

MEC

CERAMIC RESONATOR SPECIFICATION

PART NO. :

ZTT 8.0MT

ELECTRICAL CHARACTERISTICS

- | | |
|---|---------------------------------|
| 1. Oscillation Frequency (Fosc) | 8.0MHz \pm 0.5% |
| 2. Resonant Impedance (Ro) | 30 Ohm max. |
| 3. Temperature Coefficient of Oscillation Frequency | \pm 0.3% max. (-20°C ~ +80°C) |
| 4. Withstanding Voltage | 50VDC @ 1 minute |
| 5. Rating Voltage: | |
| D.C. Voltage | 6V |
| A.C. Voltage | 15Vpp |
| 6. Insulation Resistance | 100 MOhm min. @10V DC |
| 7. Operating Temperature | -20°C ~ +80°C |
| 8. Storage Temperature | -55°C ~ +85°C |
| 9. Aging Rate (Fosc) | \pm 0.3% max. for 10 years |

MEASUREMENT

Measurement Condition

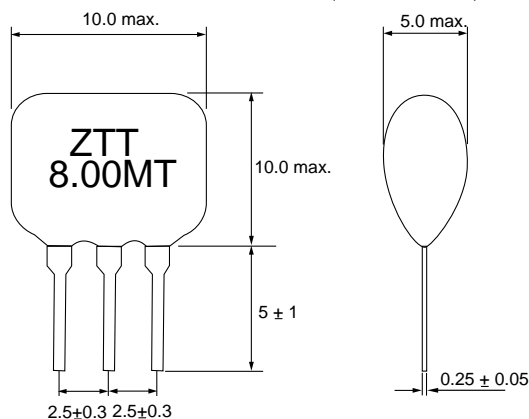
The reference temperature shall be 25°C \pm 2°C. The measurement shall be performed at the temperature range of 5°C ~ 35°C unless otherwise the result is doubtful.

MEASUREMENT CIRCUIT AND EQUIPMENT

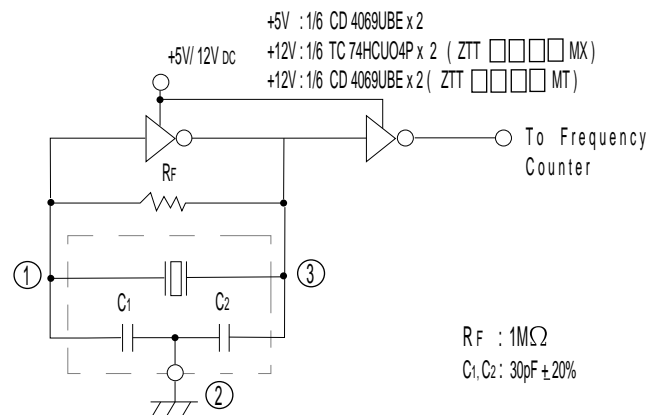
Oscillating frequency shall be measured by the standard test circuit.

Resonant impedance shall be measured by *HP8751A Network Analyzer*.

Mechanical Dimensions (Unit = mm)



Test Circuit (C₁, C₂ = 30pF)



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PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No.	Item	Condition of Test		Performance Requirements
1	Humidity	Keep the resonator at $40 \pm 2^{\circ}\text{C}$ and 90~95% RH for 96 ± 4 hours. Then release the resonator into the room condition for 1 hour prior to the measurement.		<i>It shall fulfill the specifications in Table 1.</i>
2	Vibration	Subject the resonator to vibration for 2 hours each in X, Y and Z axis with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10~55Hz.		
3	Mechanical Shock	Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.		
4	Resistance to Solder Heat	Dip the resonator terminals no closer than 2mm into the solder bath $260 \pm 5^{\circ}\text{C}$ for 10 ± 1 seconds.		
5	Soldering Test	Passed through the reflow oven under the following condition, and left at room temperature for 1 hour before measurement.		
		Temperature at the surface of the substrate:	Time	
		Preheat $150 \pm 5^{\circ}\text{C}$	60 ± 10 sec.	
		Peak $240 \pm 5^{\circ}\text{C}$	10 ± 3 sec.	
6	High Temperature Exposure	Subject the resonator to $80 \pm 5^{\circ}\text{C}$ for 96 ± 4 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.		

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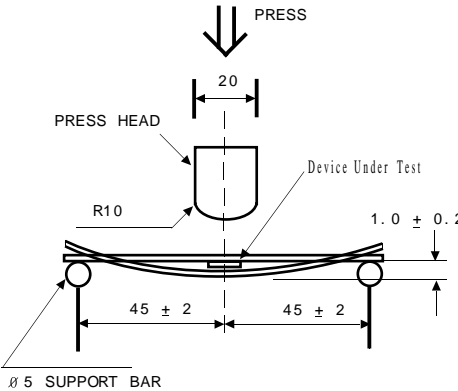
7	Low Temperature	Subject the resonator to $-20 \pm 5^{\circ}\text{C}$ for 96 ± 4 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.	<i>It shall fulfill the specifications in Table 1.</i>
8	Temperature Cycling	Subject the resonator to -20°C for 30 min. followed by a high temperature of 85°C for 30 min. cycling shall be repeated 5 times with a transfer time of 15 seconds. At the room temperature for 1 hour prior to the measurement.	
9	Solderability	Dipped in $230 \pm 5^{\circ}\text{C}$ seconds with resin flux. (25wt% ethanol solution)	The terminals shall be at least 95% covered by solder.
10	Board Bending	<p>Mount a glass epoxy board (width = 40mm, thickness = 1.6mm), then bend it to 1mm displacement and keep it for 5 seconds. (See the following figure)</p> 	Mechanical damage such as breaks shall not occur.

TABLE 1

Item	Specification
Oscillation Frequency Change	$\Delta F / F_{osc} \leq 0.5\% \text{ max.}$
Resonant Impedance	Within 30Ω

REVIEW OF SPECIFICATIONS

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



Prepared by: Leo Wong
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