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

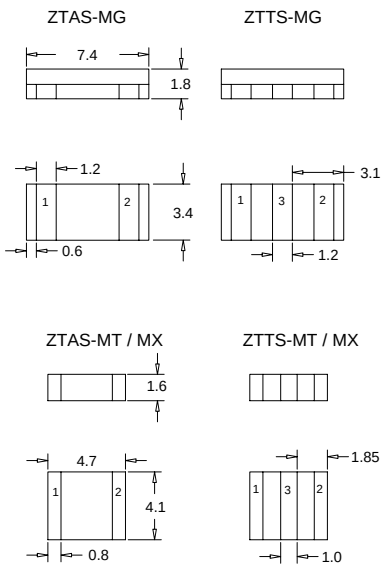
ZTTS and ZTAS Series

Product Features:

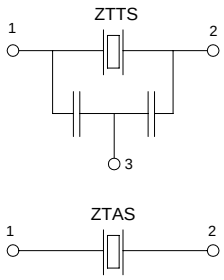
Low Cost
Compatible with Leadfree Processing

Applications:

Storage Media
Home Appliance
Microprocessors
Office Automation



Connection Diagrams



Dimension Units: mm

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*

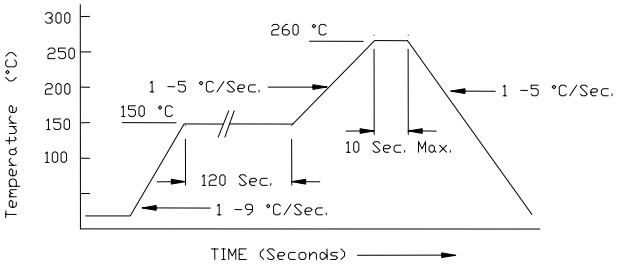
* Recommended external capacitance, not internal to the device.

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.

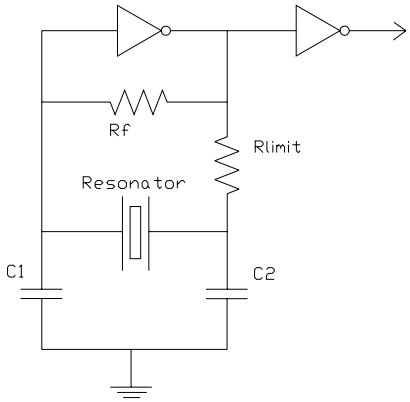
Part Number Guide **Sample Part Number:** **ZTTS - MX - 20.000**

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

Pb Free Solder Reflow Profile:



Typical Circuit:



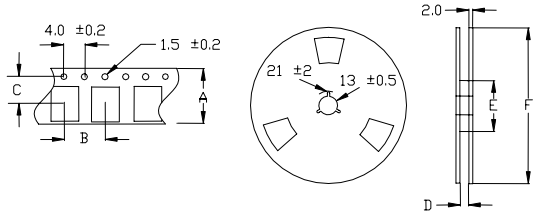
*Units are backward compatible with 240C reflow processes

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