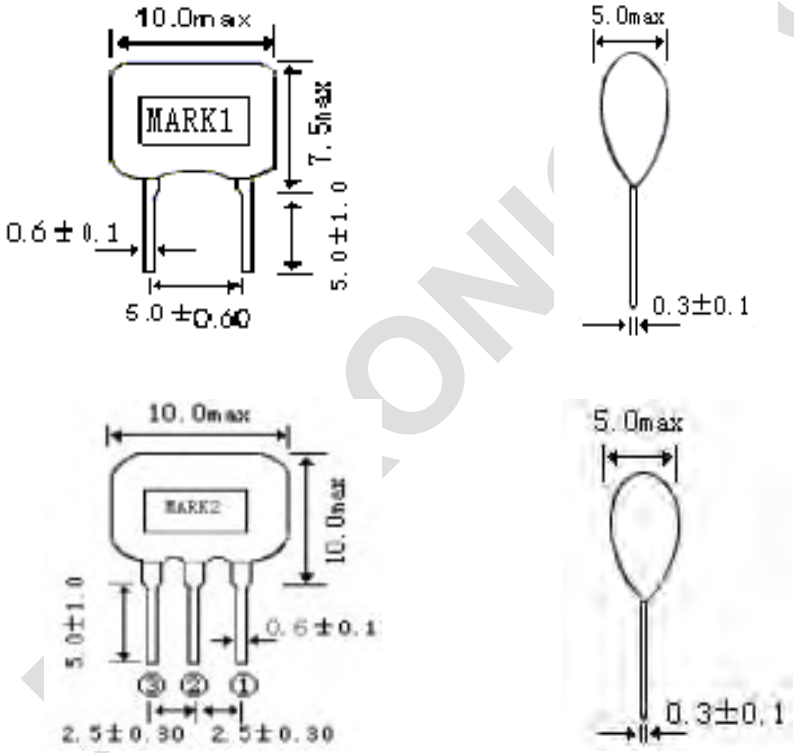
1. **SCOPE**

   **This specification is applied to the ceramics resonator used for the clock Oscillation of Microprocessor.**

2. **MODEL NAME**

| Part Name | Customer′ s Part number | Drawing No. |
|---|---|---|
| **ZTA10.0MT** | | |
| **ZTT10.0MT** | | |

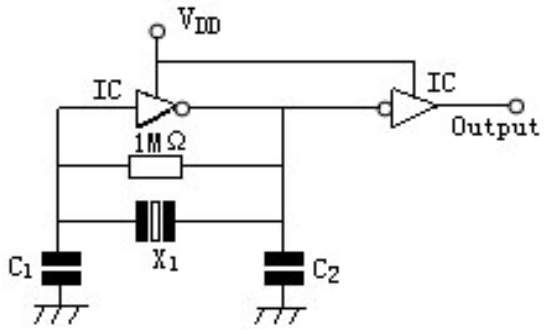
3. **DIMENSIONS**

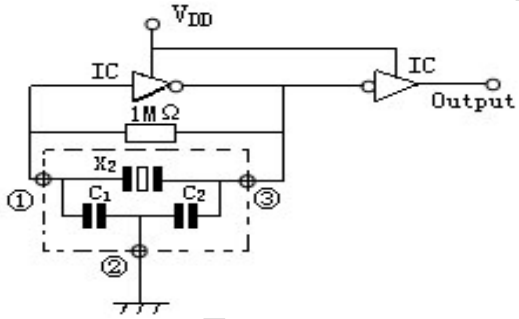



MARK 1：ZTA10.0MT　　MARK 2：ZTT10.0MT

## 4. TEST CIRCUIT

**Parts shall be measured under a condition (Temp.:3～35℃.Hum.:45～85％)unless any necessity to measure under a standard condition (Temp.:20±2℃.Humi.:65±5％） is occurred.**




**X1：ZTA10.0MT　X2：ZTT10.0MT**
**C1=C2=30PF**
**IC: TC4069UBP**
**VDD=+5V**

## 5. ELECTRICAL CHARACTERISTICS

| | Item | Requirements |
|---|---|---|
| 5-1 | Frequency Accuracy | 10.0M±0.5% |
| 5-2 | Resonant Impedance | 30Ω max |
| 5-3 | Operating Temperature Range<br>Storage Temperature Range | -20 to +80<br>-30 to +85 |
| 5-4 | Stability Temperature | ±0.3% max.（－20－+80℃） |
| 5-5 | Withstanding Voltage | DC 100V.（less than 5 sec） |
| 5-6 | Insulation Resistance | 100 MΩ min （DC 10V） |
| 5-7 | Aging for 10 Years | ±0.5±％ max |

## 6.PHYSICAL AND ENVIRONMENTAL CHARCTERISTICS

| | Test Item | Condition of Test | Requirements |
|---|---|---|---|
| 6-1 | Lead strength<br><br>Lead Bending | Force of 1 Kg is applied for 10 second to each lead in axial direction.<br>Firmed the terminal up to 2mm. Resonator lead shall be subjected to withstand against 90° bending its stem. This operation shall be done toward both directions. | No mechanical damage and the measured values shall meet Item5. |
| 6-2 | Solder ability | The terminals of the Resonator shall be immersion in a soldering bath（230±5℃）for 3±0.5sec.（refer to Mil-STD-202E-208C） | The solder shall for coat at least 95% of the terminal. |
| 6-3 | Vibration | Resonator shall be measured after being<br>Applied vibration as below.<br>Vibration Freq: 10-55Hz<br>Amplitude: 1.5mm<br>Directions: 3axial directions<br>Time: 2bour/each direction | The measured values Shall meet table l |
| 6-4 | Random Drop | Resonator shall be measured after 3 times<br>Random dropping from the height of 1m.<br>Concrete floor | |
| 6-5 | Resistance to Soldering Heat | Dipped in （350±10℃）measured solder to a point 1.5mm from Resonator body for 3±0.5 sec or dipped in（260±5℃）melted solder for 10±1 sec. Resonator shall be measured after being placed in natural condition for 1 hour. | |

## 6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Test Item | Condition of Test | Requirements |
|---|---|---|---|
| 6-6 | Humidity | After being placed in a chamber（Humi: 90-95%RH Temp:40±2℃） for 96 hours Resonator shall be measured after placed in natural condition for 1 hour. | The measured values Shall meet table l |
| 6-7 | Life Test (High temperature) | After being placed in a chamber 85±2℃ for 96 hours, Resonator shall be measured after being placed in natural condition for 1 hour. | |
| 6-8 | Life Test（Low temperature） | Stored in a chamber（Temp:-20±2℃）for 1000 hours, Resonator shall be measured after being placed in natural condition for 1 hour. | |
| 6-9 | Thermal shock | After temperature cycling of -20℃（30min）to +80℃（30min）was performed 5 times the Resonator shall be measured after being placed in natural condition for 1 hour. | |

Table 1

| Item | Limit Value |
|---|---|
| Frequency shift | F/FO≤±0.3% |
| Resonant Impedance | Zr≤5Ω |

Note: The limits in the above table are referenced to the initial Measurements.

**7. NOTICE**

**7.1 Ceramic Resonator should be stored in storeroom. And the surrounding atmosphere is acid less, alkali-free and no other harmful impurity.**

**7.2 The package for ceramic damage.**

**7.3 This specification limits the quality of the component as a single unit. Please make sure that the component is evaluated and confirmed the drawing When it is mounted to your product.**