

MOBICON

Electronic Components

PRODUCT SPECIFICATION

MEC SMD RESONATOR

FREQUENCY COMPONENTS

ZTACV Series SMD RESONATOR SPECIFICATION

| MOBICON HOLDINGS LTD. | | |
|------------------------------|--------------|--------------------|
| Prepared By | Sign. | Approved By |
| Leo Wong | | C.H. Wong |

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MIEC

CERAMIC RESONATOR SPECIFICATION

PART NO. :

ZTACV28.63MX

ELECTRICAL CHARACTERISTICS

- | | |
|---|---------------------------------|
| 1. Oscillation Frequency (Fosc) | 28.63 MHz \pm 0.5% |
| 2. Resonant Impedance (Ro) | 40 Ohm max. |
| 3. Temperature Characteristics of Oscillation Frequency | \pm 0.5% 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

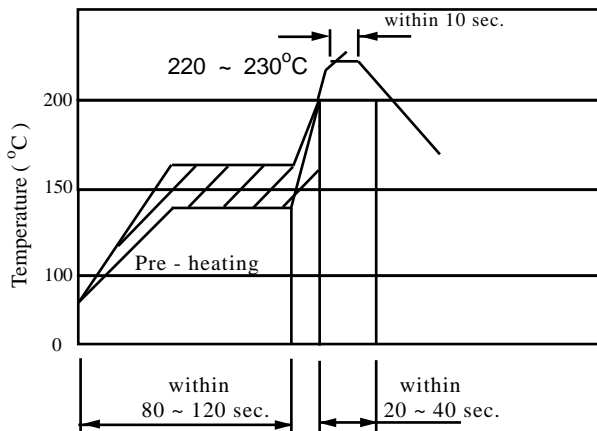
The reference temperature shall be 25°C \pm 2°C. The measurement shall be performed at the temperature range of 5°C ~ 35°C unless otherwise the result is doubtful.

MEASUREMENT CIRCUIT AND EQUIPMENT

Oscillating frequency shall be measured by the standard test circuit.

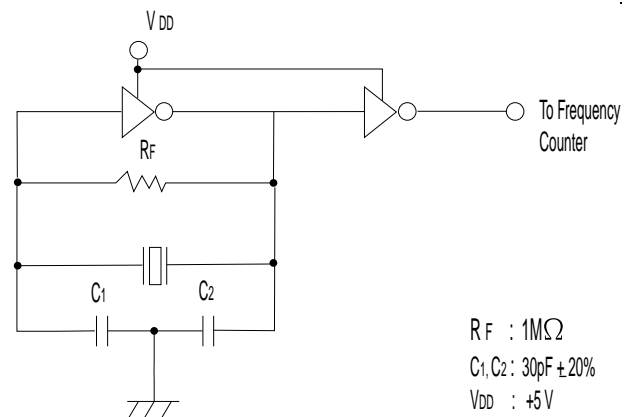
Resonant impedance shall be measured by *HP8751A Network Analyzer*.

Recommended Reflow Soldering Standard Conditions



Test Circuit (C₁, C₂ = 30pF)

+5V : 1/6 TC74HCU04 (13.0 ~ 50.0 MHz)



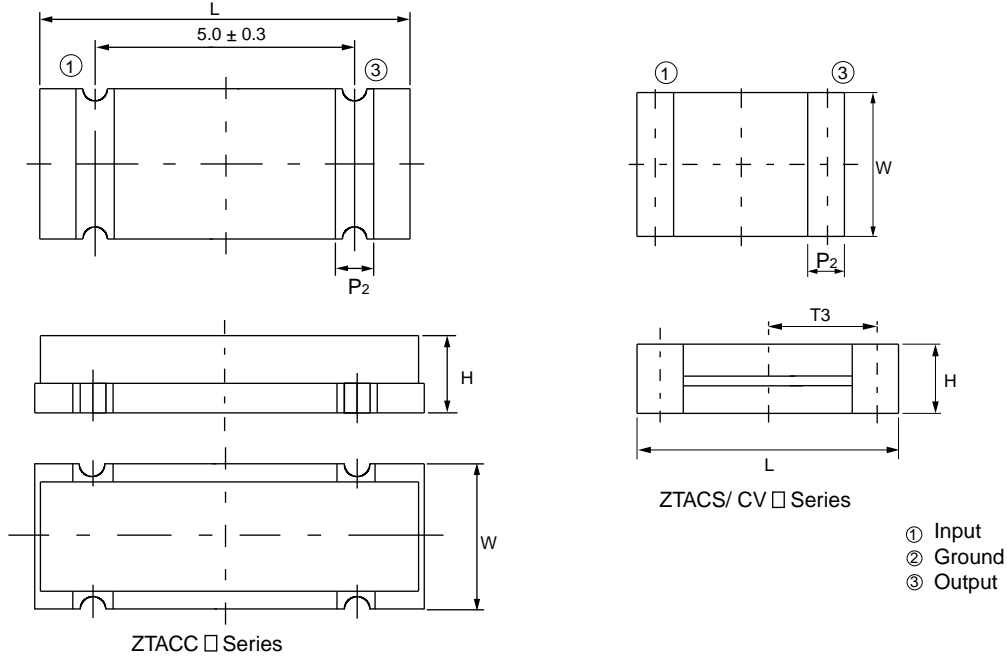
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MECC

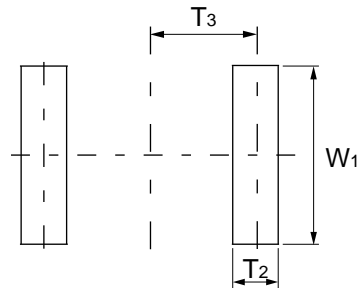
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MECHANICAL DIMENSIONS



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

RECOMMENED LAND PATTERN



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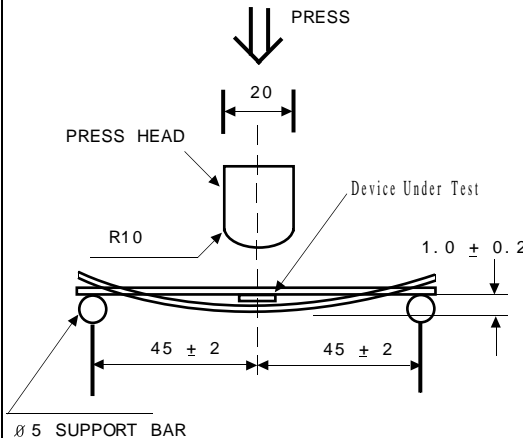
CERAMIC RESONATOR SPECIFICATION

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 ± 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>on page 2.</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 on page 2. |
| 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 | 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)  | Mechanical damage such as breaks shall not occur. |

REVIEW OF SPECIFICATIONS

- 1) When something get doubtful with this specifications, we shall jointly work to get an agreement.
- 2) This specification limits the quality of the components as a single unit. Please insure the component is thoroughly evaluated in your application circuit.
- 3) Please do not use this component in any application that deviates from its intended use as noted within the specification. It may cause any mishaps.
- 4) Please return one of this specification after your signature of acceptance. In case of no return within 3 months from submission date. This specification should be treated as accepted.



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