



Piezoelectric Ceramics



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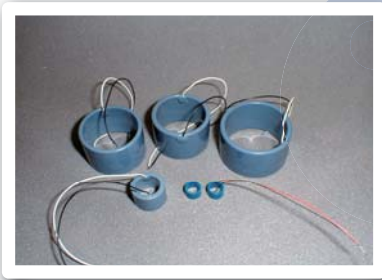
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MKT-TAISEI Co.,Ltd.



PIEZOELECTRIC CERAMICS ELEMENT



Cylinder

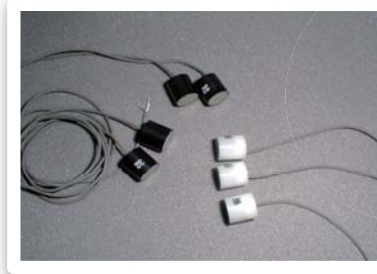
TYPE

C-21 C-24 C-26
C-44 C-50 C-100
C-150 C-220 C-350

APPLICATION

- Traffic Light Sensor
- Water Level Sensor
- Positioning Detector

SENSOR MODULE



Bubble Sensor

TYPE

MZ5-1.5M
MZ5-1.6M

APPLICATION

- Bubble Sensor



Disk

TYPE

D-4 D-5 D-10
W-40
Dt-5 Dt-10 Dt-18
M-20 M-22 M-25

APPLICATION

- Proximity Sonar • Washer
- Nearness Switch • Humidifier
- Medical Instruments



Vibration Sensor

TYPE

CL-6 (Clamp Type)
CL-8 (Clamp Type)

APPLICATION

- Vibration Diagnosis
- Diesel Engine Tachometer

⚠ Specifications of products are subject to change without notice.

e-piezoelectric_ceramics_digest07



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◆ C-series ◆ PIEZOELECTRIC CERAMICS C-series

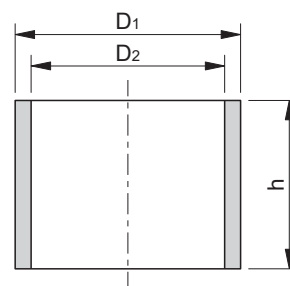
PIEZOELECTRIC CERAMICS

Code		C-12	C-21	C-22	C-24	C-26	C-44
Nominal Frequency	[kHz]	12.5	21	22	24	26	44
Configuration No-Coating	$(D_1 \times h)$ D_2 [mm]	$\phi 74.5 \times 60.0$ $\phi 66.5$	$\phi 45.0 \times 27.7$ $\phi 39.9$	$\phi 41.6 \times 27.6$ $\phi 37.0$	$\phi 39.4 \times 27.6$ $\phi 34.8$	$\phi 36.8 \times 27.5$ $\phi 31.6$	$\phi 22.3 \times 6.4$ $\phi 18.3$
Configuration Coating	$(D_1 \times h)$ D_2 [mm]	$\phi 76.0 \times 61.0$ $\phi 65.0$	$\phi 47.0 \times 28.65$ $\phi 38.8$	$\phi 44.3 \times 28.5$ $\phi 36.1$	$\phi 40.65 \times 28.75$ $\phi 33.16$	$\phi 38.1 \times 28.25$ $\phi 30.6$	$\phi 22.75 \times 6.95$ $\phi 17.85$
Terminal		Anti-heat vinyl twisted wire					
Coating		Nothing, Epoxy Resin					
Features	Resonance Frequency (fr) [kHz]	12.5 ± 10%	21 ± 5%	22 ± 5%	24 ± 5%	26 ± 5%	44 ± 5%
	Oscillating Mode	Diameter	Diameter	Diameter	Diameter	Diameter	Diameter
	Electromechanical Coupling Coefficient (Kp)	25% min.	25% min.	25% min.	25% min.	25% min.	25% min.
	Capacitance (C) [pF]	60,000 ± 20%	25,000 ± 15%	24,000 ± 15%	23,870 ± 15%	20,000 ± 15%	3,300 ± 15%
	Mechanical Quality Factor (Qm)	50~90	60~100	60~90	50~90	50~90	60
	Insulation Resistance (Ri) DC100V	10MΩ min.	10MΩ min	10MΩ min	10MΩ min	10MΩ min	10MΩ min

