



# Resonators

## ZTB Ceramic Resonators / 陶瓷谐振器

ZTB (kHz) Resonator is designed to provide the design engineer with a rugged, relatively low frequency device in the frequency range of 190 kHz to 1,250 kHz. Initial frequency tolerance is  $\pm 0.5\%$  which compares very favorably to the nominal  $\pm 2\% \sim \pm 3\%$  requirements of one chip microprocessors. Token ZTB series utilizes the area vibration mode of the piezoelectric element.

### ► ZTB (kHz) Compatible to Murata CSB

**190 - 1250 kHz**

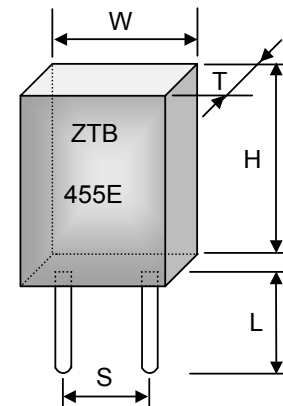
#### Ceramic ZTB (kHz) Resonators Technical Characteristics

Part Number	Frequency Accuracy (at 25°C)	Resonant Impedance ( $\Omega$ )	Stability in Temperature (-20°C~+80°C)(%)	Aging For 10 Years (%)	Load Capacitance (pF)	
					C1	C2
ZTB82 ~ ZTB189 *	$\pm 2\text{kHz}$	$\leq 20$	$\pm 0.3$	$\pm 0.3$	/	/
ZTB190D ~ ZTB249D	$\pm 1\text{kHz}$	$\leq 20$	$\pm 0.3$	$\pm 0.3$	330	470
ZTB250D ~ ZTB374D	$\pm 1\text{kHz}$	$\leq 20$	$\pm 0.3$	$\pm 0.3$	220	470
ZTB375P ~ ZTB429P	$\pm 2\text{kHz}$	$\leq 20$	$\pm 0.3$	$\pm 0.3$	120	470
ZTB430E ~ ZTB509E	$\pm 2\text{kHz}$	$\leq 20$	$\pm 0.3$	$\pm 0.3$	100	100
ZTB510P ~ ZTB699P	$\pm 2\text{kHz}$	$\leq 30$	$\pm 0.3$	$\pm 0.3$	100	100
ZTB700J ~ ZTB999J	$\pm 0.5\%$	$\leq 70$	$\pm 0.3$	$\pm 0.3$	100	100
ZTB1000J ~ ZTB1250J	$\pm 0.5\%$	$\leq 100$	$\pm 0.3$	$\pm 0.3$	100	100

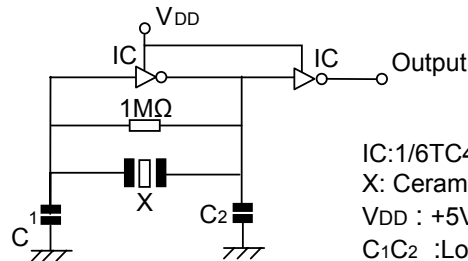
\* ZTB82 ~ ZTB189 series is new products of custom design.

### ► ZTB (kHz) Resonator Dimensions (Unit: mm Tolerance: $\pm 0.3\text{mm}$ )

Frequency Range (kHz)	W width	T thickness	H height	S lead space	L lead length
190~249	13.5	3.6	14.7	10.0	8.0
250~374	11.0	3.6	12.2	7.7	7.0
375~429	7.9	3.6	9.3	5.0	6.0
430~699	7.0	3.5	9.0	5.0	4.0(6.0)
700~1250	5.1	2.2	6.3	2.5	4.0



### ► ZTB (kHz) Resonator Test Circuit



IC: 1/6TC4069UBP×2  
 X: Ceramic Resonator  
 VDD : +5V  
 C1C2 : Load Capacitance

### ► How to Order

ZTB455E	P
①	②

① Part Number

② Packaging

Code	Packaging
T	Taping Reel
P	Bulk