



2 Pad and 3 Pad Ceramic Package, 3.4 mm x 7.4 mm and 4.1 mm x 4.7 mm



ZTTS and ZTAS Series

Product Features:

Low Cost
Compatible with Leadfree Processing

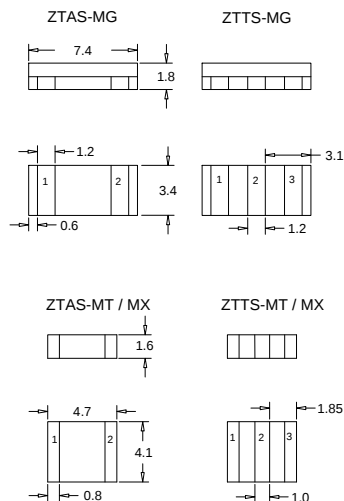
Applications:

Storage Media
Home Appliance
Microprocessors
Office Automation

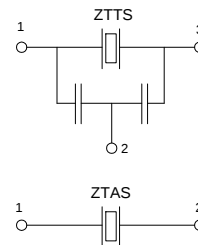
Frequency	1.8 MHz to 50 MHz
ESR (Equivalent Series Resistance)	See Table Below
Frequency Tolerance @ 25° C	±0.5%
Frequency Stability over Temperature	±0.3%
Aging	±0.3% Max. for 10 Years
Temperature	
Operating	-40° C to +85° C
Storage	-40° C to +85° C Standard

Part	Frequency (MHz)	ESR (Ω Max.)	C1 (pF)	C2 (pF)
ZTTS-MG	1.8 to 8	100	30	30
ZTTS-MT	6 to 13	30	30	30
ZTTS-MX	13 to 19.9	40	30	30
ZTTS-MX	20 to 25.9	40	15	15
ZTTS-MX	26 to 50	40	5	5
ZTAS-MG	1.8 to 8	100	30*	30*
ZTAS-MT	6 to 13	30	30*	30*
ZTAS-MX	13 to 19.9	40	30*	30*
ZTAS-MX	20 to 25.9	40	15*	15*
ZTAS-MX	26 to 50	40	5*	5*

* Recommended external capacitance, not internal to the device.



Connection Diagrams



Dimension Units: mm

The terminations of the ZTAS and ZTTS series ceramic resonator are Pb free. Pb may be contained in the ceramic resonator element of this device and is exempted via item 7 of the RoHS annex. This ceramic resonator series is considered RoHS compliant.

Part Number Guide	Sample Part Number:	ZTTS - MX - 20.000
Part Series	Package Code	Frequency
ZTTS - (internal capacitors)	MG	- 20.000 MHz
ZTAS - (must supply external capacitance for proper circuit operation)	MT	
	MX	

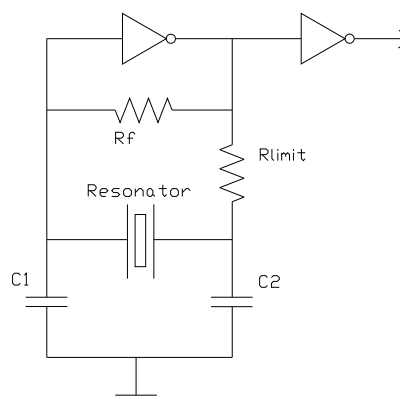
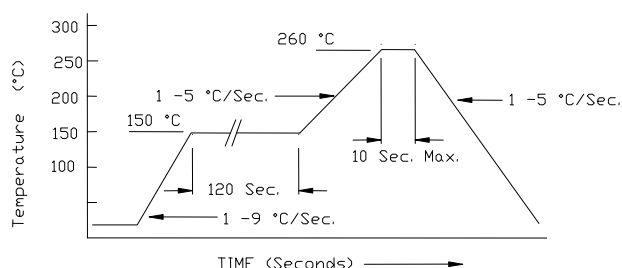


2 Pad and 3 Pad Ceramic Package, 3.4 mm x 7.4 mm and 4.1 mm x 4.7 mm

ZTTS and ZTAS Series

Pb Free Solder Reflow Profile:

Typical Circuit:



*Units are backward compatible with 240C reflow processes

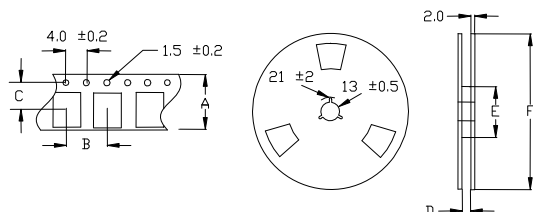
C1 and C2 are external for ZTAS

Package Information:

MSL = 1

Termination = e1 (Sn / Cu / Ag).

Tape and Reel Information:



Quantity per Reel	1000
A	12 +/- .3
B	8 +/- .2
C	5.5 +/- .2
D	13 +/-1 or 12 +/-3
E	60 / 80
F	180 / 250

Environmental Specifications

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10 ⁻⁸ atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

Marking

Line 1: Frequency