Code		C-50	C-100	C-150	C-220	C-350
Nominal Frequency	[kHz]	50	100	150	220	350
Configuration No-Coating	$(D_1 \times h)$ D_2 [mm]	$\phi 19.5 \times 15.5$ $\phi 14.0$	$\phi 10.0 \times 7.0$ $\phi 8.0$	$\phi 7.5 \times 5.5$ $\phi 4.5$	$\phi 4.55 \times 3.5$ $\phi 3.55$	$\phi 3.0 \times 2.0$ $\phi 2.0$
Configuration Coating	$(D_1 \times h)$ D_2 [mm]	$\phi 19.95 \times 16.05$ $\phi 13.55$	-	-	-	-
Terminal		Anti-heat vinyl twisted wire				Ag or Ni
Coating		Nothing, Epoxy Resin	Nothing	Nothing	Nothing	Nothing
Features	Resonance Frequency (fr) [kHz]	50 ± 5%	100 ± 5%	150 ± 5%	220 ± 5%	350 ± 5%
	Oscillating Mode	Diameter	Diameter	Diameter	Diameter	Diameter
	Electromechanical Coupling Coefficient (Kp)	25% min.	30% min.	25% min.	30% min.	30% min.
	Capacitance (C) [pF]	5,200 ± 15%	3,200 ± 15%	1,500 ± 15%	1,300 ± 15%	550 ± 15%
	Mechanical Quality Factor (Qm)	80	30~100	100	40	40
	Insulation Resistance (Ri) DC100V	10MΩ min.	10MΩ min.	10MΩ min.	10MΩ min.	10MΩ min.



[Dimension]



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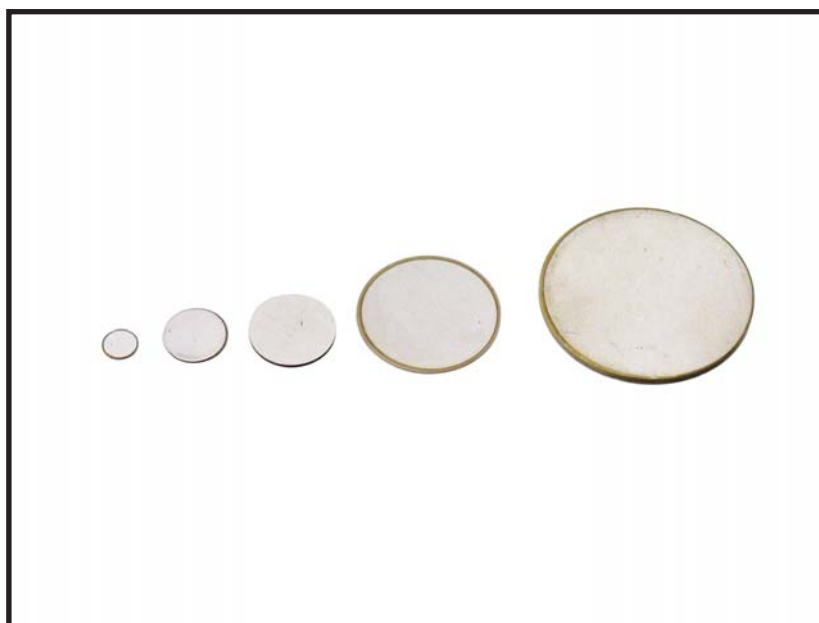
◆ D-series ◆


