

# **MOBICON**

## **Electronic Components**

### **PRODUCT SPECIFICATION**

### **MEC SMD RESONATOR**

### **FREQUENCY COMPONENTS**

**ZTACC Series SMD RESONATOR SPECIFICATION**

<b>MOBICON HOLDINGS LTD.</b>		
<b>Prepared By</b>	<b>Sign.</b>	<b>Approved By</b>
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# MIEC

## CERAMIC RESONATOR SPECIFICATION

**PART NO. :**

**ZTACC2.0MG**

### ELECTRICAL CHARACTERISTICS

- |   |                                 |
|---|---------------------------------|
| 1. Oscillation Frequency (Fosc)                         | 2.0MHz $\pm$ 0.5%               |
| 2. Resonant Impedance (Ro)                              | 100 Ohm max.                    |
| 3. Temperature Characteristics of Oscillation Frequency | $\pm$ 0.4% 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

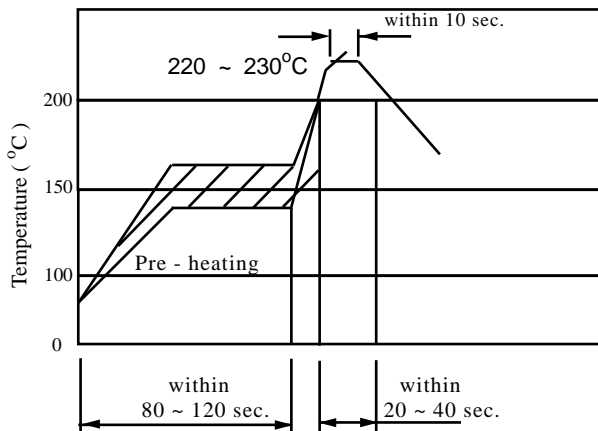
The reference temperature shall be 25°C  $\pm$  2°C. The measurement shall be performed at the temperature range of 5°C ~ 35°C unless otherwise the result is doubtful.

### MEASUREMENT CIRCUIT AND EQUIPMENT

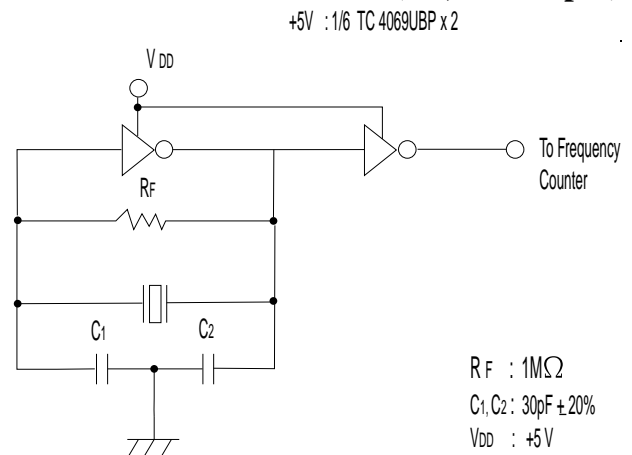
Oscillating frequency shall be measured by the standard test circuit.

