Ceramic Resonator

SMD type, ZTAC□□/ZTTCC□□ series

ZTAC□□/ZTTCC□□ Series

ROHS Compatible

& Feature:

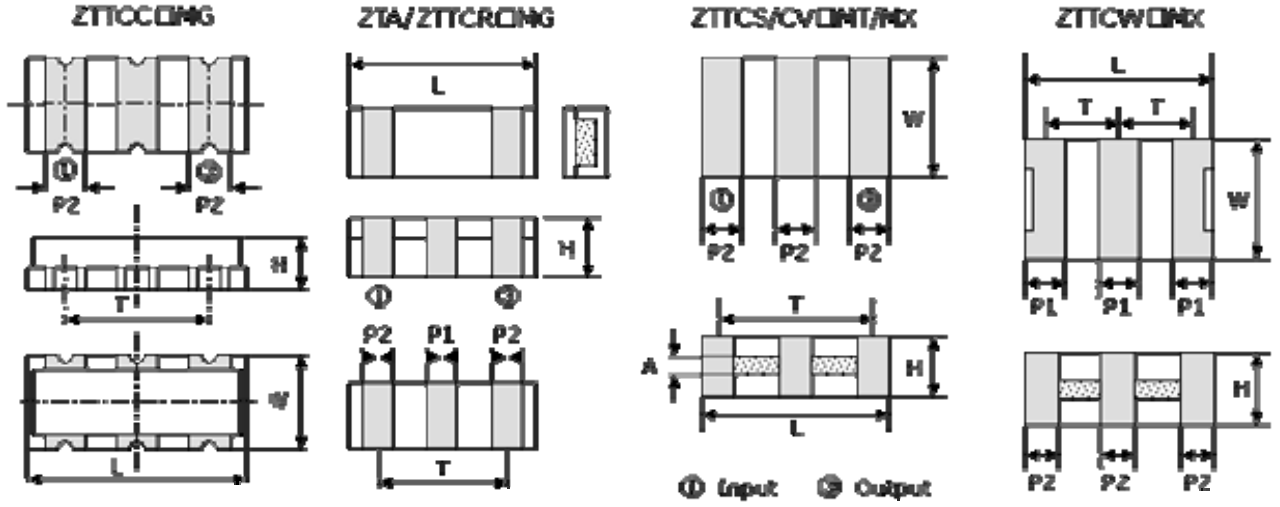
ZTTC series features a built-in load capacitance. This feature eliminates any need for external loading capacitors and reduces component count, increases reliability and reduces size.

ZTAC series functions same as the ZTA series with two terminals without capacitor.These unit are offered in the frequency range from 1.79 MHz to 50.00 MHz with an initial frequency tolerance of ±0.5%.

& Electrical Specifications

Part Number	Frequency Range (MHz)	Frequency Accuracy (25℃)(%)	Stability in Temperature (-20~+80℃)(%)	Aging For Ten Years(%)
ZTACC*MG ZTTCC*MG	1.79 ~ 8.00	± 0.5	± 0.3	± 0.3
ZTACR*MG ZTTCR*MG	4.00 ~ 8.00	± 0.5	± 0.3	± 0.3
ZTA/ZTTCS*MT ZTA/ZTTCV*MT	6.00 ~ 13.00 8.00 ~ 13.00	± 0.5	± 0.4	± 0.3
ZTACS*MX ZTTCS*MX	13.01 ~ 50.00	± 0.5	± 0.3	± 0.3
ZTACV*MX ZTTCV*MX	16.00 ~ 50.00	± 0.5	± 0.3	± 0.3
ZTACW*MX ZTTCW*MX	20.00 ~ 45.00	± 0.5	± 0.3	± 0.3

& Dimension:

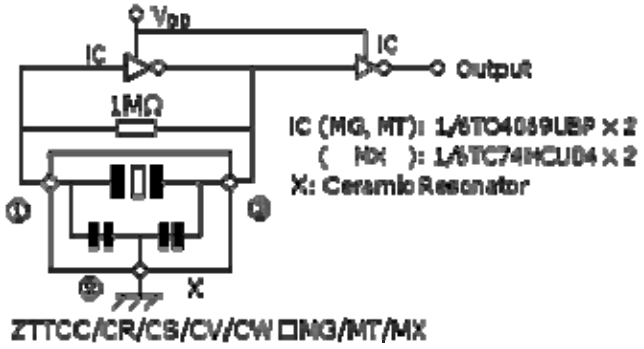


P/N	Dimension (Unit: mm)					
	L	W	H	P1	P2	T
ZTACC*MG ZTTCC*MG	7.4±0.2	3.4±0.2	1.8±0.2	1.2±0.2	1.2±0.2	5.0±0.3 2.5±0.3
ZTACR*MG ZTTCR*MG	4.5±0.2	2.0±0.2	1.2max	0.8±0.2	0.8±0.2	3.0±0.2 1.5±0.2
ZTACS*MT/MX ZTTCS*MT/MX	4.7±0.2	4.1±0.2	(1.2+A)±0.2	1.0±0.2	0.8±0.2	3.9±0.2 1.95±0.2
ZTACV*MT/MX ZTTCV*MT/MX	3.7±0.2	3.1±0.2	(1.0+A)±0.2	0.9±0.2	0.7±0.2	3.0±0.2 1.5±0.2
ZTACW*MX ZTTCW*MX	2.5±0.2	2.0±0.2	1.5max	0.5±0.2	0.4±0.2	2.0±0.2 1.0±0.2

