

# ◀◀ Loudspeaker - Alnico Type



LA-01



LA-02



LA-03



LA-04

Dimension (mm) (Dia.)	Magnet Dia. (mm)	Impedance (Ω)	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
40	17	8	0.5	780 ~ 10K	80
45	17	8	0.5	850 ~ 6K	90
50	17	8	1	500 ~ 5K	83
57	18	8	1	410 ~ 11K	84
66	22	8	0.5	450 ~ 9K	85
77	22	8	1	260 ~ 10K	83

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

20 40 60 80 0 -80 -60

## ◀◀ Loudspeaker - Ferrite Type

Dimension (mm) (Dia.)	Magnet Dia. (mm)	Impedance (Ω)	Rated Power (W)	Frequency Fo ~ (Hz)	SPL. (dB)
40	32	8	1	600 ~ 10K	81
45	32	8	0.5	450 ~ 5K	83
50	32	8	0.5	600 ~ 5K	83
57	32	8	1	600 ~ 6K	85
66	32	8	3	580 ~ 8K	81
66 x 66	40	8	2	150 ~ 15K	81
77	32	8	1	380 ~ 7K	84
77 x 77	45	8	2	250 ~ 2.5K	86
85 x 85	60	8	12	500 ~ 8K	90
87	55	8	0.5	550 ~ 6K	90
92	45	4	5	210 ~ 8K	85
102	60	4	10	100 ~ 15K	86
102 x 102	60	8	10	120 ~ 15K	85
105 x 105	50	4	5	130 ~ 15K	88
115	78	4	15	80 ~ 7K	84
115 x 115	70	8	10	100 ~ 13K	86
130	80	4	25	50 ~ 7K	85
133	80	8	20	60 ~ 15K	82
170	80	8	40	45 ~ 7K	85

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



LF-01



LF-02



LF-03



LF-04



LF-05



LF-06



LF-07

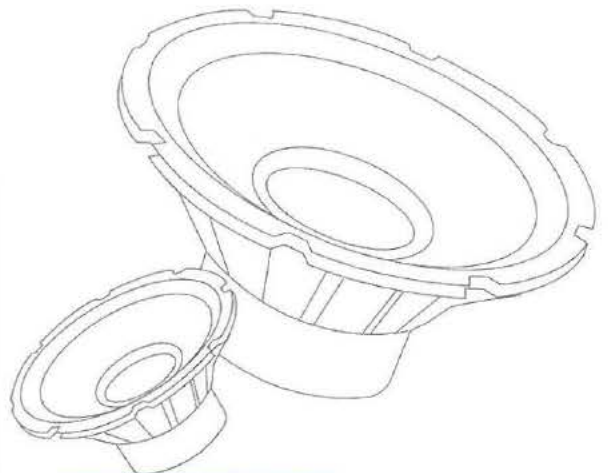




# ◀◀ I pod Speaker



IS-01



IS-02



IS-03



IS-04



Dimension (mm) (Dia.) / (W) x (L)	Magnet Dia. (mm)	Impedance (Ω)	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
28	25	8	2	450 ~ 20K	90
28 x 28	22	8	2	450 ~ 20K	90
32	22	8	2	420 ~ 20K	75
32 x 32	26	8	2.5	300 ~ 20K	87
34	26	8	2	200 ~ 20K	83
34 x 34	26	4	3.5	240 ~ 20K	85
36	18	4	1	450 ~ 20K	89
40	20	8	2	300 ~ 20K	86
42 x 42	26	4	2	350 ~ 20K	85
46 x 46	38	6	5	150 ~ 18K	76
52	20	4	3	200 ~ 20K	89

