CERAMIC RESONATOR

ZTT Series with Built-IN Capacitor

Approved by:
Checked by:
Issued by:

SPECIFICATION

P/N: ZTTCP10.00MGMBL

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CERAMIC RESONATOR

ZTT Series with Built-IN Capacitor

1. SCOPE

This specification shall cover the characteristics of the surface mount ceramic resonator with 10.00MHz.

2. CUSTOMER NO:

3. FACTORY NO: ZTTCP10.00MGMBL

4. ELECTRICAL CHARACTERISTICS

No	Item	Requirements
4.1	Oscillation Frequency (Fosc)	10.00MHz±0.3%
4.2	Resonant Impedance (Ro)	30Ω
4.3	Temperature Coefficient of Oscillation Frequency	±0.3% max
4.4	Withstanding Voltage	50 VDC 1 minute
4.5	Rating Voltage (1) D.C. Voltage (2) A.C. Voltage	 6 V.D.C. 15 Vpp.
4.6	Insulation Resistance	100M Ω min.(at 10VDC)
4.7	Operating Temperature	-40℃ to +85℃
4.8	Storage Temperature	-55℃ to +105℃
4.9	Aging Rate (Fosc)	±0.3% max (10 year)
4.10	C1C2	30pf±20%

5. MEASUREMENT

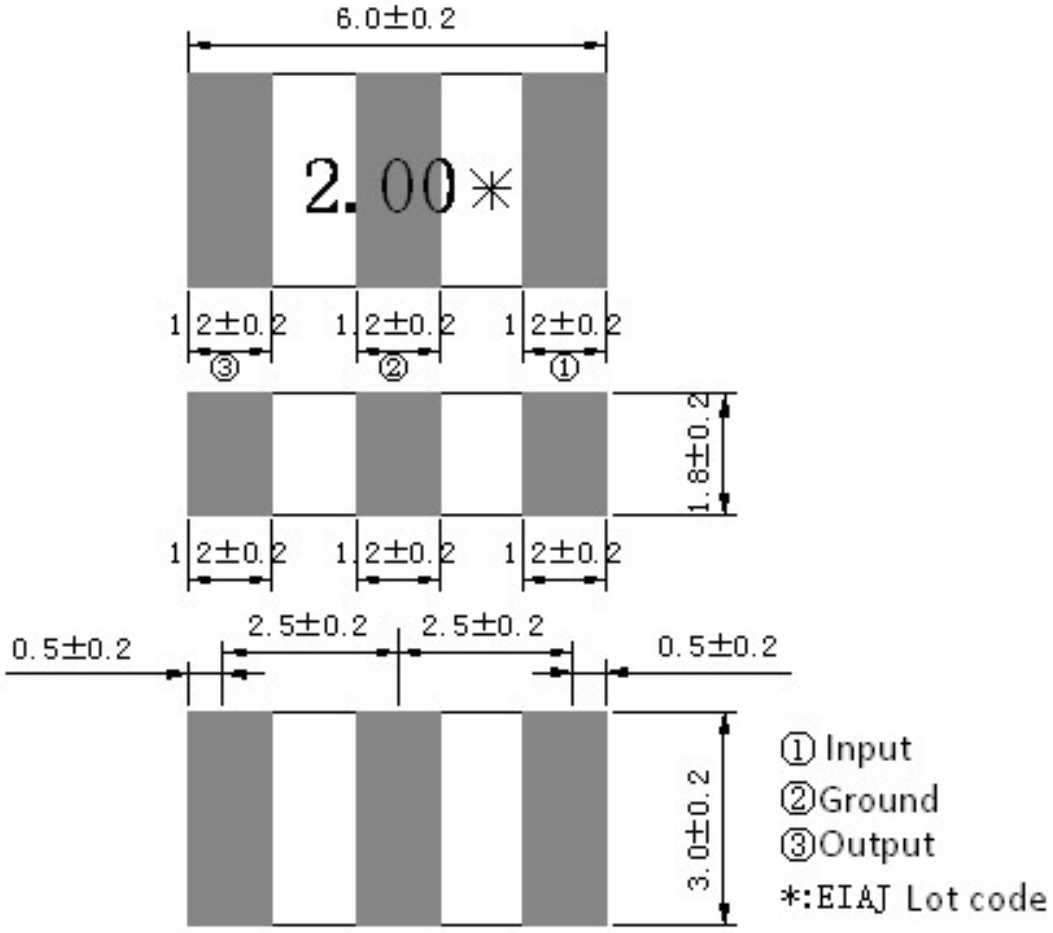
5.1 Measurement Condition

The reference temperature shall be 25℃±2℃.The measurement shall be performed at the temperature range of 5℃ to 35℃ unless otherwise the result is doubtful.

