



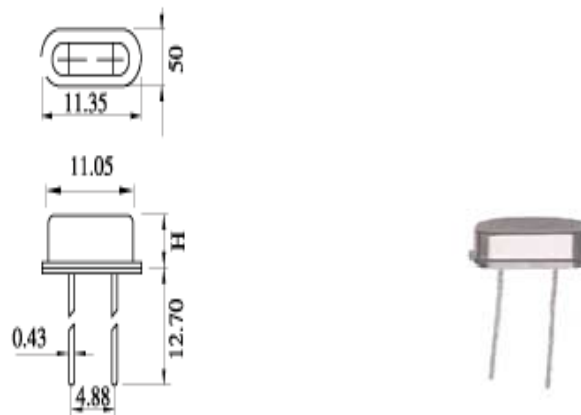
1. SCOPE

This specification shall cover the characteristics of crystal unit with HC-49/S 3.579545—27.00MHz

2. ELECTRICAL SPECIFICATION

ITEM	SPECIFICATION
HOLDER TYPE	HC-49/S
NOMINAL FREQUENCY	3.579545—27.00MHz
LOAD CAPACITANCE	10PF to series
OSCILLATION MODE	Fundamental
FREQUENCY TOLERANCE AT 25°C ± 2°C	± 3PPM
EQUIVALENT SERIES RESISTANCE	Based on frequency
DRIVE LEVEL	0.5mW
OPERATING TEMPERATURE RANGE	-10°C ~ +60°C
FREQUENCY STABILITY	± 30PPM
SHUNT CAPACITANCE	<7PF
AGING	± 5PPM/YEAR
INSULATION RESISTANCE	>500MΩ at DC 100V

3. Dimension



H=3.5mm

4. MECHANICAL SPECIFICATION

1) Terminal Strength

* Lead pulling test

Conditions:	Load	907.2 gram
	Direction	To the downward
	Duration of applied force	5 seconds
Results:	There should be no distortion in appearance.	

* Lead bending test

Conditions:	Load	453.6 gram
	Bending angle	90° to normal position
	Rate of bending	3 seconds in each cycle
	Number of bending	3
Results:	There should be no distortion in appearance.	

2) Lead solderability test

Conditions: Dipping in solder(+230°C ± 5°C)for 5 seconds
 Results: More than 95% of surface being tested should be coated uniformly with solder.

3) Vibration test

Conditions:	Frequency	10 – 55Hz
	Amplitude	0.762mm
	Sweep	1.0 minute
	Duration	2 hours
Results:	Frequency and wave form of tested products must Remain within specifications.	

4) Drop test

Conditions:	Method of drop	Natural drop
	Dropping floor	Hard wood board
	Height	30cm
	Number of drops	3 times
Results:	Frequency and wave form of tested products must remain within specifications.	

5. ENVIRONMENTAL SPECIFICATION

1) Temperature test

* Temperature cycling test

Conditions:	Steps of cycle	1) At -55°C,30 minutes 2) At +25°C,10 - 15 minutes 3) At +85°C,30 minutes 4) At +25°C,10 - 15 minutes
	Number of cycles	3 times
Results:	Frequency and wave form of tested products must remain within specifications.	

* Low Temperature test

Conditions:	Temperature	-20°C ± 2°C
	Length of test	96 hours
Results:	There should be no stain on surface of products. Frequency and wave form of tested products must remain within specifications.	

2) Aging test

Conditions:	Temperature	+85°C ± 20°C
	Length of test	96 hours
Results:	Deviation of frequency must be less than ± 3ppm	

3) Salt spray test

Conditions:	Temperature	+35°C ± 2°C
	Length of test	48 hours
	NaCl %	5%
Results:	There should be no stain on surface of products.	

4) Humidity test

Conditions:	Temperature	+40°C ± 2°C
	Relative humidity	90 - 95%
	Length of test	96 hours
Results:	a. Insulation resistance must be 500 M ^Ω /100 Vac. minimum b. Resistance and wave form must remain within specifications.	