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

20      40      60      80      0      -80      -60

# TV Speaker

Dimension (mm) (W) x (L)	Magnet Dia. (mm)	Impedance ( $\Omega$ )	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
30 x 70	18	8	0.25	450 ~ 10K	82
41 x 71	22	8	0.25	260 ~ 20K	81
45 x 153	43	16	5	180 ~ 20K	85
50 x 90	38	16	10	150 ~ 20K	81
50 x 110	50	8	10	180 ~ 20K	86
58 x 126	37.4	4	5	150 ~ 20K	84
77 x 128	58	8	10	130 ~ 20K	83
80 x 160	56.7	8	15	140 ~ 17K	85

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



TV-01



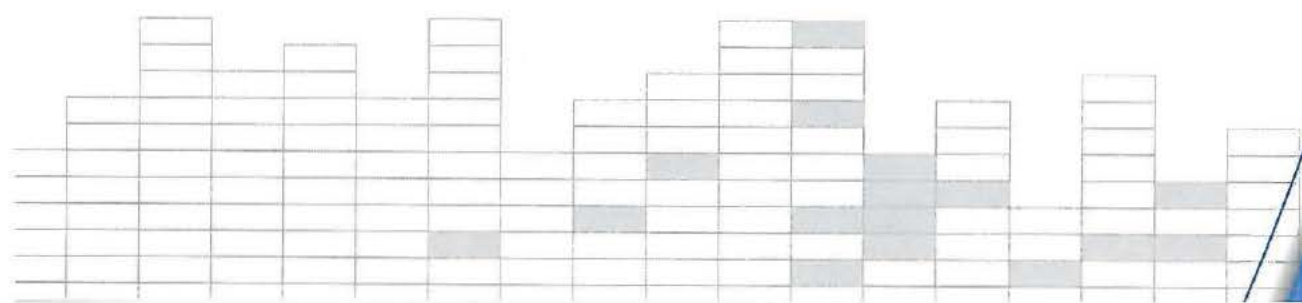
TV-02



TV-03



TV-04





# ◀◀ Mylar Speaker - Metal Frame



Dimension (mm) (Dia.)	Magnet Dia. (mm)	Impedance (Ω)	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
10	6	8	0.25	2.2K ~ 8K	78
13	8.8	8	0.25	1K ~ 7K	71
15	9	16	0.25	1K ~ 9K	76
20	11	8	0.25	1K ~ 5K	87
23	10.9	8	0.25	1K ~ 6K	88
27	13	8	0.25	750 ~ 6K	82
28	13	8	0.25	680 ~ 7K	87
29	13.5	8	0.25	600 ~ 4.5K	86
30	13.5	8	0.25	600 ~ 8K	83
32	15.6	8	0.25	500 ~ 5K	83
34	15.5	8	0.25	700 ~ 7K	86
36	16.2	8	0.25	550 ~ 6K	90
40	16.3	8	0.25	500 ~ 5K	88
45	17	8	0.25	700 ~ 8K	87
50	17	8	0.25	550 ~ 4K	91
57	17	8	0.25	450 ~ 3.5K	88

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

20 40 60 80 0 -80 -60

## ◀◀ Mylar Speaker - Plastic Frame

### *Mylar Speaker - Plastic Frame & Alnico Type*

Dimension (mm) (Dia.)	Magnet Dia. (mm)	Impedance ( $\Omega$ )	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
11	11	8	0.25	1.2K ~ 6K	76
20	9.2	8	0.25	900 ~ 3.5K	78
23	14.1	8	0.25	900 ~ 7K	80
27	17.5	8	0.25	500 ~ 4K	84
29	18	8	0.25	550 ~ 5K	87
30	16	8	0.25	600 ~ 6K	84
36	15	50	0.5	500 ~ 7K	91
40	17.1	8	0.25	750 ~ 6K	89
50	18.6	8	1	500 ~ 5K	84

