2 Lead Plastic Package

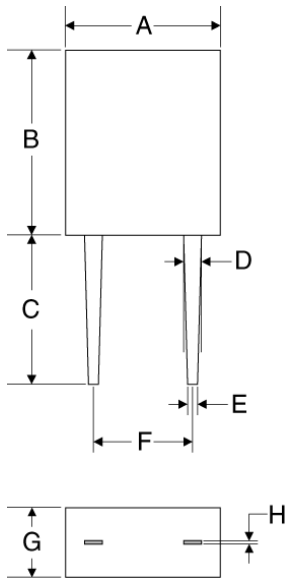
ZTB Series

Product Features

Low Cost
Compatible with Lead free Processing
RoHS Compliant

Applications

Storage Media
Home Appliance
Microprocessors
Office Automation



See Table "A" below for dimensions

Frequency	190kHz to 1250kHz
Resonant Impedance	See Table Below "A"
Frequency Tolerance (at 25°C)	See Table Below "A"
Aging	±0.3% Maximum for 10 Years
Operating Temperature Range	-20°C to +80°C
Storage Temperature Range	-30°C to +85°C

Table A

Part Code	Frequency (kHz)	Tolerance	Impedance (Ω MAX)	C1* (pF)	C2* (pF)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
ZTB-A	190 to 249	±1kHz	20	330	470	13.5 ±0.3	14.7 ±0.3	8.0 ±0.5	0.9 ±0.1	0.7 ±0.1	10.0 ±0.2	3.8 ±0.3	0.15 ±0.03
ZTB-B	250 to 374	±1kHz	20	220	470	11.0 ±0.3	12.2 ±0.3	7.0 ±0.5	0.9 ±0.1	0.7 ±0.1	10.0 ±0.2	3.8 ±0.3	0.15 ±0.03
ZTB-C	375 to 429	±2kHz	20	120	470	7.0 ±0.3	9.0 ±0.3	6.0 ±0.5	0.9 ±0.1	0.7 ±0.1	5.0 ±0.2	3.0 ±0.3	0.15 ±0.03
ZTB-D	430 to 519	±2kHz	20	100	100	7.0 ±0.3	9.0 ±0.3	6.0 ±0.5	0.9 ±0.1	0.7 ±0.1	5.0 ±0.2	3.0 ±0.3	0.15 ±0.03
ZTB-E	520 to 699	±2kHz	30	100	100	7.0 ±0.3	9.0 ±0.3	6.0 ±0.5	0.9 ±0.1	0.7 ±0.1	5.0 ±0.2	3.0 ±0.3	0.15 ±0.03
ZTB-F	700 to 999	±0.5%	70	100	100	5.1 ±0.3	6.3 ±0.3	6.0 ±0.5	0.9 ±0.1	0.7 ±0.1	2.5 ±0.2	2.3 ±0.3	0.15 ±0.03
ZTB-G	1000 to 1250	±0.5%	100	100	100	5.1 ±0.3	6.3 ±0.3	4.5 ±0.5	0.9 ±0.1	0.7 ±0.1	2.5 ±0.2	2.3 ±0.3	0.15 ±0.03

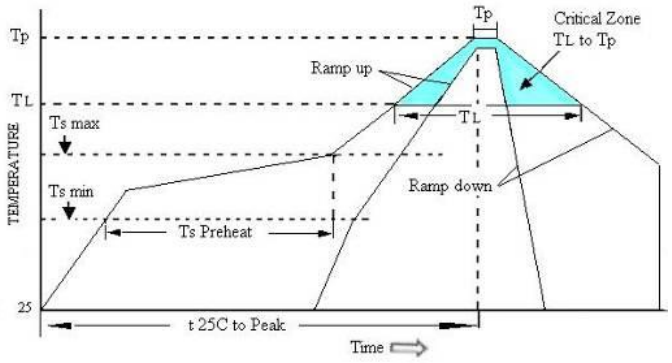
***** Recommended external C1 and C2 values.

The terminations of the ZTB 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:	***ZTB - G – 1000 kHz***	
Part Series	***Part Code***	***Frequency***
ZTB -	*A* *B* *C* *D* *E* *F* *G*	*- 1000 kHz*

Pb Free Solder Reflow Profile



Ts max to T_L (Ramp-up Rate)	3ºC / second max
Preheat Temperature min (Ts min) Temperature typ (Ts typ) Temperature max (Ts max) Time (Ts)	 150ºC 175ºC 200ºC 60 to180 seconds
Ramp-up Tate (T_L to Tp	3ºC / second max
Time Maintained Above Temperature (T_L) Time (T_L)	 217ºC 60 to 150 seconds
Peak Temperature (Tp)	260ºC max for 10 seconds
Time within 5ºC to Peak Temperature (Tp)	20 to 40 seconds
Ramp-down Rate	6ºC / second max
Tune 25ºC to Peak Temperature	8 minutes max

Units are backward compatible with 240°C reflow processes

Package Information

MSL = 1
Termination = e1 (Sn / Cu/ ag)

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	RoHS Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Solvent Resistance	MIL-STD-202, Method 215

Marking

Line 1: XXX (Manufacturing Designator)

Line 2: Frequency Designator