PIEZOELECTRIC CERAMICS D-series

PIEZOELECTRIC CERAMICS DISK TYPE

Code		D-4	D-5	D-10	D-25	D-30
Nominal Frequency	[kHz]	480	400	200	78	64
Dimension	($\phi \times t$)[mm]	$\phi 4.0 \times 0.3$	$\phi 5.0 \times 0.3$	$\phi 10.0 \times 0.5$	$\phi 25.0 \times 0.5$	$\phi 30.0 \times 0.5$
Terminal		Ag	Ag	Ag	Ag	Ag
Coating		Nothing	Nothing	Nothing	Nothing	Nothing
Features	Resonance Frequency (fr) [kHz]	$480 \pm 5\%$	$400 \pm 5\%$	$200 \pm 5\%$	$78 \pm 5\%$	$64 \pm 5\%$
	Oscillating Mode	Diameter	Diameter	Diameter	Diameter	Diameter
	Electromechanical Coupling Coefficient (Kp)	65% min.	65% min.	65% min.	65% min.	65% min.
	Capacitance (C) [pF]	$800 \pm 15\%$	$1,000 \pm 15\%$	$2,700 \pm 15\%$	$18,000 \pm 15\%$	$26,000 \pm 15\%$
	Mechanical Quality Factor (Qm) *1	80	80	80	80	80
	Insulation Resistance (Ri) DC100V	10M Ω min.	10M Ω min.	10M Ω min.	10M Ω min.	10M Ω min.

*1 : Mechanical Q is a reference value. It changes by the electrode geometry.



 Specifications of products are subject to change without notice.

e-d_series-p01-11



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◆ Dt-series ◆

PIEZOELECTRIC CERAMICS Dt-series

PIEZOELECTRIC CERAMICS DISK TYPE

Code		D5-920K	D10-1M	D10-2M
Nominal Frequency	[kHz]	380 / 920	200 / 1,000	200 / 2,000
Configuration	($\phi \times t$) [mm]	$\phi 5.0 \times 2.0$	$\phi 10.0 \times 2.0$	$\phi 10.0 \times 1.0$
Terminal		Ag	Ag	Ag
Coating		Nothing	Nothing	Nothing
Features	Resonance Frequency (fr) [kHz]	$380 \pm 7\% / 920 \pm 7\%$	$200 \pm 7\% / 1,000 \pm 7\%$	$200 \pm 7\% / 2,000 \pm 7\%$
	Oscillating Mode	Diameter / Thickness	Diameter / Thickness	Diameter / Thickness
	Electromechanical Coupling Coefficient (Kp)	60% / 40%	60% / 40%	60% / 40%
	Capacitance (C) [pF]	$195 \pm 15\%$	$660 \pm 15\%$	$1,200 \pm 15\%$
	Mechanical Quality Factor (Qm) *1	30 min.	30 min.	30 min.
	Insulation Resistance (Ri) DC100V	10M Ω min.	10M Ω min.	10M Ω min.

*1 : Mechanical Q is a reference value. It changes by the electrode geometry.



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e-dt_series-p01-13



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◆◆ W-series ◆◆

PIEZOELECTRIC CERAMICS W-series

PIEZOELECTRIC CERAMICS DISK TYPE

Code			W-40
Nominal Frequency	[kHz]		52
Configuration	($\phi \times t$)	[mm]	$\phi 42.0 \times 3.5$
Terminal			Ag
Coating			Nothing
Features	Resonance Frequency	(fr) [kHz]	$52 \pm 5 \%$
	Oscillating Mode		Diameter
	Electromechanical Coupling Coefficient	(Kp)	50% min.
	Capacitance	(C) [pF]	$4,600 \pm 15 \%$
	Mechanical Quality Factor	(Qm) *1	1,540
	Insulation Resistance	(Ri) DC100V	500M Ω min.

*1 : Mechanical Q is a reference value. It changes by the electrode geometry.