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

### *Mylar Speaker - Plastic Frame & Ferrite Type*

Dimension (mm) (Dia.)	Magnet Dia. (mm)	Impedance ( $\Omega$ )	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
20	16	8	0.25	1.1K ~ 7K	83
21	16	8	0.25	950 ~ 7K	84
23	16	8	0.25	750 ~ 5K	84
27	16	8	0.25	950 ~ 7K	83
29	16	8	0.25	950 ~ 7K	86
30	16	8	0.25	800 ~ 5K	84
34	21	50	0.5	550 ~ 7K	86
36	27	8	0.25	900 ~ 5K	85
40	21	8	0.25	850 ~ 5K	89
50	21	8	0.25	500 ~ 4.5K	87
57	21	8	0.25	600 ~ 3.5K	88

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



MP-01



MP-02



MP-03



MP-04



MP-05



MP-06



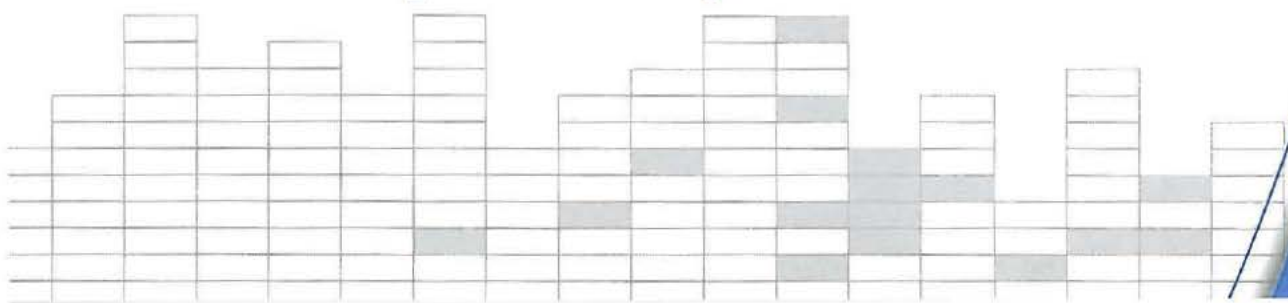
MP-07



MP-08



MP-09

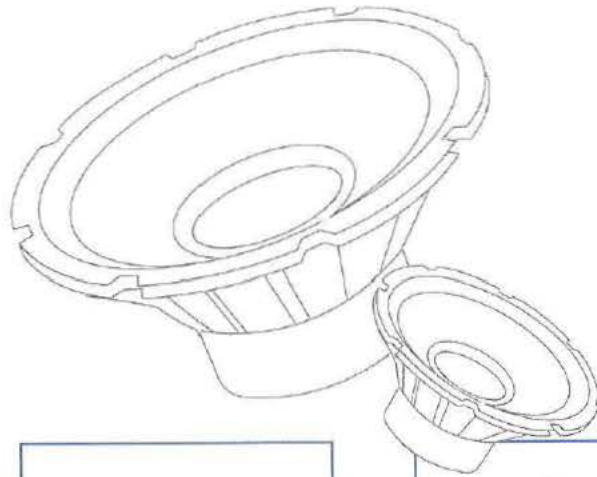




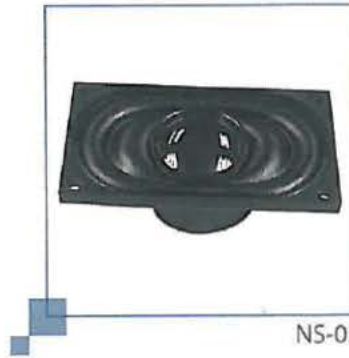
# ◀ Notebook & Modem Speaker



NS-01



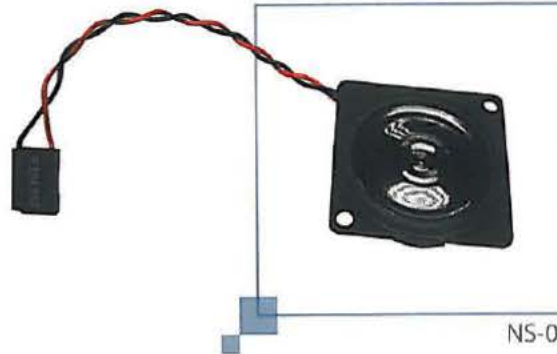
NS-02



NS-03



NS-04



NS-05



NS-06

Dimension (mm) (Dia.) x (H) / (W) x (L)	Magnet Dia. (mm)	Impedance (Ω)	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)	Housing Material
14 x 24	11.6	8	1	800 ~ 20K	81	Plastic Housing
15 x 25	11	8	0.5	900 ~ 20K	87	Plastic Housing
16 x 35	11	8	1	600 ~ 13K	83	Plastic Housing
20 x 35	15	8	1	650 ~ 20K	84	Plastic Housing
20 x 40	14.7	8	1	900 ~ 20K	88	Plastic Housing
21 x 27	13.7	8	1	550 ~ 20K	80	Plastic Housing
28 x 40	16.5	8	1	450 ~ 20K	84	Plastic Housing
30 x 14	-	8	0.1	1000 ~ 14K	71	Plastic Housing
40 x 40	15	8	0.5	560 ~ 20K	83	Plastic Housing
23 x 57.5	-	8	2	300 ~ 2.5K	89	Plastic Housing with Ears
32 x 74.8	-	8	2	450 ~ 10K	100	Plastic Housing with Ears

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

20 40 60 80 0 -80 -60



# Car Speaker

Dimension (Inch) (Dia.) / (W) x (L)	Magnet Dia. (mm)	Impedance ( $\Omega$ )	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)	Voice Coil (mm)
4	60	8	30	30 ~ 18K	88	25
5	80	8	30	50 ~ 18K	88	25
6	80	8	40	30 ~ 18K	88	28
6 x 9	100	8	40	30 ~ 18K	88	25 - 35

