

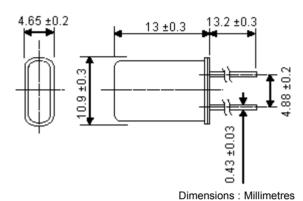
HC-49/U



Features and Applications:

- · General, industrial, microcontrollers
- Cost Effective
- Well established product
- Wide frequency range
- Superior resistance weld HC-49/U metal case

Supplied loose as standard. Taped productavailableto special order



Specification Table

Nominal Frequency Range	1.8 to 32 MHz 24 to 75 MHz 75 to 200 M				
Vibration Mode	Fundamental (AT)	5th Overtone (AT)			
Frequency Tolerance at 25°C	±20 or ± 30 ppm				
Temperature Stability		±30 or ± 50 ppm			
Operating Temperature Range	-10°C to +60°C (Option : -20°C to +70°C)				
Storage Temperature Range	-20°C to +70°C (Option : -30°C to +80°C)				
Load Capacitance	8	3 pF to 32 pF or series	s		
Equivalent Series Resistance		See ESR table below	1		
Shunt Capacitance	5 pF maximum (≤	18 MHz) or 7 pF max	ximum (>18 MHz)		
Drive Level	200 μW maximum (≤5 MHz) 100 μW maximum (>5 MHz)				
Insulation Resistance	500 MΩ minimum at 100 V dc				
Aging	±5 ppm per year				

ESR Table

Case	Vibration	HC 49U		
Frequency	Mode	Ω Maximum		
1 - 1,8 MHz	F	3,000		
1.8 - 2 MHz	F	500		
2.01 - 2.399 MHz	F	450		
2.4 - 2.99 MHz	F	300		
3 - 3.5 MHz	F	150		







ESR Table

Case	Vibration	HC 49U
Frequency	Mode	Ω Maximum
3.5 - 3.99 MHz	F	90
4 - 4.99 MHz	F	80
5 - 5.99 MHz	F	70
6 - 6.99 MHz	F	60
7 - 7.99 MHz	F	50
8 - 9.99 MHz	F	40
10 - 13.99 MHz	F	35
14 - 23.99 MHz	F	25
24 - 25 MHz	F/3	25 / 50
25 - 30 MHz	F/3	25 / 50
30 - 75 MHz	3	50
75 - 125 MHz	5	80
125 - 150 MHz	5	100
150 - 200 MHz	5	120

Part Number Table

Case	Frequency (MHz)	Frequency Tolerance (PPM)	Temperature Stability (PPM)	Temperature Range 60 = -10 to +60 70 = -20 to +70	Load Capacitance pf 00 = Series	Vibration Mode AT Cut F = Fund 0.3 Overtone	Ant Part Number
HC49U	1.8432	20	50	60	30	ATF	XTL-1012
HC49U	2	50	100	60	20	ATF	XTL-1014
HC49U	2.4576	20	50	60	30	ATF	XTL-1017
HC49U	3.2768	20	30	60	12	ATF	XTL-1020
HC49U	3.579545	20	50	60	20	ATF	XTL-1021
HC49U	3.6864	20	50	60	30	ATF	XTL-1023
HC49U	3.6864	30	50	70	30	ATF	XTL-1024
HC49U	4	20	10	70	30	ATF	XTL-1027
HC49U	4	20	50	60	30	ATF	XTL-1028
HC49U	4	30	50	70	30	ATF	XTL-1029
HC49U	4.096	20	20	70	30	ATF	XTL-1031
HC49U	4.096	30	50	70	30	ATF	XTL-1032
HC49U	4.194304	20	30	60	12	ATF	XTL-1033
HC49U	4.608	20	50	60	30	ATF	XTL-1037







Part Number Table

Case	Frequency (MHz)	Frequency Tolerance (PPM)	Temperature Stab (PPM)	Temperature Range 60 = -10 to +60 70 = -20 to +70	Load Capacitance pf 00 = Series	Vibration Mode AT Cut F = Fund 0.3 Overtone	Ant Part Number
HC49U	4.9152	20	50	60	30	ATF	XTL-1040
HC49U	4.9152	30	50	70	30	ATF	XTL-1041
HC49U	5	20	50	60	30	ATF	XTL-1043
HC49U	5.0688	20	50	60	0	ATF	XTL-1044
HC49U	6	20	50	60	30	ATF	XTL-1051
HC49U	6	30	50	70	30	ATF	XTL-1053
HC49U	6.144	20	50	60	30	ATF	XTL-1055
HC49U	6.5536	20	30	60	12	ATF	XTL-1057
HC49U	7.3728	20	50	60	30	ATF	XTL-1059
HC49U	8	20	50	60	30	ATF	XTL-1062
HC49U	8	30	50	70	30	ATF	XTL-1064
HC49U	10	20	10	70	30	ATF	XTL-1069
HC49U	10	20	50	60	30	ATF	XTL-1070
HC49U	11	20	30	60	30	ATF	XTL-1073
HC49U	11.0592	20	30	60	20	ATF	XTL-1074
HC49U	12	20	30	60	30	ATF	XTL-1079
HC49U	12.288	20	50	60	30	ATF	XTL-1081
HC49U	14.31818	20	50	60	0	ATF	XTL-1083
HC49U	14.7456	20	30	60	30	ATF	XTL-1087
HC49U	16	20	30	60	30	ATF	XTL-1089
HC49U	19.6608	20	50	60	30	ATF	XTL-1096
HC49U	20	20	30	60	0	ATF	XTL-1098
HC49U	22.1184	20	50	60	30	ATF	XTL-1114
HC49U	24	20	50	60	0	ATF	XTL-1120
HC49U	32	20	30	60	0	ATF	XTL-1131



