_m	25°C ± 5 °C			35°C TYP.	
Temperature coefficient	β	-0.034 ± 0.006 ppm/°C ²				Varies depending on frequency.
Operating temperature range	T_{OPR}	-10°C~+60°C				
Storage temperature range	T_{STG}	-40°C~+85°C				
Equivalent series resistance	R_1	35k Ω ~50k Ω		10k Ω	3k Ω	At 25°C
Load capacitance	C_L	12.5pF TYP.			8.0pF TYP.	Please specify
Motional capacitance	C_1	1~4fF TYP.			1fF TYP.	Varies depending on frequency.
Shunt capacitance	C_0	0.8~1.7pF TYP.			0.4pF TYP.	
Capacitance ratio	γ	425~800 TYP.			400 TYP.	
Drive level	DL	1 μ W MAX.				
Insulation resistance	IR	500M Ω MIN.				DC100V ± 15 V
Aging (First year)	$\Delta f/f_0$	± 5 ppm MAX.				25°C ± 3 °C
Sealing		1 x 10 ⁻² μ Pa·m ³ /s MAX.				
Shock resistance		± 5 ppm MAX. Drop test of 3 times on a hard board from 75cm height or shock test of 3000G x 0.3ms x 1/2 sin wave x 3 directions				Conditions will vary depending on frequency.

FREQUENCY vs TEMPERATURE CURVE

