

DATE: June 12, 2023

产品规格书

SPECIFICATION FOR APPROVAL



用户名称	CUSTOMER:	<u>Quartz 1</u>
产品描述	DESCRIPTION:	Monolithic Crystal Filter UM-5 21.4MHz
产品部品号	MANUFACTURER PART NO.:	FT21M20A
用户部品号	CUSTOMER PART NO:	
使用于机型	USED IN MODEL:	

承 认 APPROVAL		
工程部 TECHNOLOGY DEPT.	品质部 QUALITY DEPT.	采购部 PURCHASING DEPT.



深圳市炬焯科技有限公司

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1. QUARTZ CRYSTAL UNIT SPECIFICATION

1. General

1.1 Model Name : FT21M20A

1.2 Holder type : UM-5

2. Electrical Specification :

2.1 Frequency: 21.400MHz

2.2 Mode of Oscillation AT Fundamental

2.3 Pass Band Width : $\pm 10\text{KHz}$ min (at 3dB)

2.4 Stop Band Width: $\pm 25\text{KHz}$ max (at 10dB)

2.5 Pass Band Ripple : 0.5dB max

2.6 Insertion Loss : 1.5dB max

2.7 Attenuation Guarantee : 50dB min ($f_0+30\text{KHz}\sim+1000\text{KHz}$)

60dB min ($f_0-30\text{KHz}\sim-1000\text{KHz}$)

2.8 Terminating Impedance : IN: 1800 Ω OUT: 1800 Ω

IN Parallel Capacitance: 1.5pF

2.9 Spurious Response :

2.10 Insulation resistance : More than 500M ohms at DC 100V

3. Operable temperature range : -20 $^{\circ}\text{C}$ To +70 $^{\circ}\text{C}$

4. Storage temperature range : -40 $^{\circ}\text{C}$ To +85 $^{\circ}\text{C}$

4. Mechanical Data

4.1 Sealing Test : Reduced Pressure (260mmHg of mercury)

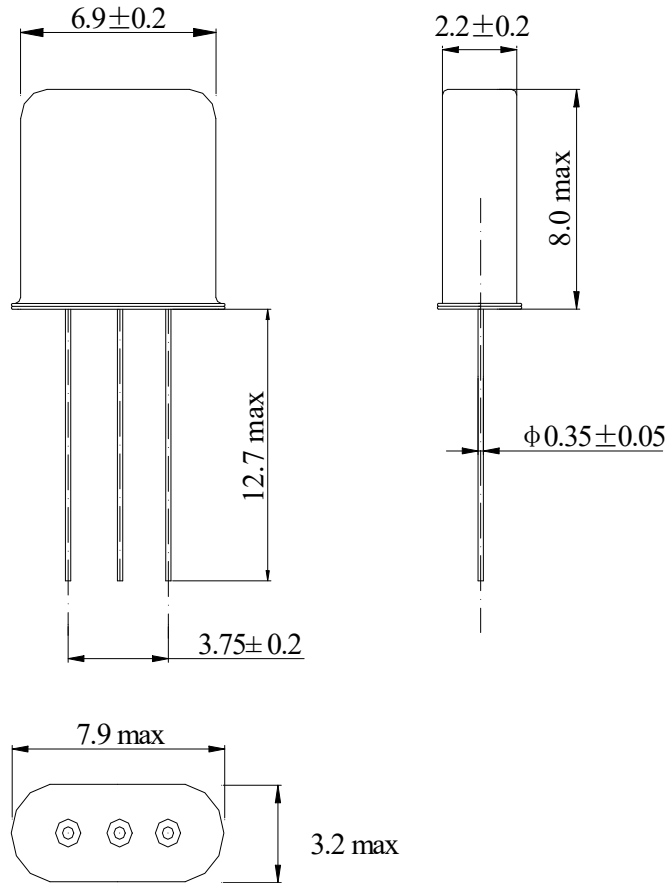
5. Dimensions and marking : Refer to page. 3

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MARKING & DIMENSIONS

*Appearance: Mark Shall Be Clear, Appearance Shall Be Smooth And No Damage.

