

## 1. SCOPE

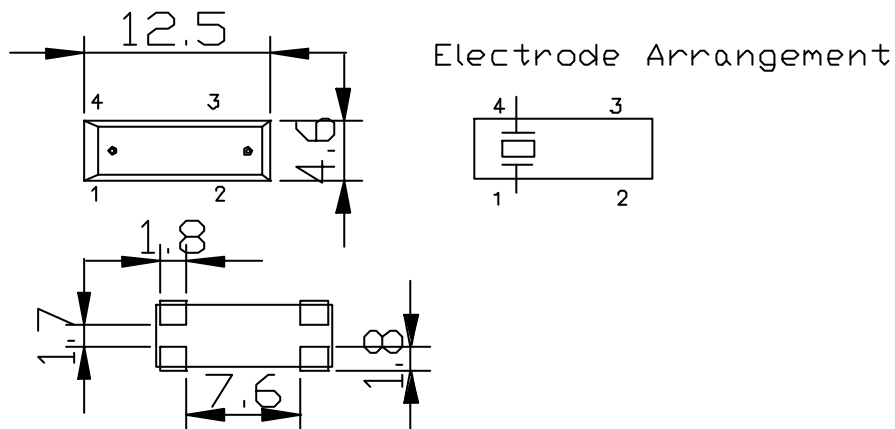
This specification shall cover the characteristics of crystal unit with

P/N: ZM309-

## 2. ELECTRICAL SPECIFICATION

ITEM	SPECIFICATION
HOLDER TYPE	12.5X4.6x3.7mm
NOMINAL FREQUENCY	3.579545-27.000MHZ
LOAD CAPACITANCE	12PF
FREQUENCY TOLERANCE (25 ± 2 )	± 50PPM
EQUIVALENT SERIES RESISTANCE	70 max
DRIVE LEVEL	50 μ W
OPERATING TEMPERATURE RANGE	-10 ~+60
STORAGE TEMPERATURE	-40 ~+85
AGING	± 5PPM/YEAR
INSULATION RESISTANCE	>500M

## 3. DIMENSION (Unit: mm)



## 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 ± 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	± 3	ppm

### 3) Salt spray test

Conditions:	Temperature	+35 ± 2
	Length of test	48 hours
	NaCl %	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 M /100 Vac. minimum	
	b. Resistance and wave form must remain within specifications.	