

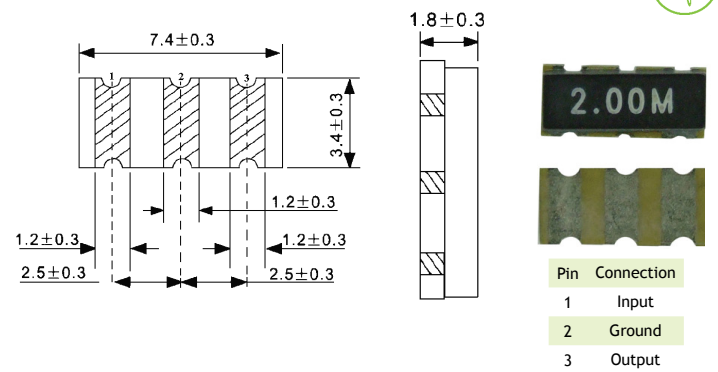
## DESCRIPTION

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.

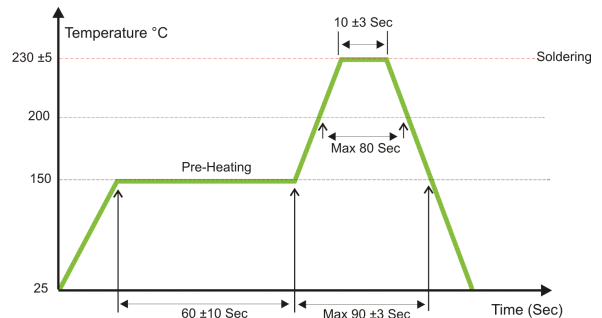
## ELECTRICAL SPECIFICATION

Oscillate Frequency	1.84 to 8.00MHz
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	100Ω Maximum
Insulate Resistance	100MΩ minimum
Built - in Capacitance (pF)	30pF
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%

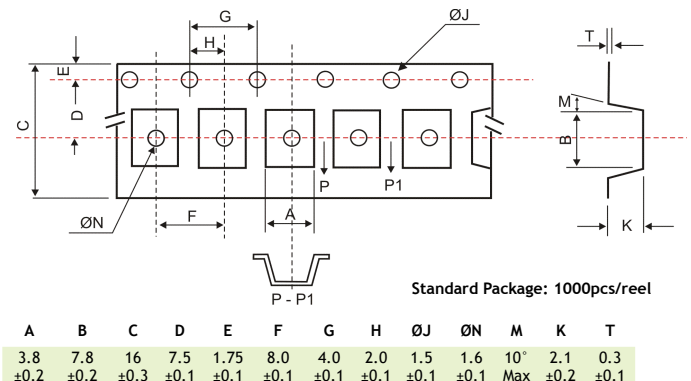
## MECHANICAL DIMENSIONS (all in mm)



## SOLDERING



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



## PART NUMBERING SYSTEM (Example)

ZTTCCMG-4.000-0.5-0.3-S-XX

Hold Type

ZTTCC MG / ZTTCS MT / ZTTCS MX /  
ZTTCV MT / ZTTCV MX

Nominal Frequency (MHz)

Enter the nominal frequency (3 digits after dot) or up to last significant digit different than zero)

Frequency Tolerance (%)

0.5= 0.5%

Frequency Stability (%)

0.3= 0.3%

Operating Temperature Range (°C)\*

S= Standard

\* Operating Temperature Range: -20 to 80°C (Standard)

\* Specific Operating Temperature Range under request.

Options

S= Standard

X= Additional

Specifications

T= Tape and Reel

## PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Conditions	Results
<b>1. Humidity</b>	
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>	
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.	
• Temperature at surface of the substrate	Time
• Preheat 150±5°C	60±10 sec.
• Peak 240±5°C	10±3 sec.
<b>3. Temperature cycling</b>	
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>	
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>	
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