5.2 Measurement Circuit and Equipment

Oscillating frequency shall be measured by the standard test Circuit.
Resonant impedance shall be measured by HP8751A Network Analyzer.

6.0 DIMENSIOIN (MM)



7.PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No	Item	Condition of Test	Performance Requirements
7.1	Humidity	Keep the resonator at 40±2℃ and 90-95% RH for 96±4 hours. Then release the resonator into the room condition for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.2	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.	It shall fulfill the specifications in Table 1.
7.3	Mechanical Shock	Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.	It shall fulfill the specifications in Table 1.
7.4	Soldering Test	Passed through the re-flow 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±5℃: 60±10 sec Peak 240±5℃: 10±3 sec	It shall fulfill the specifications in Table 1.
7.5	Solder ability	Dipped in 230±5℃ solder bath for 3±0.5 sec seconds with rosin flux (25wt% ethanol solution.	The terminals shall be at least 95% covered by solder.
7.6	High Temperature Exposure	Subject the resonator to 80±5℃ for 96±4 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.7	Low Temperature Exposure	Subject the resonator to -20±5℃ for 96±4 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.

7. PHYSICAL AND ENVIRONMENAL CHARACTERISICS

(Continued from the preceding page)

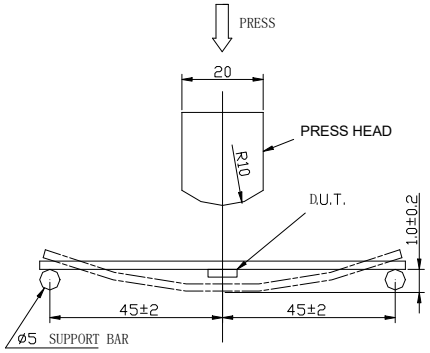
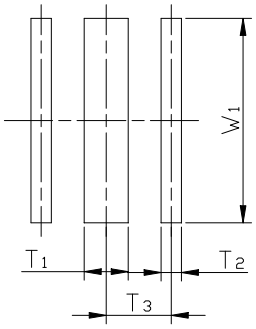
No	Item	Condition of Test	Performance Requirements
7.8	Temperatur e Cycling	Subject the resonator to -40℃ for 30 min. followed by a high temperature of 85℃ for 30 min. cycling shall be repeated 5 times with a transfer time of 15 sec. At the room temperature for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.9	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.

TABLE 1

Item	Specification
Oscillation Frequency Change	△F/Fosc = 0.3% max
Resonant Impedance	Within ±10Ω

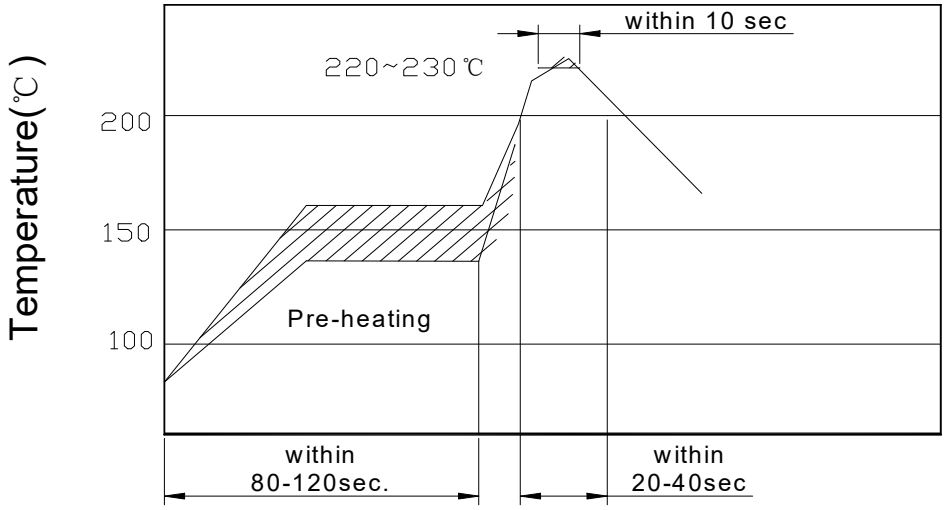
8.RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

8.1 RECOMMENDED LAND PATTERN



P/N	DIMENSIONS (mm)			
	T_1	T_2	T_3	W_1
ZTTCP (MG)	1.5±0.3	1.7±0.3	2.5±0.3	4.0±0.3
ZTTCS (MT/MX)	1.3±0.2	0.8±0.2	1.95±0.2	5.1±0.2
ZTTCV (MT/MX)	1.0±0.2	0.7±0.2	1.5±0.2	4.1±0.2

8.2 RECOMMENDED REFLOW SOLDERING STANDARD CONDITIONS



9.REVIEW OF SPECIFICATIONS

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