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e-w_series-p01-06



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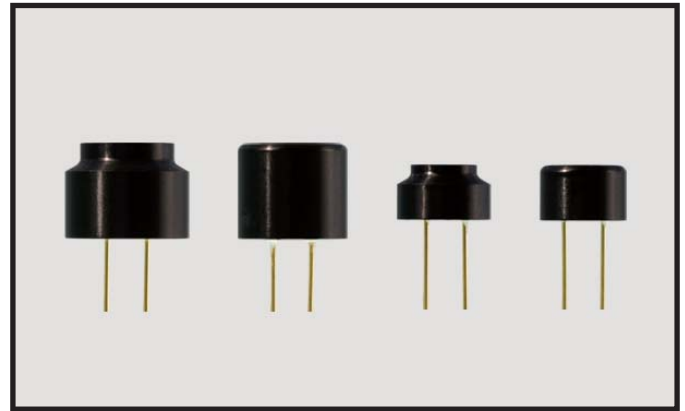
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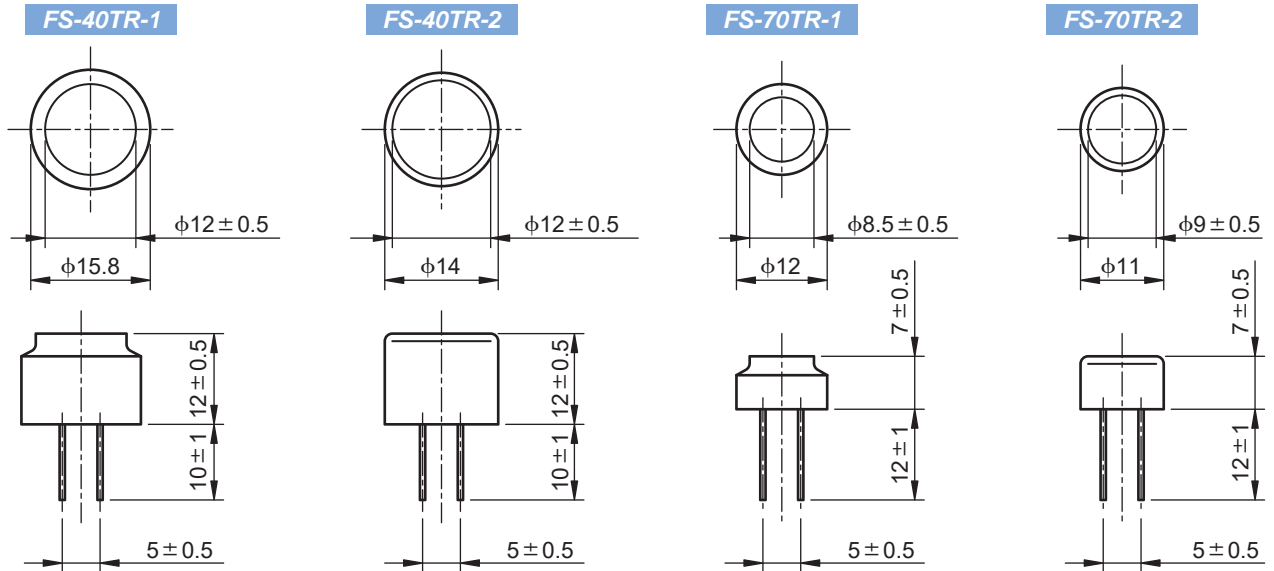
FS Ultrasonic Sensors

Code

FS-□□		TR-□	
Frequency		Directivity	
40 kHz	40	Narrow	1
70 kHz	70	Wide	2



Configuration , Dimensions



Unit : mm

Specifications

Code	FS-40TR-1	FS-40TR-2	FS-70TR-1	FS-70TR-2
Using Method	T/R	T/R	T/R	T/R
Nominal Frequency [kHz]	40	40	70	70
Sensitivity [dB/V/ μ bar]	-60 min.	-60 min.	-80 min.	-80 min.
S.P.L (Sound Pressure Level) [dB]	100 min.	100 min.	90 min.	90 min.
Directivity [deg]	60	90	55	80
Detectable Range [m MAX.]	4	4	3	3
Max Input Voltage [V rms]	20	20	20	20
Using Temp. Range [°C]	-30 ~ +85	-30 ~ +85	-30 ~ +85	-30 ~ +85

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e-fs_xxtr-p01-11



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When making inquiries, please provide the following.

- ① Use
- ② Shape and size
- ③ Resonance frequency and vibration from used.
- ④ Electrode structure.
- ⑤ Existence of surface.
- ⑥ Quantity



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