

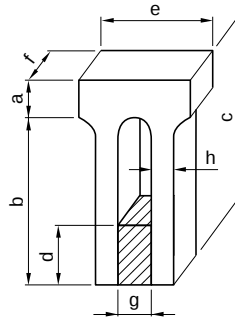
Ferrite Cores

For Ultrasonic Oscillator Magnetostriction Vibrators

V2X Series

FEATURES

- Due to high specific resistance, eddy current loss is very small.
- Electro-mechanical energy conversion efficiency is high(85 to 90%).
- Since a ferrite magnet is used, there is not necessary for DC bias.
- The magnet has excellent anticorrosive characteristics that permits to use in solvent such as acid, alkaline and others.



APPLICATIONS

Ultrasonic cleaning, sonar, ultrasonic machining.

denotes the ferrite magnet for DC bias.

Designed to be used by inserting the ferrite magnet between legs.

MATERIAL CHARACTERISTICS(V2 MATERIAL)

Temperature dependence of resonant frequency	T_K	(1/°C)	17×10^{-5}	With 28kHz π type at 4AT
Motional impedance	Z_{m00}	(Ω)	180	
Quality factor Q	Q_m		350	
Electro-acoustic efficiency	η_0	(%)	90	
Electro-mechanical coupling factor	K	(%)	18	
Maximum input power(water load)	W/cm^2		10	With square pole specimen
Continuous input power(water load)	W/cm^2		3 to 5	
Electrical resistivity	ρ	($\Omega \cdot m$)	≥ 1	
Density	d	(kg/m ³)	5.1×10^3	
Bending strength	P	(N/mm ²)	107.9 to 127.5	
Thermal expansion coefficient	α		$8 \times 10^{-6}/^\circ C$	With toroidal specimen
Curie temperature	T_c	(°C)	450	
Magnetic susceptibility	k	(emu)	2.21×10^{-7}	
Magnetostrictivity	Γ		2.5×10^5	
Activity ratio	$k\Gamma^2$		9×10^{10}	
Incremental permeability	$\mu\Delta$		35	With toroidal specimen at H=796A/m
Propagation velocity	v	(km/s)	5.6	

Part No.	Nominal frequency(kHz)	Resonant frequency(kHz)	Dimensions(mm)								Weight(g)
			a	b	c	d	e	f	g	h	
V2X π 20	20	19.5±0.4	18	114	132±3	26	51±1	25±0.5	14	13	555
V2X π 28(A)	28	28.5±0.4	14	74	88±3	18	40±1	20±0.5	11	9	240
V2X π 40(A)	40	40.5±0.8	12	50	62±2	18	40±1	20±0.5	11	9	179
V2X π 50	50	50.5±0.8	12	37	49±2	18	40±1	20±0.5	11	9	146
V2X π 75(A)	75	75±1.6	6.5	26	32.5±2	12	27±1	13±0.5	7.7	6	40
V2X π 100	100	100±1.6	5	20	25±2	9	21±1	10±0.5	5.5	4.5	17

- Appended to the product number is our control code.

RESONANT FREQUENCY DEVIATION AND COLOR INDICATION

Unit:kHz

Frequency rank	Nominal resonant frequency					
	20kHz	28kHz	40kHz	50kHz	75kHz	100kHz
1	19.1 to 19.2	28.1 to 28.2	39.7 to 39.9	49.7 to 49.9	73.4 to 73.8	98.4 to 98.8
2	19.2 to 19.3	28.2 to 28.3	39.9 to 40.1	49.9 to 50.1	73.8 to 74.2	98.8 to 99.2
3	19.3 to 19.4	28.3 to 28.4	40.1 to 40.3	50.1 to 50.3	74.2 to 74.6	99.2 to 99.6
4	19.4 to 19.5	28.4 to 28.5	40.3 to 40.5	50.3 to 50.5	74.6 to 75	99.6 to 100
5	19.5 to 19.6	28.5 to 28.6	40.5 to 40.7	50.5 to 50.7	75 to 75.4	100 to 100.4
6	19.6 to 19.7	28.6 to 28.7	40.7 to 40.9	50.7 to 50.9	75.4 to 75.8	100.4 to 100.8
7	19.7 to 19.8	28.7 to 28.8	40.9 to 41.1	50.9 to 51.1	75.8 to 76.2	100.8 to 101.2
8	19.8 to 19.9	28.8 to 28.9	41.1 to 41.3	51.1 to 51.3	76.2 to 76.6	101.2 to 101.6

- The resonant frequency deviation is color coded. When two or more units are used as a set, those having the same color should be combined.

