



**CHEQUERS ELECTRONIC (CHINA) LIMITED**  
捷嘉電子(中國)有限公司

**CERAMIC RESONATOR SPECIFICATION**

**PART NO.: ZTT8.00MT**

Part no.	: ZTT8.00MT
Printed on	: 22-May-10
Prepared	: Nelson
Ver. Ctrl.	: JX081905/N
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## 1. Scope

This specification shall cover the characteristics of the ceramic resonator with ZTT8.00MT for clock oscillation circuit such as microprocessors.

## 2. Part no.: ZTT8.00MT

## 3. Electrical specification

3-1	Nominal oscillating frequency	8.00MHz
3-2	Initial tolerance	±0.50% max.
3-3	Resonant resistance	25Ω max.
3-4	Insulation resistance	5x10 <sup>8</sup> Ω min. (at 10V DC)
3-5	Withstanding voltage	DC 100V (5 seconds) max.
3-6	Rating voltage - DC voltage - AC voltage	6V DC 15V p-p
3-7	Temperature stability (-20°C to +80°C) Operating temperature Storage temperature	±0.3% max. (from initial value) -20°C to +80°C -40°C to +85°C
3-8	Aging (for 10 years)	±0.3% max. (from initial value)

## 4. Physical characteristics

	Test item	Condition of test	Performance requirement
4-1	Random drop	Resonator shall be measured after 3 times of random drops from the height of 1 meter on concrete floor.	No visible damage and the measured values shall meet Table 1.
4-2	Vibration	Resonator shall be measured after being applied with vibration (amplitude: 1.5mm, frequency: 10Hz to 55Hz) to each of the 3 perpendicular directions (X, Y, and Z) for 2 hours.	The measured values shall meet Table 1.
4-3	Resistance to soldering heat	Lead terminals are immersed up to 2mm from the resonator's body in solder bath (260°C±5°C for 5 seconds±1 second). Then the resonator shall be measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
4-4	Solderability	Lead terminals are immersed in solder bath (250°C±5°C) for 2 seconds ± 0.5 second.	Min. 95% of lead terminals' surface shall be covered with solder.
4-5	Terminal strength	A force of 5N is applied to each terminal in axial direction for 10 seconds±1 second, the resonator shall be measured.  After lead terminals are fixed at 2mm from the resonator's body. They shall be folded up to 90° from their axial direction and folded back to -90°, then folded back to their axial direction. The speed of folding shall be 3 seconds.	No visible damage and the measured values shall meet Table 1.  No cutting off shall be visible.

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**5. Environmental characteristics**

	<b>Test item</b>	<b>Condition of test</b>	<b>Performance requirement</b>
<b>5-1</b>	High temperature	After being placed in a chamber (+85°C±5°C) for 500 hours±4 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
<b>5-2</b>	Low temperature	After being placed in a chamber (-25°C±5°C) for 500 hours±4 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
<b>5-3</b>	Humidity	After being placed in a chamber with a humidity of 90% to 95% RH and a temperature of +40°C±2°C for 96 hours±4 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
<b>5-4</b>	Heat shock	After being kept at room temperature, resonator shall be placed at a temperature of -25°C. After 30 minutes at this temperature, the resonator is immediately placed at a temperature of +85°C. After another 30 minutes at this temperature, the resonator is placed under -20°C again. The above processes are counted as 1 cycle. After 5 cycles (with a transfer time of 15 seconds between each cycle), the resonator shall be measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.

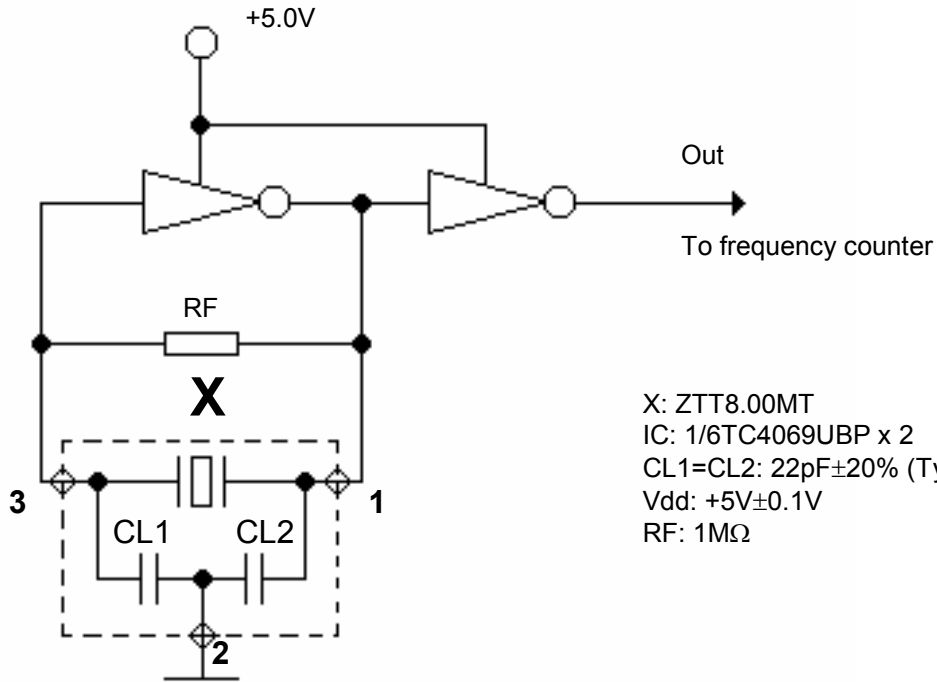
**Table 1**

<b>Measurements</b>	<b>Requirements</b>
Oscillating frequency change	±0.3% max. (ref. from initial value)
Resonant impedance	25Ω max. (ref. from initial value)