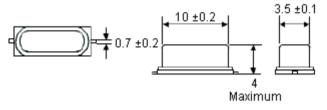
HC-49/SM

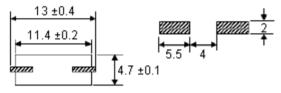


Features and Applications:

Designed for applications where board height is critical

- General, industrial, microcontrollers
- Cost effective
- Surface mount
- Low profile (4 mm height)
- Superior resistance weld HC49/4SMX metal case
- Supplied taped and reeled





Dimensions : Millimetres

Specification Table

Nominal Frequency Range	3.5 to 32 MHz	24 to 70 MHz		
Vibration Mode	Fundamental (AT) 3rd Overtone (AT			
Frequency Tolerance at 25°C	±20, ±30 or ±50 ppm (Options : ±10, ±15 ppm)			
Temperature Stability	±30 or ± 50 ppm			
Operating Temperature Range	-10°C to +60°C or -20°C to +70°C			
Storage Temperature Range	-20°C to +70°C or -30°C to +80°C			
Load Capacitance	8 pF to 33 pF or series			
Equivalent Series Resistance	See ESR t	able below		
Shunt Capacitance	5 pF maximum (≤18 MHz) c	or 7 pF maximum (>18 MHz)		
Drive Level	200 μW maximum (≤5 MHz)	100 μW maximum (>5 MHz)		
Insulation Resistance	500 MΩ minimum at 100 V dc			
Aging	±5 ppm	per year		

ESR Table

Case	Vibration	HC 49SM
Frequency	Mode	Ω Maximum
3.5 - 3.99 MHz	F	150
4 - 4.99 MHz	F	120
5 - 5.99 MHz	F	100
6 - 6.99 MHz	F	80
7 - 7.99 MHz	F	80





ESR Table

Case	Vibration	HC 49SM		
Frequency	Mode	Ω Maximum		
8 - 9,99 MHz	F	70		
10 - 13.99 MHz	F	50		
14 - 23.99 MHz	F	40		
24 - 25 MHz	F/3	40 / 80		
25 - 30 MHz	F/3	40 / 80		
30 - 70 MHz	3	80		

Part Number Table

Case	Frequency (MHz)	Frequency Tolerance (PPM)	Temperature Stability (PPM)	Temperature Range 60 = -10 to +60 70 = -20 to +70	Load Capacitance pf 00 = Series	Vibration Mode AT Cut F = Fund 0.3 Overtone	Ant Part Number
HC49SM	3.579545	30	50	60	16	ATF	XTL-5014
HC49SM	3.6864	30	50	60	16	ATF	XTL-5014
HC49SM	4	30	50	60	16	ATF	XTL-5021
HC49SM	4.9152	30	50	60	16	ATF	XTL-5025
HC49SM	6	30	50	60	30	ATF	XTL-5032
HC49SM	8	30	50	60	16	ATF	XTL-5038
HC49SM	10	30	50	60	16	ATF	XTL-5043
HC49SM	11.0592	30	50	60	16	ATF	XTL-5048
HC49SM	12	30	50	60	16	ATF	XTL-5050
HC49SM	16	30	50	60	16	ATF	XTL-5055
HC49SM	20	30	50	60	16	ATF	XTL-5062

HC-49/S



Features and Applications:

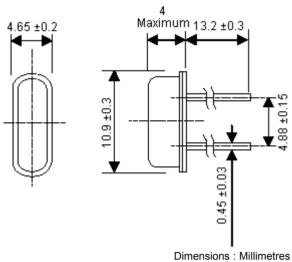
Designed for applications where board height space is critical

- · General, industrial, microcontrollers
- Cost effective
- Surface mount
- Low profile (4 mm height)
- Superior resistance weld HC49/4H metal case