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



CS-01



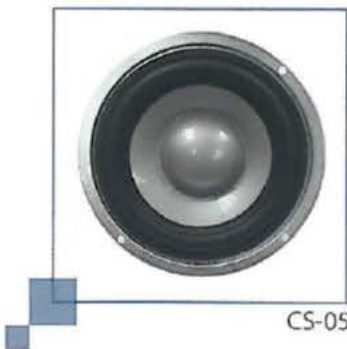
CS-02



CS-03



CS-04



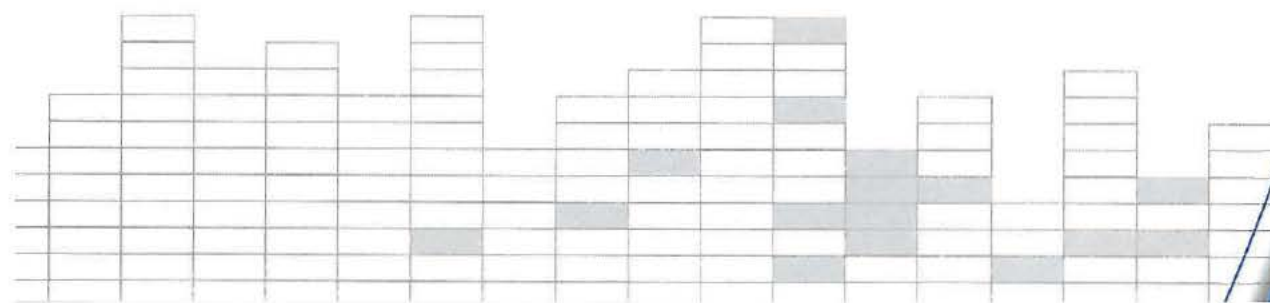
CS-05



CS-06



CS-07

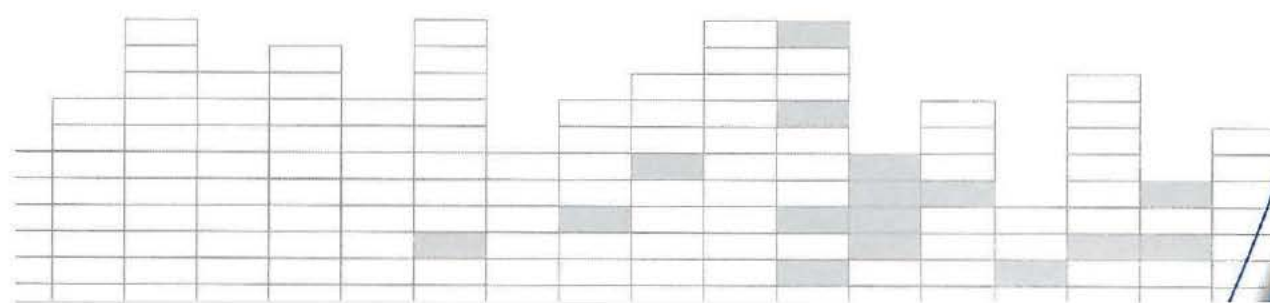
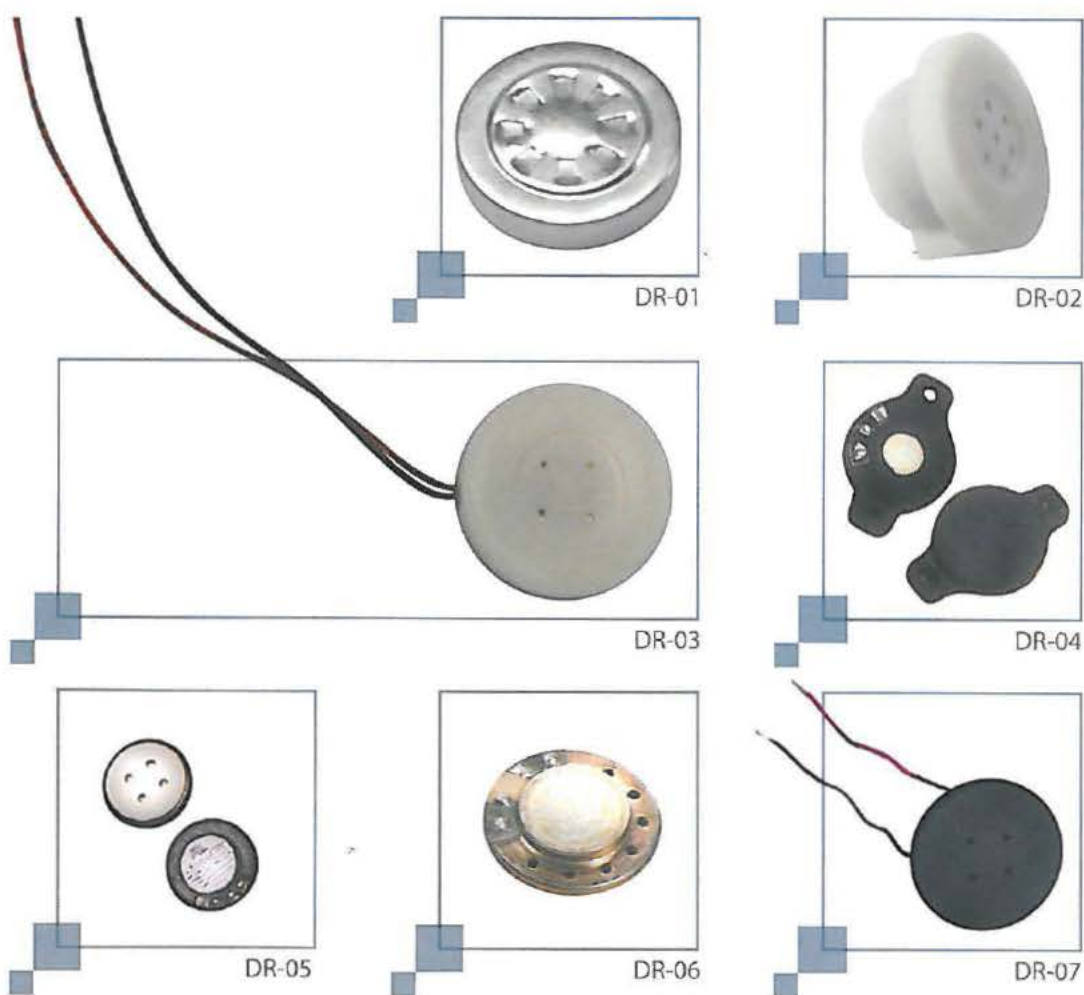




