

MIEC

CERAMIC RESONATOR SPECIFICATION

PART NO. :

ZTTCC6.0MG

ELECTRICAL CHARACTERISTICS

- | | |
|---|---------------------------------|
| 1. Oscillation Frequency (Fosc) | 6.0MHz \pm 0.25% |
| 2. Resonant Impedance (Ro) | 30 Ohm |
| 3. Temperature Characteristics of Oscillation Frequency | \pm 0.3% max. (-20°C ~ +80°C) |
| 4. Rating Voltage: | |
| D.C. Voltage | 6V |
| Load Voltage | 15Vpp |
| 5. Insulation Resistance | 100 MOhm min. @ 10V DC |
| 6. Frequency Drift vs Temperature | $< \pm$ 0.3% |
| 7. Operating Temperature Range | -20°C ~ +80°C |
| 8. Storage Temperature Range | -55°C ~ +85°C |
| 9. Frequency Aging | \pm 0.3% max. for 10 years |

MEASUREMENT

Measurement Condition

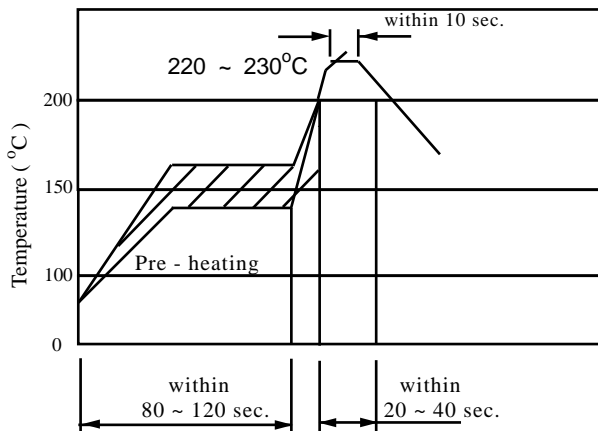
The reference temperature shall be 25°C \pm 2°C. The measurement shall be performed at the temperature range of 5°C ~ 35°C unless otherwise the result is doubtful.

MEASUREMENT CIRCUIT AND EQUIPMENT

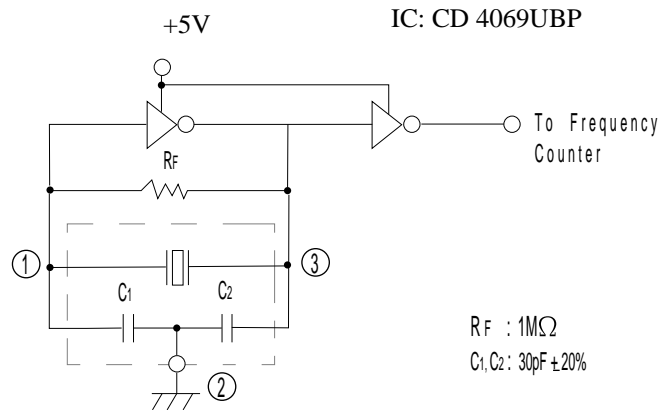
Oscillating frequency shall be measured by the standard test circuit.

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

Recommended Reflow Soldering Standard Conditions



Test Circuit (C₁, C₂ = 30pF)

