

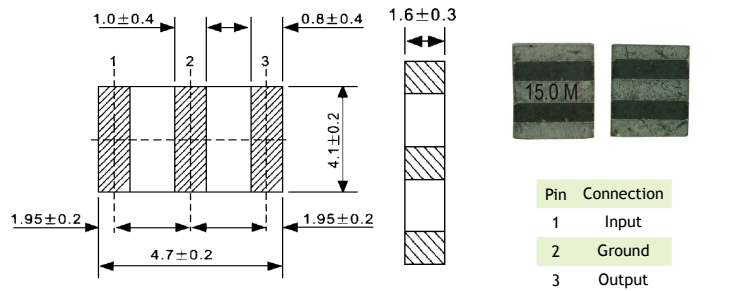
## DESCRIPTION

The ceramic resonator SMD with wide frequency range, optional internal load capacitance and compact design is designed for use in computers and peripherals and consumer products.

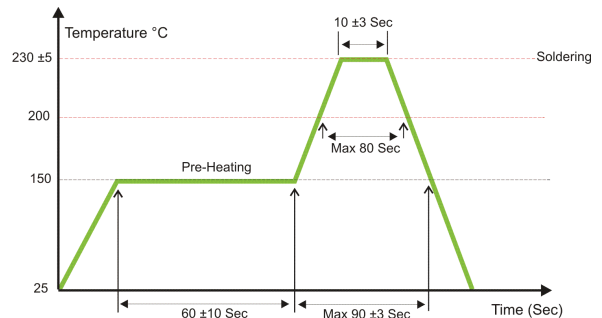
## ELECTRICAL SPECIFICATION

Oscillate Frequency	13.01 to 50.00MHz
Frequency Tolerance (at 25°C)	±0.5% Maximum
Operating Temperature Range	-20°C to +80°C
Storage Temperature Range	-55°C to +85°C
Resonant Impedance Frequency	40Ω Maximum
Insulate Resistance	100MΩ minimum
Built - in Capacitance (pF)	Refer to test circuit
Withstanding Voltage D.C	100V (max. 5 seconds)
Temperature Stability	±0.3% Maximum
Voltage	D.C. Voltage 6V Maximum
	Input Voltage 15Vpp Maximum
Aging (at 25°C)	±0.3%

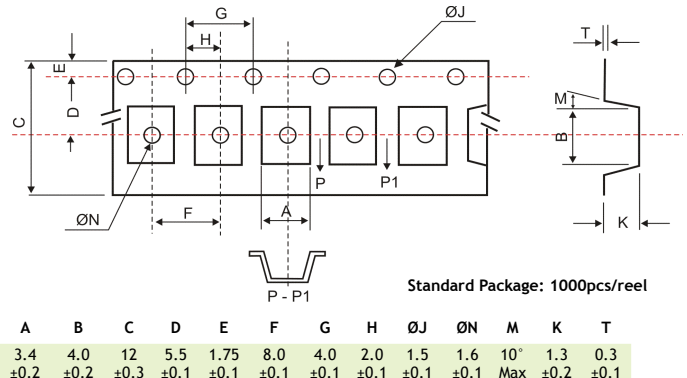
## MECHANICAL DIMENSIONS (all in mm)



## SOLDERING



## TAPE SPECIFICATIONS (all in mm) - Carrier Tape Dimensions



Standard Package: 1000pcs/reel

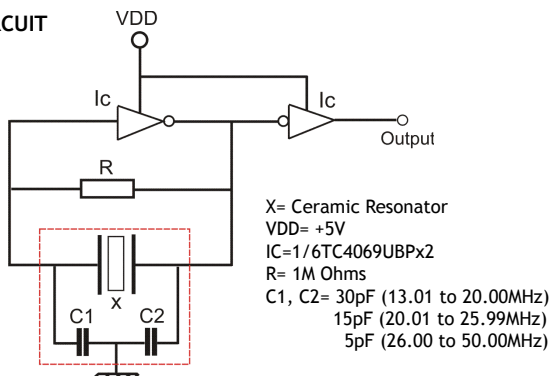
## PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

- | Conditions   | Results                         |
|--|---------------------------------|
| <b>1. Humidity</b><br>Keep the resonator at 40±2°C and 90 ~ 95% RH for 96±4 hour. Then release the resonator into the room conditions for 1 hour prior to the measurement. It shall fulfill the specifications in Table 1.   |                                 |
| <b>2. Solder Test</b><br>Passed through the re-flow oven under the following condition and left at room temperature for 1 hour before measurement. It shall fulfill the specifications in Table 1.   |                                 |
| <ul style="list-style-type: none"> <li>Temperature at surface of the substrate</li> <li>Preheat 150±5°C</li> <li>Peak 240±5°C</li> </ul>   | Time<br>60±10 sec.<br>10±3 sec. |
| <b>3. Temperature cycling</b><br>Subject the resonator to -20°C for 30 minutes followed by a high temperature of +85°C for 30 minutes. Cycling shall be repeated 5 times with a transfer time of 15 second at the room conditions for 1 hour prior to the measurement. It shall fulfill the specifications in Table 1. |                                 |
| <b>4. Mechanical Shock</b><br>Drop the resonator randomly onto a concrete floor from the height of 100cm 3 times. The device shall fulfill the initial electrical characteristics. It shall fulfill the specifications in Table 1.   |                                 |
| <b>5. Vibration</b><br>Subject the resonator to vibration for 2 hour 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.  |                                 |

Table 1

Item	Specification
Oscillation Frequency Change	$\Delta F/F_0 \leq 0.3\%$ max
Resonant Impedance	$\Delta R_0 \leq 10\Omega$

## TEST CIRCUIT



## PART NUMBERING SYSTEM (Example)

ZTTCSMX-15.000-0.5-0.3-S-XX

