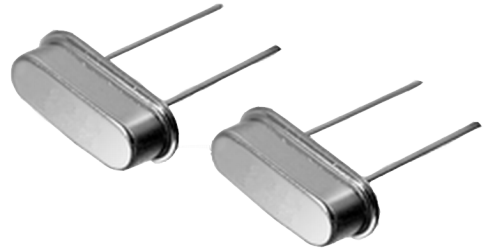# HC-49S   Crystal Resonator

71008000RW1

1.   Scope:

1.1 This specification applies to the RoHS compliance quartz crystal unit with a frequency of 8.000MHz which will be used in crystal oscillator applications.

2.   Construction:
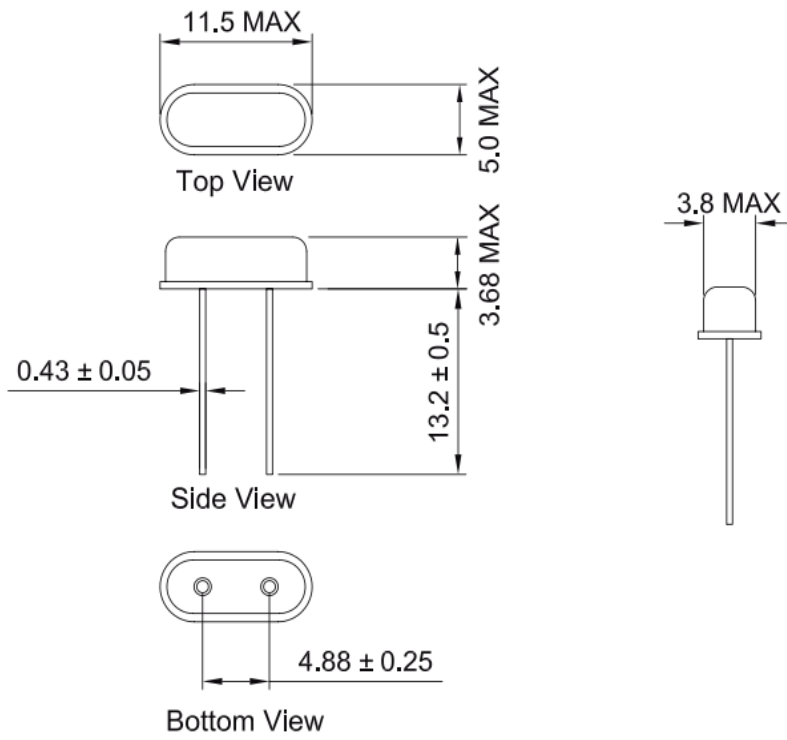
2.1 Type of Quartz Resonator: HC-49S

3.   Electrical Characteristics

3.1 Nominal Frequency(f):	8.000MHz
3.2 Load Capacitance(C_L):	20pF
3.3 Frequency Tolerance($\triangle$f/f):	±20ppm
3.4 Frequency Temperature Stability:	±20ppm
3.5 Resonance Resistance(ohm):	80 ohms Max
3.6 Osc mode:	Fundamental mode
3.7 Shunt Capacitance(C_0):	7pF Max
3.8 Drive Level(D_L):	100μW typical
3.9 Operating Temperature Range(T_{OPR}):	-20 to + 70°C
3.10 Storage Temperature Range(T_{STG}):	-55 to + 125°C
3.11 Insulation Resistance(IR):	＞500M ohms
3.12 Aging($\triangle f_A$):	±5ppm/Year Max

Reliability Specification

	Item	Condition	Standard
1.	Drop characteristics	Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)	Frequency change:≤±5ppm Rr as specification
2	Mechanical shock	Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times	Frequency change:≤±5ppm Rr as specification
3.	Shake characteristics	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.	Frequency change:≤±5ppm Rr as specification
4.	Humidity characteristics	+40±2℃ & 90%~95% R.H. 250 hours	Frequency change:≤±5ppm Rr as specification
5.	Low temperature characteristics	-40±2℃, 250 hours, put in room temperature, test after 1 hours.	Frequency change:≤±5ppm Rr as specification
6.	High temperature characteristics	+85±2℃, 250 hours, put in room temperature, test after 1 hours.	Frequency change:≤±5ppm Rr as specification
7.	Temperature cycling	-30±3℃/30±3 min~+85±2℃/30±3min, 5 cycles	Frequency change:≤±5ppm Rr as specification
8.	Refluence examination	Max260℃ 200℃ Max150℃ 25℃ 1.Max 180sec 2. Max 10 sec 3.Max 80 sec 4.Max 90 sec	Frequency change:≤±5ppm Rr as specification

Package Outline Dimensions

11.5 MAX

5.0 MAX

Top View

3.68 MAX

0.43 ± 0.05

13.2 ± 0.5

Side View

4.88 ± 0.25

Bottom View

3.8 MAX

Units: mm

Packing Specification

200 PCS CRYSTAL PUT IN

⇩

PLASTIC BAG

5 BAG PUT IN

⇩

INNER BOX

20 BOX PUT IN

⇩

CARTON