

# Shoulder 好达

SHOULDER ELECTRONICS CO., LTD.

## CRYSTAL RESONATOR Data Sheet

PRODUCT 产品: CRYSTAL RESONATOR

MODEL NO 型号: SMD0503

PREPARED 编制: Fengyu

CHECKED 审核: York

APPROVED 批准:

DATE 日期: 2007-01-25

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## 1.GENERAL ITEM

NORMINAL FREQUENCY:**10.00---80.00**MHz

VIBRATION MODE:AT.FUND.

OPERATION TEMPERATURE RANGE:-10 ~+60

STORAGE TEMPERATURE RANG:-30 ~+85

### TEST MACHINE:250B

DRIVE LEVEL:**10**uw

LOAD CAPACITANCE:10/12/16/**20**pF

## 2.ELECTRICAL CHARACTERISTICS(data inclosed)

CONDITION:25+/-3 RELATIVELY HUMIDITY 60%

2.1 FREQUENCY TOLERANCE:**+/-15/30**ppm

2.2 EQUIVALENT RESISTANCE: **40**

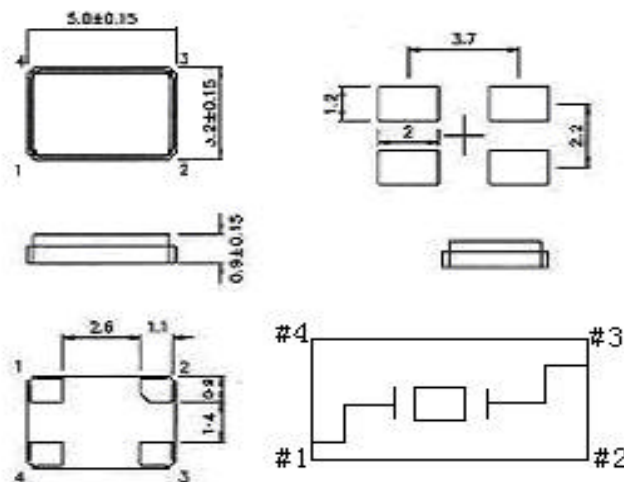
2.3 TEMPERATURE CHARACTERISTICS:**+/-20**ppm

2.4 SHUNT CAPACITANCE: 7pF

2.5 INSULATION RESISTANCE: 500M /100V+/-15V D.C

2.6 AGING CHARACTERISTICS:**+/-5**ppm/YEAR

## 3.DIMENSION



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#### **4.RELIABILITY**

##### **4.1 DROP CHARACTERISTICS**

CONDITION: HEIGHT 50CM,3 TIMES,TEST AFTER 1 HOUR

EQUIPMENT:S&A250B,THICKNESS 3CM HARD WOOD

STANDARD:FREQUENCY CHANGE+/- 5PPM,

RR AS SPECIFICATION

##### **4.2 SHAKE CHARACTERISTICS**

CONDITION: SHAKE FREQUENCY 10~55HZ, CYC1~2 MINUTES,SWING 1.5MM,

DIRECTION X/Y/Z,ALL 30 MINUTES . TEST AFTER 1 HOUR

EQUIPMENT:S&A250B,TEST MACHINE

STANDARD:FREQUENCY CHANGE+/- 5PPM,

**RR AS SPECIFICATION**

##### **4.3 AIRPROOF CHARACTERISTICS**

CONDITION: PUT CRYSTAL INTO THE PRESSURE CABIN WITH

ALCOHOL,KEEP PRESSURE 0.4-0.5Mpa 10 MINUTES,THEN

TAKE OUT AND BLOW FOR 5 MINUTES

**EQUIPMENT: IR MACHINE**

STANDARD:IR 500 M

##### **4.4 BEND CHARACTERISTICS**

CONDITION: 5N , 90 ° , 3 TIMES

EQUIPMENT:TEST MACHINE

STANDARD:NO DAMAGE

##### **4.5 WELD CHARACTERISTICS**

CONDITION: 235 ± 5 、 3 SECONS

EQUIPMENT:TEST MACHINE

STANDARD:90% ADHIBIT TIN OK

##### **4.6 HUMIDITY CHARACTERISTICS**

CONDITION:40 +/-2 , HUMIDITY 90-95%,250 HOURS.

EQUIPMENT:S&A250B,TEST CABIN

STANDARD:FREQUENCY CHANGE+/- 5PPM,

RR AS SPECIFICATION

##### **4.7 LOW TEMPERATURE CHARACTERISTICS**

**CONDITION: -30 ± 2 , AFTER 250 HOURS,PUT IN ROOM TEMPERATURE 1 HOUR**

EQUIPMENT:S&A250B,TEST MACHINE

STANDARD:FREQUENCY CHANGE+/- 5PPM,

RR AS SPECIFICATION

**4.8 HIGH TEMPERATURE CHARACTERISTICS**

CONDITION: 85 ± 2 , AFTER 250 HOURS,PUT IN ROOM TEMPERATURE 1 HOUR

EQUIPMENT:S&A250B,TEST MACHINE

STANDARD:FREQUENCY CHANGE+/- 5PPM,

RR AS SPECIFICATION

**4.9 TEMPERATURE CYCLING**

CONDITION: EQUIPMENT:S&A250A,TEST MACHINE,

STANDARD:FREQUENCY CHANGE+/- 5PPM,

RR AS SPECIFICATION

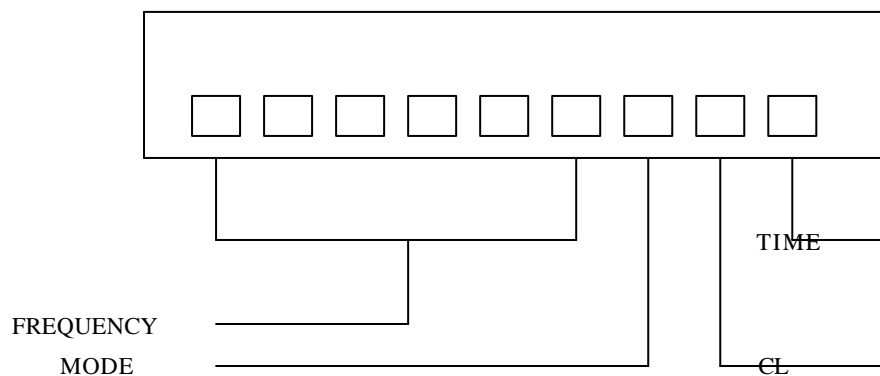
**4.10 REFLUENCE EXAMINATION**

CONDITION:EQUIPMENT:S&A250A,TEST MACHINE

STANDARD:FREQUENCY CHANGE+/- 10PPM,

RR AS SPECIFICATION

**5.MARKING SPECIFICATION**



TIME CODE:

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
CODE	1	2	3	4	5	6	7	8	9	O	N	D

CL CODE:

CL	CODE	CL	CODE	CL	CODE	CL	CODE	CL	CODE
Series	0	12pf	7	18pf	E	25pf	M	35pf	U
5pf	1	12.5pf	8	18.7pf	F	27pf	N	45pf	V
7pf	2	13pf	9	19pf	G	28pf	P	47pf	W
7.5pf	3	14.5pf	A	20pf	H	30pf	Q	50pf	X

