



Ceramic Resonator (MHz)

Product Name	Part Number	Package Type	Minimum Quantity ¹ (Pieces)	
			Bulk	Tape
SMD Ceramic Resonator	ZTACC, ZTACS, ZTACV	SMD Type	-	1,000
Ceramic Resonator	ZTA	Lead Type	500	1,500
SMD Ceramic Resonator	ZTTCC, ZTTCS, ZTTCV	SMD Type	-	1,000
Ceramic Resonator	ZTT	Lead Type	500	1,500

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

● Dimension

ZTACC / ZTTCC

Note:
Center terminal is omitted for ZTACC ceramic resonator.

Tolerance: ±0.3mm
Unit: mm

ZTACS / ZTACV / ZTTCS / ZTTCV

Dimension	Part no.	
	ZTACS / ZTTCS	ZTACV / ZTTCV
L	4.7±0.2	3.7±0.2
W	4.1±0.2	3.01±0.2
H	1.6±0.3	1.2±0.3
P ₁	1.0±0.4	0.9±0.3
P ₂	0.8±0.4	0.7±0.3
P ₃	1.85±0.2	1.5±0.2

Note:
Center terminal is omitted for ZTACS / ZTACV ceramic resonator.

Tolerance: ±0.3mm
Unit: mm

ZTA (MG / MT / MX)

Dimension	ZTA	
	MG	MT / MX
A	7.5 Max.	10.0 Max.

Tolerance: ±0.3mm
Unit: mm

ZTT (MGW / MT / MX)

Dimension	ZTT	
	MGW	MT / MX
A	7.5 Max.	10.0 Max.

Tolerance: ±0.3mm
Unit: mm

● Electrical Characteristics of ZTACC / ZTTCC

Part Number	Frequency Range (MHz)	Frequency Tolerance (%)	Resonant Resistance (Ω)	Temperature Characteristics of Oscillation Frequency (%)	Aging Rate (%)
ZTACC_MG / ZTTCC_MG	2.00 ~ 2.99	±0.3, ±0.5	100	±0.3	±0.5
	3.00 ~ 3.49	±0.3, ±0.5	50	±0.3	±0.5
	3.50 ~ 8.00	±0.3, ±0.5	30	±0.3	±0.5

¹ For other frequencies or specifications, please consult with our sales representatives for details.

² For ZTTCC only: C₁=C₂=22pF±20%. Other internal capacitance values are also available: 15pF, 20pF, 30pF and 33pF.

³ Withstanding voltage: DC100V (5 seconds max.)

⁴ Insulation resistance: 5x10⁸Ω min. (DC10V)

● Electrical Characteristics of ZTACS / ZTACV / ZTTCS / ZTTCV

Part Number	Frequency Range (MHz)	Frequency Tolerance (%)	Resonant Resistance (Ω)	Temperature Characteristics of Oscillation Frequency (%)	Aging Rate (%)
ZTACS_MT / ZTTCS_MT	8.00 ~ 13.00	±0.5	25	±0.3	±0.5
ZTACS_MX / ZTTCS_MX	13.01 ~ 50.00	±0.5	40	±0.3	±0.5
ZTACV_MT / ZTTCV_MT	8.00 ~ 13.00	±0.5	40	±0.3	±0.5
ZTACV_MX / ZTTCV_MX	13.01 ~ 50.00	±0.5	40	±0.3	±0.5

¹ For other frequencies or specifications, please consult with our sales representatives for details.

² For ZTTCS only: C₁=C₂= 30pF±0.1pF (8.00~13.00MHz); 15pF±0.1pF (13.01~40.00MHz); 5pF±0.1pF (40.01~50.00MHz).

³ For ZTTCV only: C₁=C₂= 15pF±0.1pF (13.01~40.00MHz); 5pF±0.1pF (40.01~50.00MHz).

⁴ Withstanding voltage: DC100V (5 seconds max.)

⁵ Insulation resistance: 5x10⁸Ω min. (DC10V)

● Electrical Characteristics of ZTA / ZTT

Part Number	Frequency Range (MHz)	Frequency Tolerance (%)	Resonant Resistance (Ω)	Temperature Characteristics of Oscillation Frequency (%)	Aging Rate (%)
ZTA_MG, ZTT_MG	2.00 ~ 2.99	±0.3, ±0.5	80	±0.3	±0.5
	3.00 ~ 3.49	±0.3, ±0.5	50	±0.3	±0.5
	3.50 ~ 8.00	±0.3, ±0.5	30	±0.3	±0.5
ZTA_MT, ZTT_MT	5.00 ~ 6.99	±0.5	30	±0.3	±0.5
	7.00 ~ 13.00	±0.5	25	±0.3	±0.5
ZTA_MX, ZTT_MX	13.01 ~ 50.00	±0.5	30	±0.3	±0.5

¹ For other frequencies or specifications, please consult with our sales representatives for details.

² For ZTT_MGW only: C₁=C₂= 22pF±20% or 30pF±20%

³ For ZTT_MT / ZTT_MX: C₁=C₂= 30pF±0.1pF (8.00~20.00MHz); 15pF±0.1pF (20.01~25.99MHz); 5pF±0.1pF (26.00~50.00MHz).

⁴ Withstanding voltage: DC100V (5 seconds max.)

⁵ Insulation resistance: 5x10⁸Ω min. (DC10V)