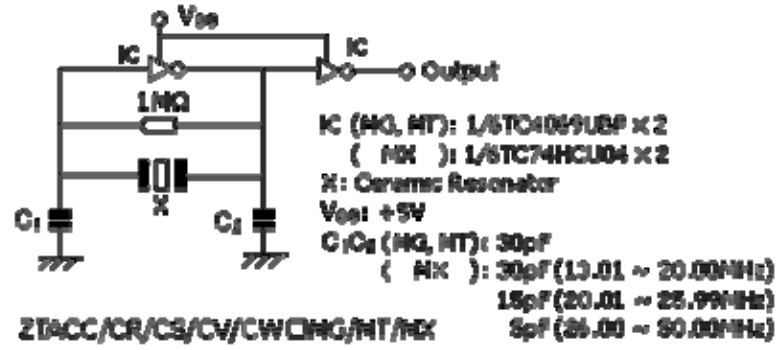
A be stands for thickness of the ceramic element, which varies with the frequency.
The range of the thickness is 0.1 to 0.7mm.
No middle terminal for ZTA series.

& Test circuit For MOS IC

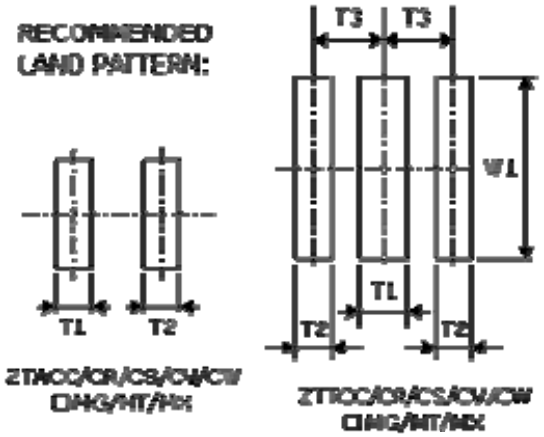
ZTTC Series



ZTAC Series

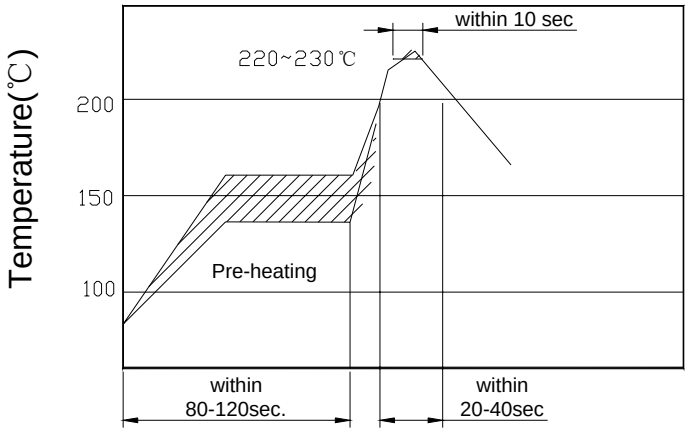


& Recommended Land Pattern:



Part Number	Dimensions (Unit: mm)			
	T1	T2	T3	W1
ZTACC*MG ZTTCC*MG	1.5±0.3	1.7±0.3	5.0±0.3 2.5±0.3	4.0±0.3
ZTACR*MG ZTTCR*MG	0.8±0.2	0.8±0.2	3.0±0.2 1.5±0.2	2.6±0.2
ZTACS*MT/MX ZTTCS*MT/MX	1.3±0.2	0.8±0.2	3.9±0.2 1.95±0.2	5.0±0.2
ZTACV*MT/MX ZTTCV*MT/MX	1.0±0.2	0.7±0.2	3.0±0.2 1.5±0.2	4.1±0.2
ZTACW*MX ZTTCW*MX	0.5±0.2	0.5±0.2	2.0±0.2 1.0±0.2	2.6±0.2

& Be Recommended Reflow Soldering Standard Conditions:



& 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 Table1.
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 specification in Table 1.
7.3	Mechanical shock	Drop the resonator randomly onto a concrete floor from the height of 100 cm 3 times.	It shall fulfill the specification in Table 1.
7.4	Resistance to solder heat	Dip the resonator terminals no closer than 2 mm into the solder bath 260±5℃ for 10±1 sec.	It shall fulfill the specification in Table 1.
7.5	Solderability	Dip the resonator terminals no closer than 2 mm into the solder bath 235±5℃ for 2±0.5 sec.	More than 95% of the terminal surface of the resonator shall be covered with fresh solder.
7.6	High Temperature Exposure	Subject the resonator to 80±5℃ for 94±4 hours.Then release the tesonator into the room condition for 1 hour prior to the measurement.	It shall fulfill the specification in Table 1.
7.7	Low Temperature	Subject the resonator to -20±5℃ for 94±4 hours.Then release the tesonator into the room condition for 1 hour prior to the measurement.	It shall fulfill the specification in Table 1.
7.8	Temperature cycling	Subject the resonator to -20℃ for 30 min.followed by a hith temperature of 80℃ for 30 min.Cycling shall be repeated 5 times with a transfer time of 15 sec.at the room condition.Then release the resonator into the room temperature for 1 hour prior to the measurement.	It shall fulfill the specification in Table 1.
7.9	Lead Fatigue (1)Pulling Test	Weight along with the direction of terminals without any shock 0.5kg for 10±1 sec.	The resonator shall show no evidence of damage and shall fulfill all the initial electric characteristics.
	(2)Bending Test	Lead shall be subject to withstand against 90 degree bending at its stem.This operation shall be done towards both direction.	

TABLE1

ITEM	SPECIFICATIONS
Oscillation Frequency Change	△F/Fosc≤0.3% max
Resonant Impedance	△Ro≤Ω