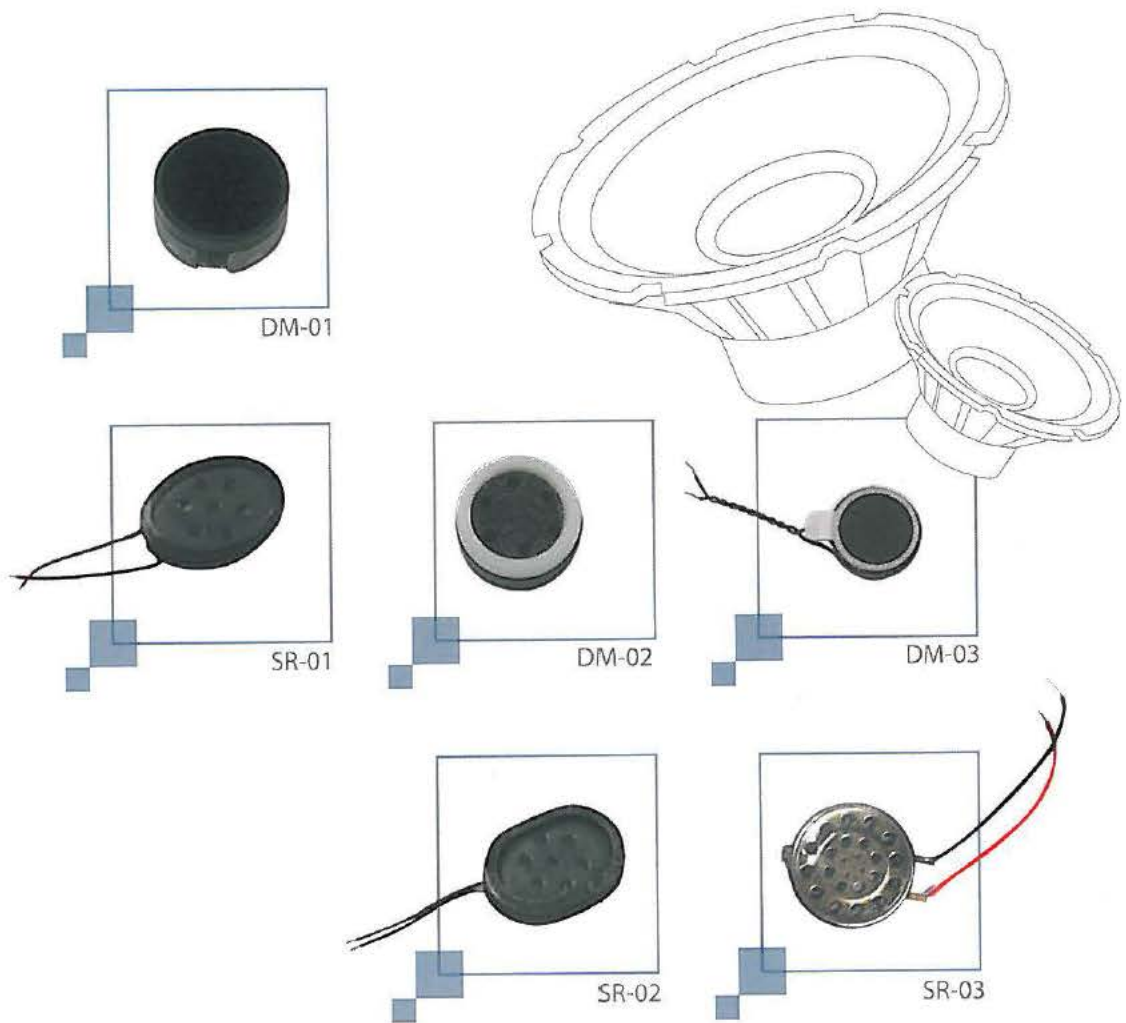
# Dynamic Receiver

Dimension (mm) (Dia.) x (Height)	Impedance ( $\Omega$ )	SPL (dB)	Housing Material
10 x 2.8	32	110	Metal Housing
13 x 2.5	32	93	Metal Housing
15 x 2.5	32	96	Metal Housing
16 x 2.5	8	80	Metal Housing
20 x 3.6	150	90	Metal Housing
25 x 5.2	150	90	Metal Housing
26 x 4	150	89	Metal Housing
28 x 7.5	150	94	Plastic Housing
29 x 5.8	32	90	Plastic Housing with Ears
31 x 11	150	93	Plastic Housing
34 x 18	150	95	Plastic Housing
35 x 17	150	98	Metal Housing
35 x 18	150	98	Metal Housing
38 x 18	150	99	Metal Housing
38 x 21.2	150	96	Plastic Housing
45 x 21	150	99	Plastic Housing

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



# Dynamic Microphone & Speaker + Receiver



## Dynamic Microphone

Dimension (mm) (Dia.) x (Height)	Impedance ( $\Omega$ )	Frequency Fo ~ (Hz)	Sensitivity (dB)
22 x 10.6	600	100 ~ 10K	65
27.2 x 26.5	600	55 ~ 15K	74
28 x 15	600	60 ~ 17K	74
29 x 24.2	500	50 ~ 15K	78