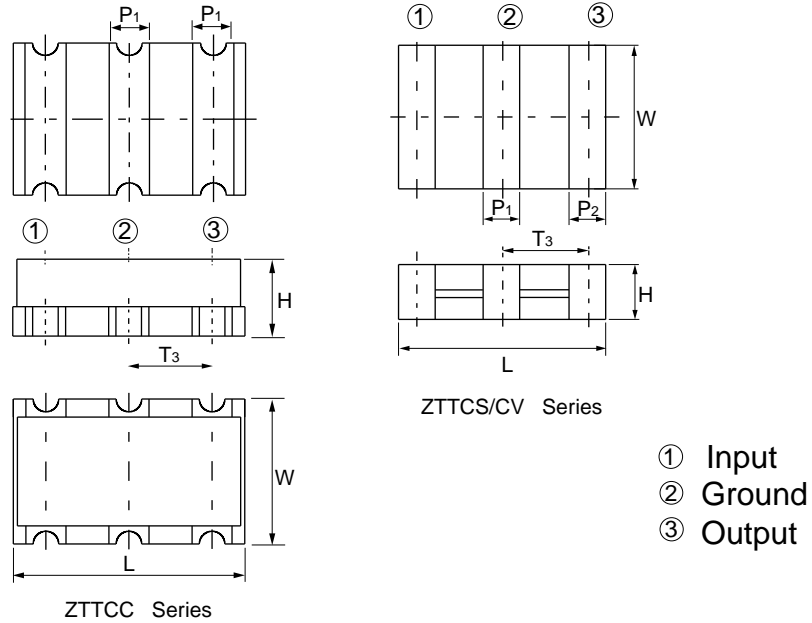


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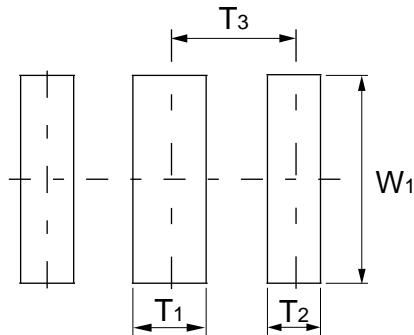
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MECHANICAL DIMENSIONS



Item \ Type	DIMENSION (mm)								
	L	W	H	P1	P2	T1	T2	T3	W1
ZTCC	7.4 ± 0.3	3.4 ± 0.3	1.8 ± 0.3	1.2 ± 0.3	1.2 ± 0.3	1.5 ± 0.3	1.7 ± 0.3	2.5 ± 0.3	4.0 ± 0.3
ZTCS	4.7 ± 0.3	4.1 ± 0.2	1.6 ± 0.3	1.0 ± 0.4	0.8 ± 0.4	1.3 ± 0.2	0.8 ± 0.2	1.95 ± 0.2	5.1 ± 0.2
ZTTCV	3.7 ± 0.2	3.1 ± 0.2	1.2 ± 0.3	0.9 ± 0.3	0.7 ± 0.3	1.0 ± 0.2	0.7 ± 0.2	1.5 ± 0.2	4.1 ± 0.2

RECOMMENDED LAND PATTERN



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PHYSICAL AND ENVIRONMENTAL CHARACTERISRICS

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</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.	<i>shall</i>	
3	Mechanical Shock	Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.	<i>fulfill</i>	
4	Soldering Test	Passed through the reflow oven under the following condition, and left at room temperature for 1 hour before measurement.	<i>the specifications</i>	
		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.
5	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.	<i>in Table 1.</i>	
6	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.		

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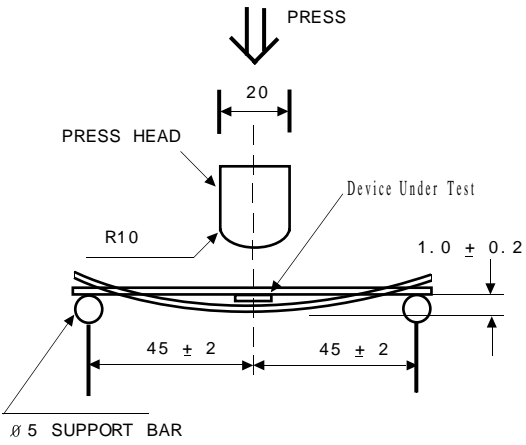
7	Temperature Cycling	Subject the resonator to -20°C for 30 min. followed by a high temperature of 85°C for 30 min. cycling shall be repeated 5 times with a transfer time of 15 seconds. At the room temperature for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
8	Solderability	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.
9	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	$\Delta F / F_{osc} \leq 0.3\% \text{ max.}$
Resonant Impedance	Within $\pm 10 \Omega$

REVIEW OF SPECIFICATIONS

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



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