

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. |
|---|-------------------------------|---------------------|-----------------|------------------|
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|  | ISO9001:2000 ISO14001:2004 | Approved by | Check by | Design by |
| | | May-15-2007 | May-10-2005 | Jan-16-1999 |
| Reversions | Total Page | <i>Xu gang dong</i> | <i>Liu jun</i> | <i>Wang hon</i> |
| 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°C ± 5°C | ± 10PPM, or specify |
| EQUIVALENT SERIES RESISTANCE | Table 1 |
| DRIVE LEVEL | 1.0MW |
| OPERATING TEMPERATURE RANGE | -20°C~+70°C, or -40°C~+85°C |
| STORAGE TEMPERATURE | -55°C~+105°C |
| 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°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. | |

4. 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% |

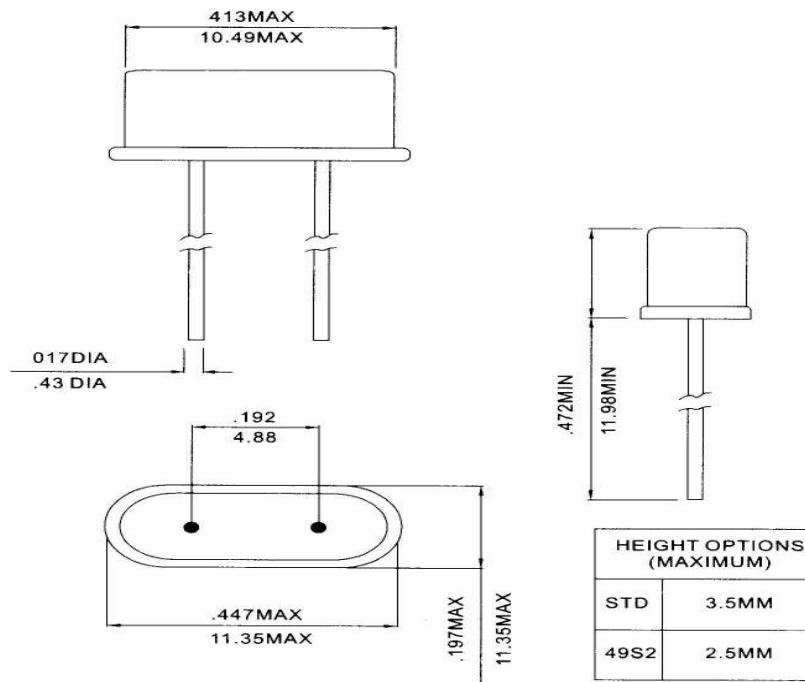
Results: There should be no stain on surface of products.

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 MΩ /100 Vac. minimum
 b. Resistance and wave form must remain within specifications.

5. Dimension (49S)



| 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. |