

## Specifications for Approval Sheet.

Customer Name.	:	MOBICON HOLDINGS LTD
Manufacture Name.	:	
Description.	:	QUARTZ CRYSTAL UNIT.
Part No.	:	JF18.432M9SS/SM20F3030D2T&R
Customer Part No.	:	SMD49S-18.432M2030F
Application.	:	
Issued Date.	:	Wednesday, October 11, 2017

Jingfeng Technical 10/11/2017		
Approve	Auditing	Compile

Please return this copy as a certification of your approval sheet.

Customer's Approval Certificate.	
Checked & Approval by.	:
Approved Date.	:

## SPECIFICATION FOR 49US/SMD QUARTZ CRYSTAL UNIT.

**Part Number : SMD49S-18.432M2030F**

### 1. SCOPE

This specification shall cover the characteristics of the Quartz Crystal with 18.432000MHz.

### 2. CUSTOMER NO :

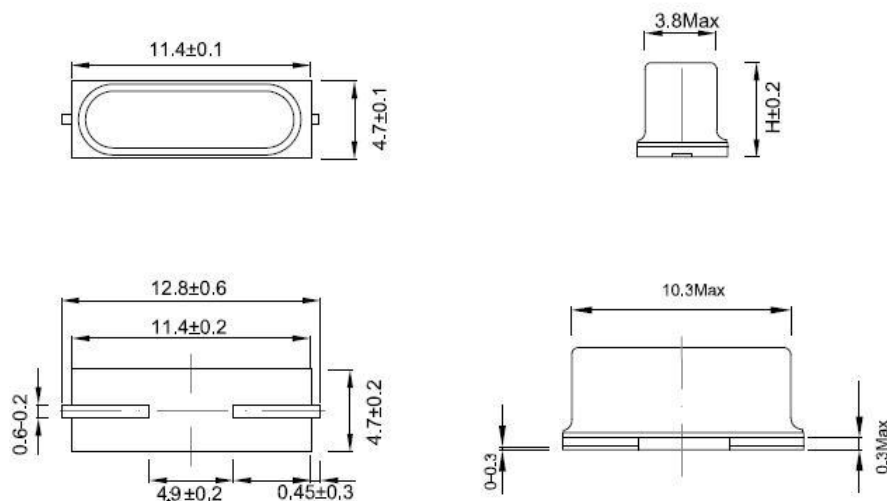
- 2-1 Application. :  
2-2 Holder Type. : HC-49US/SMD Package. ( Pb-free )  
2-3 Mode of Oscillation. : AT-Cut, Fundamental.

### 3. ELECTRICAL CHARACTERISTICS

No.	Item.	Specification.
3-1	Nominal Center Frequency. (Fo)	18.432000MHz
3-2	Mode of Oscillation	AT Fundamental
3-3	Load Capacitance (pF)	20pF
3-4	Frequency Tolerance at 25°C±2°C. (ppm)	±30 ppm (RT/ppm)
3-5	Stability Temperature Characteristics. (ppm)	±30 ppm (TC/ppm)
3-6	Operating Temperature Range. (°C)	-20°C ~ +70°C
3-7	Storage Temperature Range. (°C)	-40°C ~ +85°C
3-8	Equivalent Resistance. (Ω)	40 Ω Maximum
3-9	Drive Level. (uW)	100 μW Typ
3-10	Shunt Capacitance. (pF)	7 pF Maximum.
3-11	Insulation Resistance. (Ω)	DC 100V ± 15V. / ≥500 MΩ Minimum.
3-12	Measuring Equipment.	See Table 1
3-13	Aging.	±5 ppm / Year.

### 4. DIMENSIONS and MARKING.

4-1 Dimensions. ( Not to Scale, Unit : mm, HC-49US/SMD , H: 3.2mm )



## 4-2 Marking System.

Marking :