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

#### Recommended Reflow Soldering Standard Conditions



#### Test Circuit ( C<sub>1</sub>, C<sub>2</sub> = 30pF )

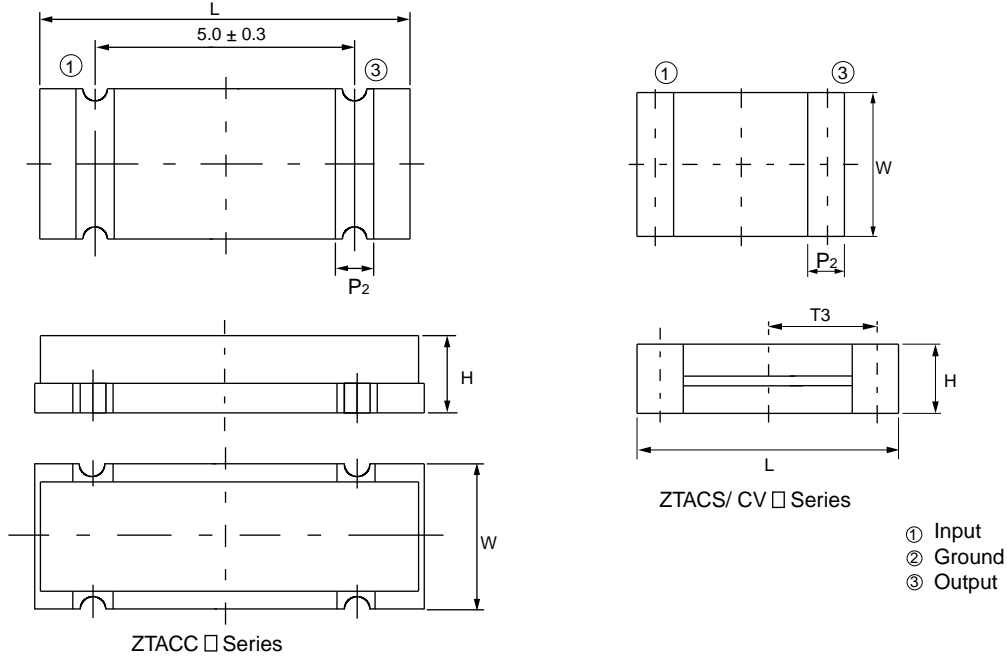


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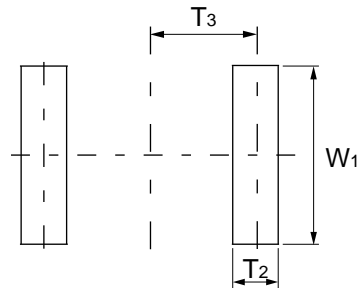
## CERAMIC RESONATOR SPECIFICATION

### MECHANICAL DIMENSIONS



Type Item	DIMENSION (mm)								
	L	W	H	P1	P2	T1	T2	T3	W1
ZTACC	$7.4 \pm 0.3$	$3.4 \pm 0.3$	$1.8 \pm 0.3$	-	$1.2 \pm 0.3$	$1.5 \pm 0.3$	$1.7 \pm 0.3$	$2.5 \pm 0.3$	$4.0 \pm 0.3$
ZTACS	$4.7 \pm 0.3$	$4.1 \pm 0.2$	$1.6 \pm 0.3$	-	$0.8 \pm 0.4$	$1.3 \pm 0.2$	$0.8 \pm 0.2$	$1.95 \pm 0.2$	$5.1 \pm 0.2$
ZTACV	$3.7 \pm 0.2$	$3.1 \pm 0.2$	$1.2 \pm 0.3$	-	$0.7 \pm 0.3$	$1.0 \pm 0.2$	$0.7 \pm 0.2$	$1.5 \pm 0.2$	$4.1 \pm 0.2$

### RECOMMENED LAND PATTERN



# MIEC

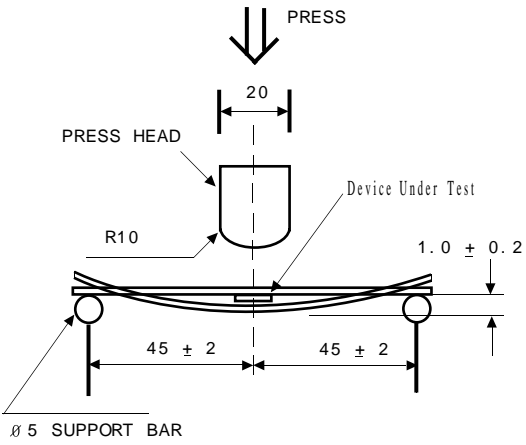
## CERAMIC RESONATOR SPECIFICATION

### 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 $96 \pm 4$ 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 $150 \pm 5^{\circ}\text{C}$		$60 \pm 10$ sec.
		Peak $240 \pm 5^{\circ}\text{C}$		$10 \pm 3$ sec.
5	High Temperature Exposure	Subject the resonator to $80 \pm 5^{\circ}\text{C}$ for $96 \pm 4$ 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 $96 \pm 4$ hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.		

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## CERAMIC RESONATOR SPECIFICATION

7	Temperature Cycling	Subject the resonator to $-20^{\circ}\text{C}$ for 30 min. followed by a high temperature of $85^{\circ}\text{C}$ 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	$\Delta F / F_{osc} \leq 0.5\%$ max.
Resonant Impedance	Within $100 \Omega$

### REVIEW OF SPECIFICATIONS

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



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