

Approved by:

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# ***SPECIFICATION***

**PRODUCT: CRYSTAL RESONATOR**

**MODEL: SMD0705-24.576**



**SHOULDER ELECTRONICS LIMITED**

## 1. SCOPE

This specification shall cover the characteristics of crystal unit with

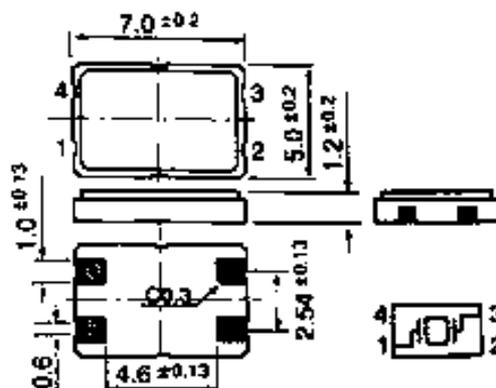
P/N: SMD0705-24.576-20

## 2. ELECTRICAL SPECIFICATION

ITEM	SPECIFICATION
HOLDER TYPE	SMD0705
NOMINAL FREQUENCY	24.576MHz
LOAD CAPACITANCE	20PF
OSCILLATION MODE	Fundamental
FREQUENCY TOLERANCE AT 25 ± 2	± 30PPM
EQUIVALENT SERIES RESISTANCE	40 max.
DRIVE LEVEL	0.5MW
OPERATING TEMPERATURE RANGE	-10 ~+60
STORAGE TEMPERATURE	-40 ~+85
FREQUENCY STABILITY	± 30PM
SHUNT CAPACITANCE	<7PF
AGING	± 5PPM/YEAR
INSULATION RESISTANCE	>500M at DC 100V

## 3.DIMENSION(mm)

SMD0705



#### 4. 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.	

## 5. 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 $\pm$ 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 $\pm$ 20
	Length of test	96 hours

Results: Deviation of frequency must be less than  $\pm$  3ppm

### 3) Salt spray test

Conditions:	Temperature	+35 $\pm$ 2
	Length of test	48 hours
	NaCl %	5%

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

### 4) Humidity test

Conditions:	Temperature	+40 $\pm$ 2
	Relative humidity	90 - 95%
	Length of test	96 hours

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