



Ceramic Resonator (KHz)

Product Name	Part Number	Package Type	Minimum Quantity ¹ (Pieces)	
			Bulk	Tape
Ceramic Resonator	ZTBF	SMD Type	-	1,500 (2,000) ²
Ceramic Resonator	ZTB	Lead Type	1,000	-
Ceramic Resonator	ZTB456F	Lead Type	1,000	-
Ceramic Resonator	ZTB912JF	Lead Type	1,000	-

¹ The quantity of each delivery / order must be an integral multiple of the "Minimum Quantity"

² For ZTBF only: 375~699KHz: 1,500 pieces / reel; 700~1250KHz: 2,000 pieces / reel.

Dimension

ZTBF

Dimension	375 to 440	441 to 509	510 to 699	700 to 999	1000 to 1250
A	9.3±0.5	9.0±0.5	9.0±0.5	6.0±0.5	6.0±0.5
B	7.9±0.5	7.0±0.5	7.0±0.5	5.0±0.5	5.0±0.5
C	5.0±0.3	5.0±0.3	5.0±0.3	2.5±0.3	2.5±0.3
D	0.7±0.2	0.6±0.2	0.6±0.2	0.6±0.2	0.6±0.2
E	1.0±0.2	0.9±0.2	0.9±0.2	0.8±0.2	0.8±0.2
F	3.6±0.5	3.5±0.5	3.5±0.5	2.2±0.5	2.2±0.5
G	0.9±0.3	0.9±0.3	0.9±0.3	0.6±0.3	0.6±0.3
H	1.5±0.3	1.5±0.3	1.5±0.3	1.0±0.3	1.0±0.3
J	0.15±0.05	0.15±0.05	0.15±0.05	0.12±0.05	0.12±0.05

Tolerance: ±0.3mm
Unit: mm

ZTB / ZTB456F / ZTB912JF

Dimension	190 to 249	250 to 374	375 to 429	430 to 449	450 to 509	510 to 699	700 to 999	1000 to 1250
A	3.8	3.8	3.6	3.6	3.5	3.5	2.2	2.2
B	13.5	11.0	7.9	7.9	7.0	7.0	5.0	5.0
C	14.7	12.2	9.3	9.3	9.0	9.0	6.0	6.0
D	1.9	1.9	1.9	1.9	1.9	1.9	1.0	0.8
E	8.0	7.0	6.0	5.0	5.0	5.0	3.5	3.5
F	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6
G	10.0	7.7	5.0	5.0	5.0	2.5	2.5	2.5

Tolerance: ±0.3mm
Unit: mm

190~699KHz: 0.15±0.05
700~1250KHz: 0.12±0.05

Electrical Characteristics of ZTBF

Part Number	Frequency Range (KHz)	Frequency Tolerance (KHz)	Temperature Characteristics of Oscillation Frequency (-20°C~+80°C, %)	Aging Rate (10 years, %)
ZTBF_P	375 ~ 440	±2.0	±0.3	±0.5
ZTBF_E	441 ~ 509	±2.0	±0.3	±0.5
ZTBF_P	510 ~ 699	±2.0	±0.3	±0.5
ZTBF_J	700 ~ 999	±0.5%	±0.3	±0.5
ZTBF_MJ	1000 ~ 1250	±0.5%	±0.3	±0.5

- For other frequencies or specifications, please consult with our sales representatives for details.

Electrical Characteristics of ZTB

Part Number	Frequency Range (KHz)	Frequency Tolerance	Temperature Characteristics of Oscillation Frequency (-20°C~+80°C, %)	Resonant Resistance (Ω)	C ₁ (pF)	C ₂ (pF)	Aging Rate (10 years, %)
ZTB_D	190 ~ 249	±1.0KHz	±0.3	20	330	470	±0.5
ZTB_D	250 ~ 374	±1.0KHz	±0.3	20	220	470	±0.5
ZTB_P	375 ~ 429	±2.0KHz	±0.3	20	120	470	±0.5
ZTB_E	430 ~ 449	±2.0KHz	±0.3	20	100	100	±0.5
ZTB_E	450 ~ 509	±2.0KHz	±0.3	20	100	100	±0.5
ZTB_P	510 ~ 699	±2.0KHz	±0.3	35	100	100	±0.5
ZTB_J	700 ~ 999	±0.5%	±0.3	70	100	100	±0.5
ZTB_MJ	1000 ~ 1250	±0.5%	±0.3	100	100	100	±0.5

- For other frequencies or specifications, please consult with our sales representatives for details.

Electrical Characteristics of ZTB456F / ZTB912JF

Part Number	Frequency Range	Applicable IC
ZTB456F11	18.950KHz±38Hz	LA3410
ZTB456F15	19.000KHz±38Hz	LA3430
ZTB456F16	19.000KHz±38Hz	TA8122AN
ZTB456F18	19.000KHz±38Hz	TA8132N
ZTB456F21	19.000KHz±38Hz	TA8150N
ZTB456F23	456.0KHz±0.25%	LA1886
ZTB456F34	456.0KHz±0.2%	LA1888N
ZTB912JF101	918.5KHz±0.3%	AN7291
ZTB912JF104	925.0KHz±0.3%	AN7291

- For other frequencies or specifications, please consult with our sales representatives for details.