*Dimensions: Unit: mm



*Marking should be printed as following:

Logo, Nominal Frequency

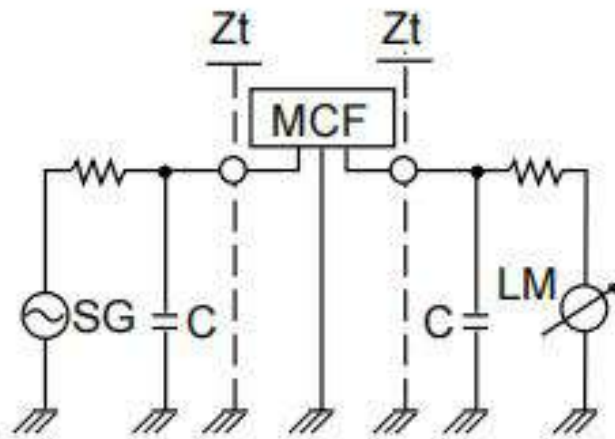
Logo: FT

Nominal Frequency:

Marking: Laser marking or Ink marking.

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TEST CIRCUIT



2-POLE MCF
Zt: Terminating Impedance

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6.MECHANICAL/ENVIRONMENTAL CHARACTERISTICS

NO.	ITEM	SPECIFICATIONS
6.1	<i>Resistance to Cold</i>	The units should satisfy its frequency and resistance specifications stated in Table 1 after being subjected to stand at $-40\pm 3^{\circ}\text{C}$ for 2 hours. The units are then allowed to stand at room temperature for approx 2 hours before checking.
6.2	<i>Resistance to Heat</i>	The units should satisfy its frequency and resistance specifications stated in Table 1 after being subjected to stand at $100\pm 2^{\circ}\text{C}$ for 2 hours. The units are then allowed to stand at room temperature for approx 2 hours before checking.
6.3	<i>Temperature Cycle</i>	The units should satisfy its frequency and resistance specifications stated in Table 1 after the units are subjected to stand in a Low Temperature Chamber at $-40\pm 3^{\circ}\text{C}$ for 30 minutes and to stand in a High Temperature Chamber at $100 \pm 2^{\circ}\text{C}$ for 30 minutes, with 2 to 3 minutes standby at room temperature in between the chamber transfers. This consist of one cycle; and units are subjected continuously for 5 cycles. After cycling, the units are allowed to stand at room temperature for approx 2 hours before checking.
6.4	<i>Aging</i>	The units should satisfy its frequency and resistance specifications stated in Table 1 after the units are subjected to stand 720 (30 days) ± 12 hours in an $85\pm 3^{\circ}\text{C}$ chamber. The units are allowed to stand at room temperature approx 2 hours before checking.
6.5	<i>Resistance to Damp</i>	The units should satisfy its frequency and resistance specifications stated in Table 1 after the units are subjected to stand in the test chamber capable of maintaining $60\pm 2^{\circ}\text{C}$ temperature and 90 to 95%(RH) relative humidity for 500 hours. The units are then allowed to stand for approx 2 hours in room temperature before checking
6.6	<i>Bending Strength of Lead Wire Termination</i>	The unit's lead wire should withstand a weight of 450g in mass suspended from its original draw-out axis, and turning the body at a bending rate of 2 to 3 secs. until it IS approx 90° from the original axis; and returning back to its original position at the same bending rate. After this, the same method is repeated on the opposite 90° position. There should be no abnormalities detected on the unit.

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6.7	Tensile Strength Termination	The units should withstand a tensile force applied to the termination in the direction of its draw-out axis of up to 900g maintained as is for 30±5 seconds. There should be no abnormalities detected on the unit.
6.8	Solder ability	Under JIS C 5033 , at least 90% of the lead wire periphery surface is covered with new solder up to the point where it is dipped on a molten solder.
6.9	Resistance to Soldering Heat	The units are measured for its frequency and resistance in accordance with Table 1 after immersion into molten solder with a temperature of 350±10°C for 3 to 4 seconds and at a depth up to a point 2.0 to 2.5 mm from the base root.
6.10	Dropping Test	<ul style="list-style-type: none"> ● Unit Drop Test The units are measured for its frequency and resistance in accordance with Table 1 after allowing the units to fall freely from 20 cm of height 3 times on a firm wood . ● Shipping Carton Drop Test The units are measured for its frequency and resistance in accordance with Table 1 after dropping the units packaged inside a shipping carton box (randomly positioned) from a 50 cm height in each planar sides of the carton on a concrete floor.
6.11	Vibration Test	The units are measured for its frequency and resistance in accordance with Table 1 after subjecting to 2 hours of vibration with 1.5 mmp-p amplitude with 10-55-10Hz frequency sweep within 1 minute. Three perpendicular plane (axes) of vibration are available; however each unit is allowed to vibrate in only one plane, thus each plane requires approx 1/3 of the total units.

TABLE 1	
Electrical Specification	Should satisfy stated in 2.3 2.4 2.5 2.6
	Should satisfy stated in 2.7 2.10

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