Supplied loose as standard. Taped product available to special order







Specification Table

•				
Nominal Frequency Range	3.5 to 32 MHz	24 to 70 MHz		
Vibration Mode	Fundamental (AT) 3rd Overtone (AT			
Frequency Tolerance at 25°C	±20, ±30 or ±50 ppm (Options : ±10, ±15 ppm)			
Temperature Stability	±30 or ± 50 ppm			
Operating Temperature Range	-10°C to +60°C (Option : -20°C to +70°C)			
Storage Temperature Range	-20°C to +70°C (Option : -30°C to +80°C)			
Load Capacitance	8 pF to 32 pF or series			
Equivalent Series Resistance	See ESR t	able below		
Shunt Capacitance	5 pF maximum (≤18 MHz) c	or 7 pF maximum (>18 MHz)		
Drive Level	200 μW maximum (≤5 MHz)	100 μW maximum (>5 MHz)		
Insulation Resistance	500 MΩ minimum at 100 V dc			
Aging	±5 ppm	per year		

ESR Table

Case	Vibration	HC 49S
Frequency	Mode	Ω Maximum
3.5 - 3.99 MHz	F	150
4 - 4.99 MHz	F	120
5 - 5.99 MHz	F	100
6 - 6.99 MHz	F	80
7 - 7.99 MHz	F	80
8 - 9,99 MHz	F	70
10 - 13.99 MHz	F	50
14 - 23.99 MHz	F	40
24 - 25 MHz	F/3	40 / 80
25 - 30 MHz	F/3	40 / 80
30 - 70 MHz	3	80

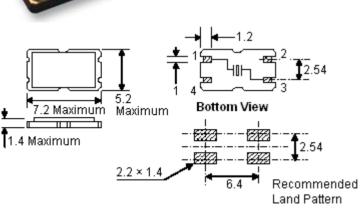




Part Number Table

Case	Frequency (MHz)	Frequency Tolerance (PPM)	Temperature Stability (PPM)	Temperature Range 60 = -10 to +60 70 = -20 to +70	Load Capacitance pf 00 = Series	Vibration Mode AT Cut F = Fund 0.3 Overtone	Ant Part Number
HC49S	3.579545	30	50	70	20	ATF	XTL-3012
HC49S	3.6864	30	50	70	30	ATF	XTL-3015
HC49S	4	20	50	60	30	ATF	XTL-3018
HC49S	4.194304	30	50	60	30	ATF	XTL-3024
HC49S	4.433619	30	50	60	20	ATF	XTL-3026
HC49S	4.9152	30	50	70	30	ATF	XTL-3028
HC49S	6	30	50	60	30	ATF	XTL-3035
HC49S	7.3728	15	30	60	18	ATF	XTL-3039
HC49S	7.68	30	50	60	30	ATF	XTL-3042
HC49S	8	30	50	70	30	ATF	XTL-3044
HC49S	9.8304	30	50	60	30	ATF	XTL-3048
HC49S	10	30	50	70	30	ATF	XTL-3052
HC49S	11.0592	30	50	70	30	ATF	XTL-3060
HC49S	12	30	50	70	30	ATF	XTL-3064
HC49S	16	30	50	70	30	ATF	XTL-3069
HC49S	18.432	30	50	60	30	ATF	XTL-3074
HC49S	20	30	50	70	12	ATF	XTL-3078
HC49S	24	50	50	60	30	ATF	XTL-3085





Features and Applications:

- Communication Equipment, PDA's, Wireless security systems
- Cost effective
- Surface mount
- Ultra thin ceramic package
- Height 1.4 mm maximum
- Supplied taped and reeled

Dimensions : Millimetres





Specification Table

Nominal Frequency Range	10 to 30 MHz	30 to 60 MHz		
Vibration Mode	Fundamental (AT)	3rd Overtone (AT)		
Frequency Tolerance at 25°C	±20, ±30 or ±50 ppm			
Temperature Stability	±30 or ± 50 ppm			
Operating Temperature Range	-20°C to +70°C			
Storage Temperature Range	-30°C to +80°C			
Load Capacitance	8 pF to 32 pF or series			
Equivalent Series Resistance	See ESR table below			
Shunt Capacitance	7 pF maximum			
Drive Level	100 μW maximum			
Insulation Resistance	500 MΩ minimum at 100 V dc			
Aging	±5 ppm per year			

ESR Table

Case	Vibration	DX-57 Ω Maximum		
Frequency	Mode			
10 - 13.99 MHz	F	60		
14 - 30 MHz	F	50		
30 - 60 MHz	3	100		

Part Number Table

Case	Frequency (MHz)	Frequency Tolerance (PPM)	Temperature Stability (PPM)	Temperature Range 60 = -10 to +60 70 = -20 to +70	Load Capacitance pf 00 = Series	Vibration Mode AT Cut F = Fund 0.3 Overtone	Ant Part Number
DX57	10	30	50	70	20	ATF	XTL-7024
DX57	11.0592	30	50	70	20	ATF	XTL-7026
DX57	12	30	50	70	20	ATF	XTL-7029
DX57	18.432	30	50	70	20	ATF	XTL-7036
DX57	19.6608	30	50	70	20	ATF	XTL-7040
DX57	24	30	50	70	20	ATF	XTL-7047
DX57	27	30	50	70	20	ATF	XTL-7052
DX57	32	30	50	70	20	AT3	XTL-7056

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