StrongFirst

SPEC NO.: CU-002SDIP

Specification

TO:STE508
Model Name: Crystal Unit
PART NO: 49S49S2-3.000-150.000M
CUSTOMER PART NO.:

APPROVAL SHEET

Approved?	Yes No.
Customer's comments are welcomed here. Pls return this copy as a certificate of your approval by email. Approved By Date: _____	

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History Record

Date	Part No.	SPEC No.	Description.	Remarks.
RoHS Compliant Lead free Lead-free soldering	ISO9001:2000 ISO14001:2004	**Approved by**	**Check by**	**Design by**
		May-15-2007	**May-10-2005**	**Jan-16-1999**
Reversions	**Total Page**	*Xu gang dong*	*Liu jun*	*Wang hon*
CU-002SDIP				

SPECIFICATION OF CRYSTAL UNIT

1. RANGE:

This specification shall cover the characteristics of crystal unit with Strong's P/N: 49S-49S2-3.000M-150.0000M

2. ELECTRICAL SPECIFICATION

ITEM	SPECIFICATION
PACKAGE TYPE	49S/49S2
NOMINAL FREQUENCY	3.000MHz-150.000MHz
LOAD CAPACITANCE	20PF, or Specify
OSCILLATION MODE	Fundamental, or 3rd
FREQUENCY TOLERANCE AT 25℃±5℃	±10PPM,or specify
EQUIVALENT SERIES RESISTANCE	Table 1
DRIVE LEVEL	1.0MW
OPERATING TEMPERATURE RANGE	-20℃~+70℃,or -40℃~+85℃
STORAGE TEMPERATURE	-55℃~+105℃
FREQUENCY STABILITY	±10PPM,or Specify
SHUNT CAPACITANCE	<7PF
AGING	±3PPM/YEAR
INSULATION RESISTANCE	>500MΩ at DC 100V ±15V

3. 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℃±5℃)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.	

4. ENVIRONMENTAL SPECIFICATION

1) Temperature test

* Temperature cycling test

Conditions:	Steps of cycle	1) At -55℃,30 minutes 2) At +25℃,10 - 15 minutes 3) At +85℃,30 minutes 4) At +25℃,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℃±2℃
	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℃±20℃
	Length of test	96 hours
Results:	Deviation of frequency must be less than	±3ppm

3) Salt spray test

Conditions:	Temperature	+35℃±2℃
	Length of test	48 hours
	NaCI %	5%

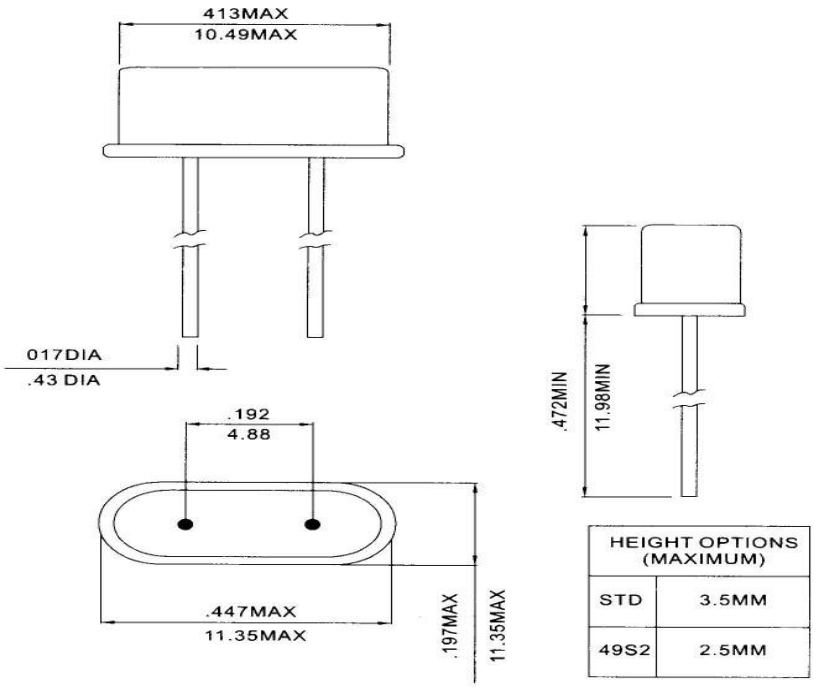
Results: There should be no stain on surface of products.

4) Humidity test

Conditions: Temperature +40℃±2℃
Relative humidity 90 - 95%
Length of test 96 hours

Results: a. Insulation resistance must be 500 MΩ/100 Vac. minimum
b. Resistance and wave form must remain within specifications.

5. Dimension (49S)



Equivalent series resistance(ESR) Table No.1								
Frequency	3.0~3.9MHz	4.0~4.9MHz	5.0~5.9MHz	6.0~7.9MHz	8.0~9.9MHz	10.0~14.9MHz	15.0~54.0MHz	36.0~150.0MHz
Mode	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	3rd
ESR	150 ohmsMax.	130 ohmsMax.	120 ohmsMax.	100 ohmsMax.	80 ohmsMax.	60 ohms Max.	40 ohms Max.	70 ohms Max.