M18.432K7J

## 5 .MECHANICAL CHARACTERISTICS

No.	Item.	Condition of Test.
6-1	Shock Test.	The crystal unit is dropped from the height of 60cm in free fall condition on a 30mm-thick hard wood board for 3 times. Frequency change should be less than : $\pm 5\text{ppm}$ Resistance change should be less than : $\pm 15\%$ Test of hermitic ability no bubble in water at $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 3 minutes.
6-2	Vibration Test.	Subject the electrical characteristics should be $\pm 5\text{ppm}$ in measurement of frequency and $\pm 15\%$ if the measurement of resistance.
6-3	Solder-ability Test.	Dip the quartz crystal unit terminal no closer than 1.5mm into the solder bath at $230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $5 \pm 1$ seconds. More than 95% of the terminals surface shall be covered with the solder.
6-4	Resistance to the Solder Heat.	The temperature shall be $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , immersion duration shall be 10 seconds. Using a heat shunt board. And then the quartz crystal unit shall be released to standard room temperature condition for 1 hour before with measurement shall be made. Electric characteristics shall be satisfy the spec.
6-5	Moisture.	Keep the quartz crystal unit at $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 90% RH for 96 hours. Then release the crystal unit in to the room condition for 1 hours prior to the measurement. It shall fulfill the spec.
6-6	High Temperature Exposure.	Subject the quartz crystal unit to $70^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 hours. Then release the crystal unit in to the room condition for 1 hours prior to the measurement. It shall meet the spec.
6-7	Low Temperature Exposure.	Subject the quartz crystal unit to $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 hours. Then release the crystal unit in to the room condition for 1 hours prior to the measurement. It shall meet with the tolerance of the spec.
6-8	Hermetical Test.	No bubble in water at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 3 minutes.
6-9	Lead Pulling Test.	Weight along with the direction of lead without any shock $-0.9\text{ kg}$ for $5 \sim 10$ seconds. The product shall show no evidence damage and shall satisfy the initial electric characteristics.
6-10	Lead Bending Test.	Lead shall be subject to withstand against bending of $90^{\circ}\text{C}$ twice at it's stem. And then the lead shall show no evidence damage and shall satisfy the initial electric characteristics. The quartz crystal unit shall be held by it's body in such a manner that the axes of it's terminal are vertical. A mass having $0.45\text{kg}$ shall be inclined through an angle of $90^{\circ}$ in the vertical plane, taking 2 seconds. There should be no damage in the lead and any change in electric characteristics.

## 6. SEALING.

The quartz crystal unit shall be immersed in water at a temperature of  $80^{\circ}\text{C}$  or higher.

Inspection shall be made after 5 minutes while the crystal unit still in the water.

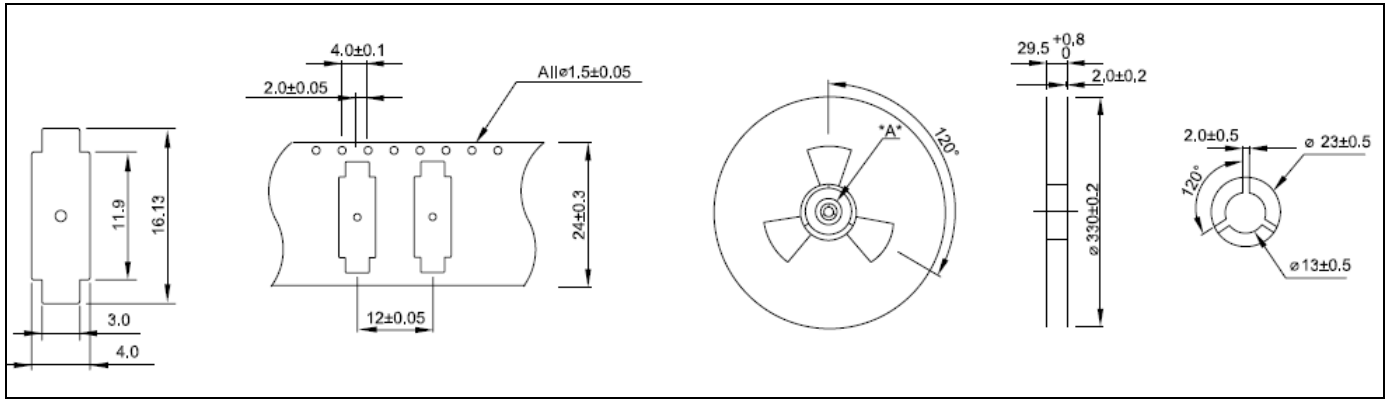
Without leakage as determined by repetitive bubbles ember from the crystal unit.

