



Victorlands Technical Specification

Product name	Quartz crystal unit
Model	49USSMD/13.500MHz
Product code	K2F13500S0Q2A2
Product parameters	20PF/±20PPM
Product reliability	P. 2-5
Packing form	P. 4



1.GENERAL

1.1 HOLDER TYPE	49USSMD
1.2 MODE OF VIBRATION	AT CUT
1.3 OSCILLATION MODE	FUND
1.4 TEST FACILITIES	S&A KH-1240
1.5 STORAGE TEMPERATURE	-40°C TO +85°C
1.6 DRIVER LEVEL	100 μ W

2.ELECTRICAL PARAMETER

2.1 NORMAL FREQUENCY	13.500MHz
2.2 FREQUENCY TOLERANCE (25°C $\pm$ 2°C)	$\pm$ 20ppm
2.3 TEMPERATURE STABILITY	$\pm$ 20ppm
2.4 OPERATING TEMPERATURE RANGE	-20°C TO + 70°C
2.5 LOAD CAPACITANCE	20PF
2.6 MOTIONAL CAPACITANCE	
2.7 SHUNT CAPACITANCE	3PF MAX
2.8 EFFECTIVE SERIES RESISTANCE	80 Ω MAX
2.9 INSULATION RESISTANCE	500M OHMS MIN AT DC 100V

3.MECHANICAL PARAMETER

3.1 SOLDERABILITY	95%COVERAGE BY USING 90/10 SOLD AT 245°C FOR 5 SEC. DIPPING AFTER IMMERSION IN ALPHA 611 FLUX FOR 5 SEC.
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I MECHANICAL ENDURANCE

Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour.

① SHOCK

Electrical characteristics shall be satisfied after dropping three time from the height of 50 cm onto Hard wooden board .

② VIBRATION

Electrical characteristics shall be satisfied after supplying following Vibration .

(1)VIBRATION FREQUENCY	10—55Hz
(2)REPEATED PERIOD	1—2min
(3)FULL CYCLE	1.5mm P—P
(4)DIRECTION	X.Y.Z
(5)TIME	2hours/each direction

③ STRENGTH OF TERMINALS/LEAD—WIRES

-1 PULLING

a)Body of specimen shall be fixed, and 900g of tension weight shall be supplied gradually to axial direction of terminals/lead-wires for 30 sec .

b)After above test a), there is no observation of any visual damages on the specimen.

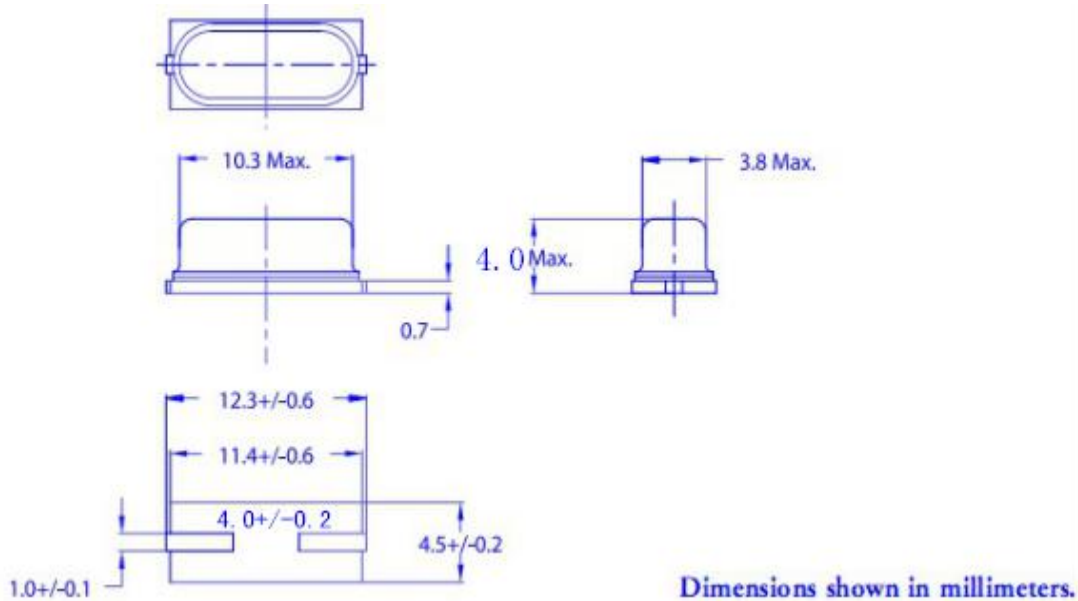
-2 BENDING

a)Body of specimen shall be fixed, and 90degree bending shall be given, being supplied 225gs tension weight .

After that, terminals/lead-wires shall be straightened gradually .

Then the same bending and straightening shall be supplied to the opposite direction in the same axial . (Refer to Fig-1)

b)After above test a), there is no observation of any visual damages on the specimen .



④ SEALING TIGHTNESS

There is no observation of gas bubble after specimen put in hot water at $+90^{\circ}\text{C}$ — $+95^{\circ}\text{C}$ for 5 min .

⑤ SOLDERING DIP

Terminals/lead-wires of specimen shall be dipped into solder melted tank at $+230^{\circ}\text{C}$ — $\pm 5^{\circ}\text{C}$ for 3sec . Dipping depth shall be 2mm from the bottom of specimens body . (After applying ROSIN flux) Soldering portion shall be covered in over 90% of terminals/lead-wires dipped .

⑥ SOLDER HEATING

Terminals/lead-wires of specimen shall be dipped into solder melted tank at

$+350^{\circ}\text{C}$ — $\pm 10^{\circ}\text{C}$ for $\frac{1}{3}$ sec .

Electrical characteristics shall be satisfied after dipping depth shall be 2mm from edge of terminals/lead-wires .



II ENVIRONMENTAL ENDURANCE

Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour .

① HUMIDITY

Electrical characteristics shall be satisfied after letting it alone at $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ in humidity of 90—95% for 250 hours .

② STORAGE IN LOW TEMPERATURE

Electrical characteristics shall be satisfied after letting it alone at $-30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 250 hours .

③ STORAGE IN HIGH TEMPERATURE

Electrical characteristics shall be satisfied after letting it alone at $+85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 250 hours .

④ TEMPERATURE CYCLE

Electrical characteristics shall be satisfied after supplying the following temperature cycle (3cycles) .

Temperature shift from low to high, high to low shall be done in $1^{\circ}\text{C}/\text{min}$ (Refer to Fig-2) .

