

Specification

TO:STE508

Model Name: Crystal Unit

PART NO: UM-1/UM-4/UM-5-8.000M-200.000M

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: _____

STRONG ELECTRONICS&TECHNOLOGY LIMITED

深圳市思硕电子科技有限公司

Tel:86-755-84528985 Fax: 86-755-84528986

Email:info@strongelectronics.net

www.sawfilter.cn

SPECIFICATION OF CRYSTAL UNIT

1. RANGE:

This specification shall cover the characteristics of crystal unit with Strong's P/N: UM-1/UM-4/UM-5-8.000M-200.000M

2. ELECTRICAL SPECIFICATION

ITEM	SPECIFICATION
PACKAGE TYPE	UM-1/UM-4/UM-5
NOMINAL FREQUENCY	8.000MHz-200.000Mhz
LOAD CAPACITANCE	20PF or Specify
OSCILLATION MODE	Fundamental, or 3rd
FREQUENCY TOLERANCE AT 25°C ± 5°C	± 10PPM or specify
EQUIVALENT SERIES RESISTANCE	ESR Table 1
DRIVE LEVEL	1.0MW
OPERATING TEMPERATURE RANGE	-20°C~+70°C or specify
STORAGE TEMPERATURE	-40°C~+85°C
FREQUENCY STABILITY	± 10PPM or specify
SHUNT CAPACITANCE	<5.0PF
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%

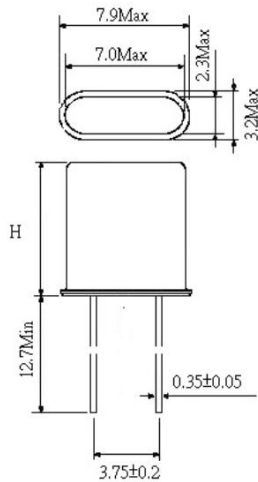
Results: There should be no stain on surface of products.

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 (UM-1/UM-4/UM-5)



TYPE	H(mm,Max)
UM-1	8
UM-5	6
UM-4	4.7

6.

Equivalent series resistance(ESR) Table No.1

Frequency	Mode	ESR
8.0~11.9 MHz	Fundamental	50 ohms Max.
12.0~14.9 MHz	Fundamental	30 ohms Max.
15.0~70.0 MHz	Fundamental	25 ohms Max.
35.0~44.9 MHz	3rd	50 ohms Max.
45.0~54.9 MHz	3rd	45 ohms Max.
55.0~200.0 MHz	3rd	40 ohms Max.

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