## 7. REVIEW OF SPECIFICATION.

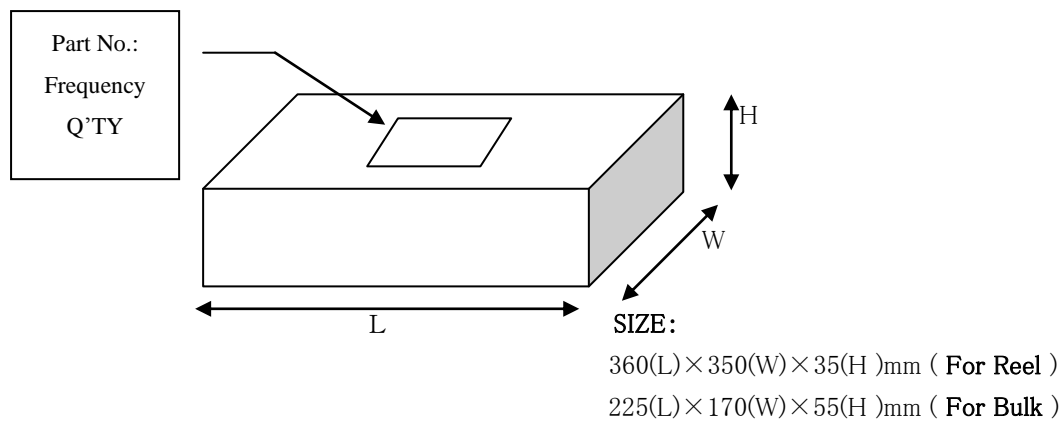
When something gets doubtful with this specification, we shall jointly work to get an agreement.

## 8. PACKING METHODE AND WEIGHT.

### ■ SMD Tape Packing Dimensions. (Unit : mm)



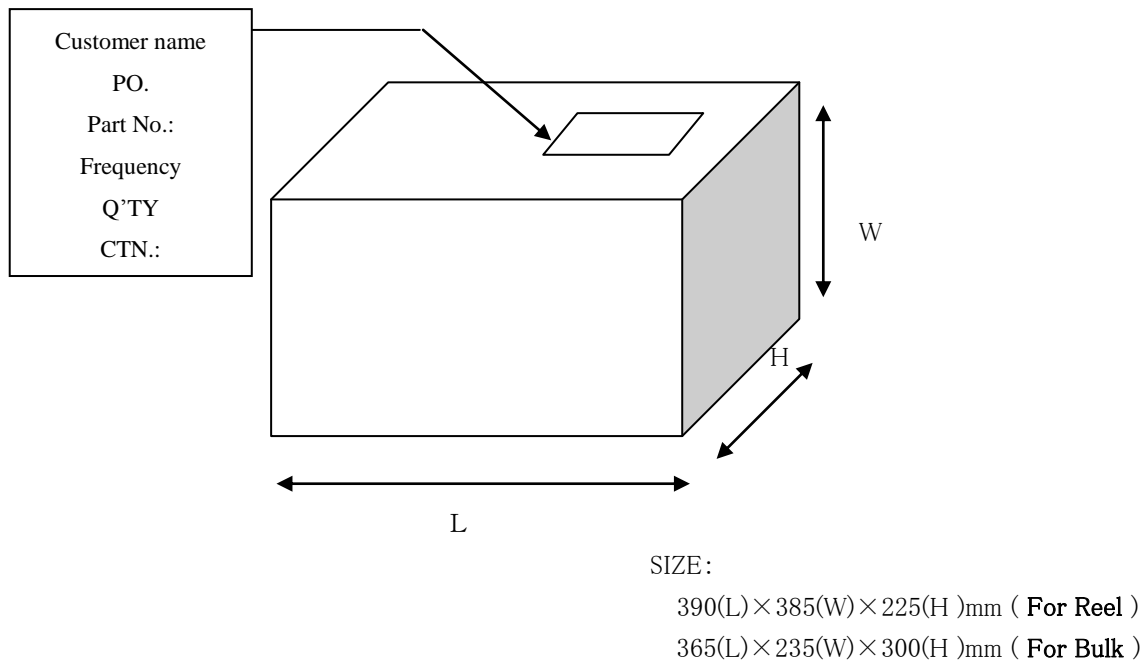
### ■ Inner Box



4 bags in each inner box (Each 500pcs in vinyl packing) (For Bulk )

1 reel in each inner box (Each 1000pcs in reel packing) (For Reel )

### ■ Outer Carton



10 boxes in each outer carton, Q'TY: 20,000pcs (For Bulk)

5 boxes in each outer carton, Q'TY: 5,000pcs (For Reel & Taping)