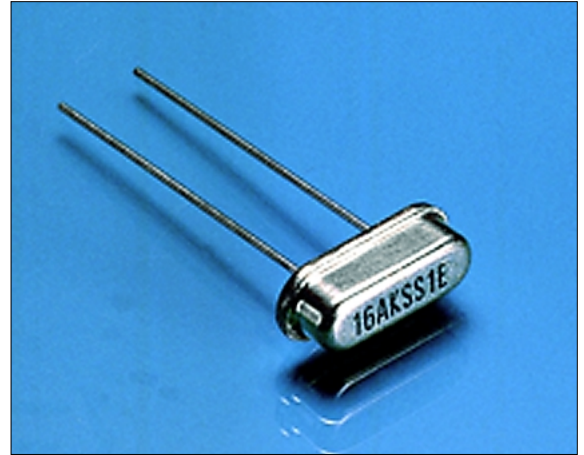


HC-49/U-S

Miniature Quartz Crystal Unit for Microprocessor Model HC-49/U-S

■Features

- Height 3.5mm, the volume is compact at about one-fourth that of the former product (HC-49/U).
- A resistance weld completely sealed type.
- The frequency stability is good, the reliability is high.
- Multiple standard frequencies.
- Copes with high density mounting and is optimum for mass production models.



■Specifications

Type		HC-49/U-S		
Main application		CTV-VTR	Microprocessor	Automotive engine control
Frequency Range		3.5~28MHz	3.2~60MHz	4~20MHz
Standard Frequency		Table 1	Table 2	Table3
Overtone Order		3.2~29MHz : Fundamental 29~60MHz : 3rd O.T.		Fundamental
Operating Temp. Range		-10~+70°C		-40~+125°C
Storage Temp. Range		-40~+85°C		-40~+150°C
Frequency Tolerance	at 25°C	±30×10 ⁻⁶	±50×10 ⁻⁶	±100×10 ⁻⁶
	Over The Oper. Temp. Range	±30×10 ⁻⁶ (referred to 25°C)	±50×10 ⁻⁶ (referred to 25°C)	±200×10 ⁻⁶ (referred to 25°C)
Load Capacitance		Table 1	Table 2	Table 3
Equivalent Series Resistance		Table 1	Table 2	Table 3
Shunt Capacitance		7.0pF MAX.		
Drive Level		0.3mW MAX.		
Shock		ΔF/F : ±10×10 ⁻⁶ Three drops onto a hard wood board from the height of 20cm		Three drops onto a hard wood board from the height of 100cm
Vibration		ΔF/F : ±10×10 ⁻⁶ 10~55Hz, amplitude 0.7~0.9mm, each to 3 directions, 30 minutes each		10~55Hz, amplitude 1.5mm, each to 3 directions, 2 hours each

■Table 1
Standard Frequencies

Frequency (MHz)	Load capacitance (pF)	Equivalent series resistance (ΩMAX.)
3.579545	Series/16	150
4.433619	Series/16	120
14.31818	Series/12	50
17.734476	Series/12	50

■Table 3
Standard Frequencies

Frequency (MHz)	Load capacitance (pF)	Equivalent series resistance (ΩMAX.)
4.000	12	200
5.000	12	200
6.000	12	200
8.000	12	120
10.000	12	120
12.000	12	100
16.000	12	100
18.000	12	100
20.000	12	100

■Table 2 Standard Frequencies

Frequency (MHz)	Load capacitance (pF)	Equivalent series resistance (ΩMAX.)	Frequency (MHz)	Load capacitance (pF)	Equivalent series resistance (ΩMAX.)
3.200	16	300	16.000	12	50
3.579545	16	150	16.9344	12	50
3.6864	16	150	17.734476	12	50
4.000	16	150	20.000	12	50
4.194304	11.5	120	21.47727	12	50
4.433619	16	120	24.000	12	50
4.500	14	120	24.576	12	50
4.9152	16	100	27.000	12	50
6.000	16	90	29.4912	12	150
6.144	16	90	32.000	12	150
7.3728	16	90	33.8688	12	150
8.000	16	90	38.00053	12	150
8.4672	16	90	39.3216	12	150
9.8304	16	90	40.000	12	150
10.000	12	90	44.2368	12	150
10.240	12	90	44.350	12	150
10.738635	12	90	44.550	12	150
11.000	12	90	46.000	12	150
11.0592	12	90	48.000	12	150
12.000	12	70	50.000	12	150
12.288	12	70	56.448	12	150
13.500	12	50	60.000	12	150
14.31818	12	50			

■Outline