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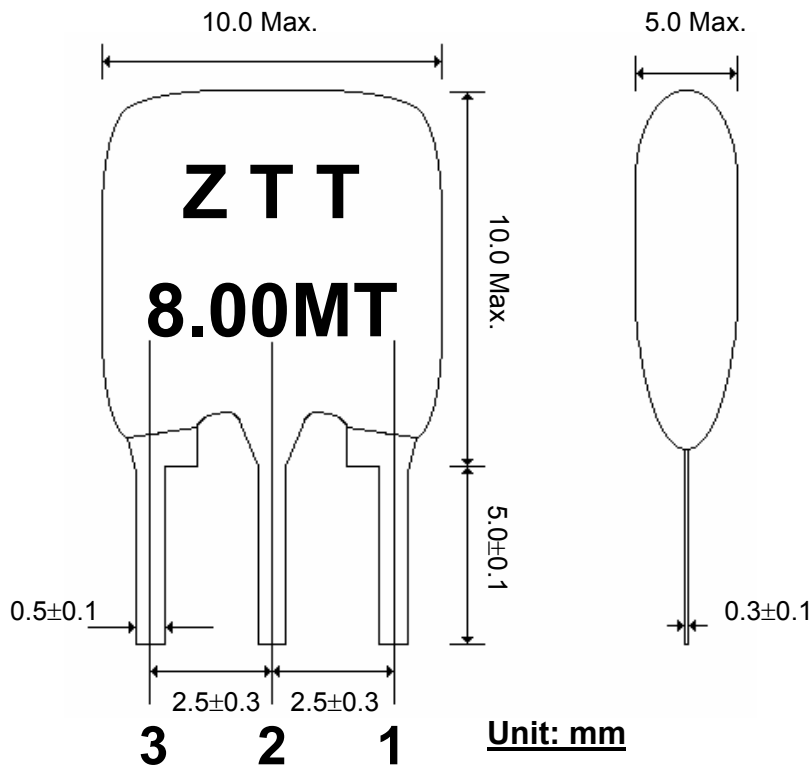
## 6. Test circuit

- 6-1 Oscillating frequency : See Figure 2.
- 6-2 Equivalent circuit constants : Network Analyzer HP87510A or equivalent
- 6-3 Measuring condition : Temperature: +5°C to +35°C  
Humidity: 45% to 85% RH
- If require : Temperature: +25°C ± 3°C  
Humidity: 60% ± 10% RH



X: ZTT8.00MT  
 IC: 1/6TC4069UBP x 2  
 CL1=CL2: 22pF±20% (Typical)  
 Vdd: +5V±0.1V  
 RF: 1MΩ

## 7. Dimension of ZTT8.00MT



Pin	Function
1	Input
2	Ground
3	Output

**Unit: mm**

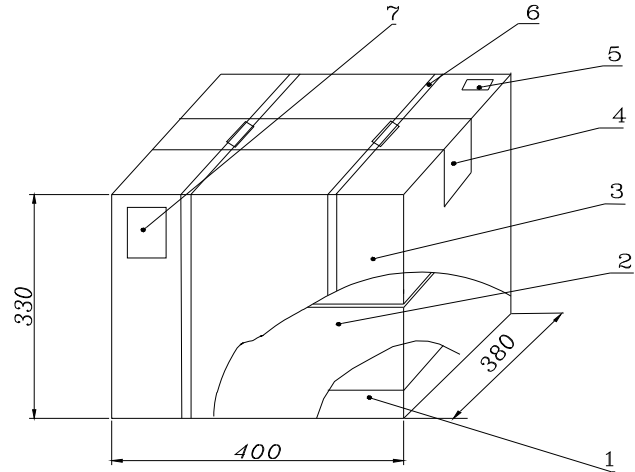
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## 8. Packing

### 8-1 Outer carton box

1	Paper box
2	Inner carton box
3	Outer carton box
4	Self-adhesive tape
5	Product information label
6	Cargo belt
7	Product information label

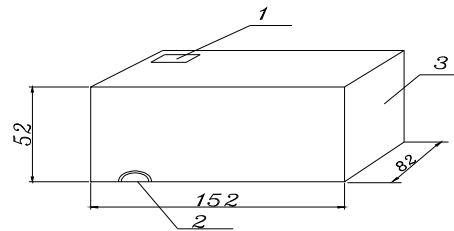
Unit: mm



### 8-3 Paper box

1	Product information label
2	QC seal label
3	Paper box

Unit: mm



### 8-3 Quantity

- Per plastic bag : 500 pieces
- Per paper box : 2 plastic bags (1000 pieces)
- Per inner carton box : 20 paper boxes (20000 pieces)
- Per outer carton box : 2 inner carton boxes (40000 pieces)

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