Specifications which provide more details for the proper and safe use of the described product are available upon request.

All specifications are subject to change without notice. <http://www.rfoe.net/> TEL:0755-83397033 FAX:0755-83376182 E-MAIL:szss20@163.com

TDK

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For Ultrasonic Oscillator

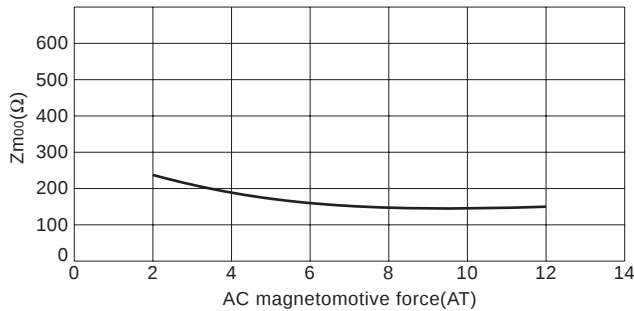
Magnetostriction Vibrators

V2X Series

ELECTRICAL CHARACTERISTICS

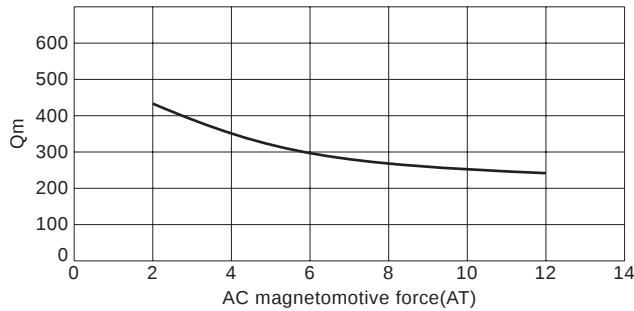
MOTIONAL IMPEDANCE BY AC MAGNETOMOTIVE FORCE

Winding number:40Ts/leg
Winding width: 25mm



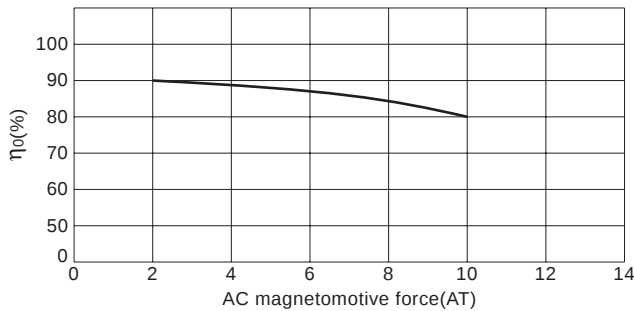
QUALITY FACTOR Q BY AC MAGNETOMOTIVE FORCE

Winding number:40Ts/leg
Winding width: 25mm



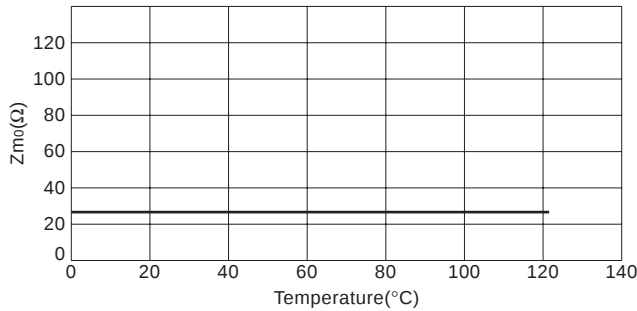
ELECTRO-ACOUSTIC EFFICIENCY BY AC MAGNETOMOTIVE FORCE

Winding number: 40Ts/leg
Winding width: 25mm



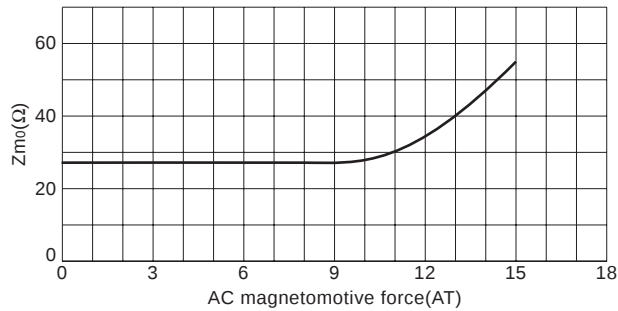
TEMPERATURE CHANGE OF Zmo

Measure underwater of the radiating surface
Water temperature:20°C
Winding number: 40Ts/leg



CHANGE BY Zmo AMPLITUDE BY VIBRATION

Measure underwater of the radiating surface
Winding number: 40Ts/leg



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