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

## Speaker + Receiver

Dimension (mm) (Dia.) x (Height)	Magnet Dia. (mm)	Impedance ( $\Omega$ )	Rated Power (W)	Frequency Fo ~ (Hz)	SPL (dB)
15 x 2.4	15	8	0.25	300 ~ 4K	124
15 x 3	10	8	0.3	1.2K ~ 10K	88
15 x 3.3	9	16	0.5	980 ~ 20K	87
15 x 4.4	11	8	0.5	500 ~ 10K	90
18 x 4	10	8	0.5	900 ~ 10K	88

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

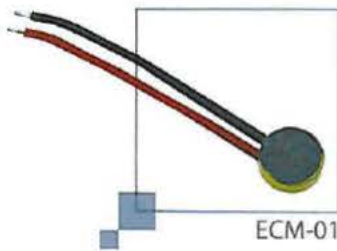
20 40 60 80 0 -80 -60



# Electret Condenser Microphone

Dimension (mm) (Dia.) x (Height)	Sensitivity (dB) 0dB = 1V/Pa	Impedance (KΩ)	Operating Voltage (VDC)	Directivity
4.0 x 1.7 (max.)	-42	2.2	2.0	Omni-Directional
4.0 x 2.5 (max.)	-42	2.2	2.0	Omni-Directional
6.0 x 1.8	-42 ~ -46	2.2	2.0	Omni-Directional
3.0 x 1.5	-42 ~ -50	2.2	2.0	Omni-Directional
4.0 x 1.1	-46 ~ -52	2.2	2.0	Omni-Directional
4.0 x 1.5	-47 ~ -51	2.2	2.0	Noise-Cancelling
4.0 x 1.5	-42 ~ -48	2.2	2.0	Omni-Directional
4.0 x 2.0	-46 ~ -52	2.2	2.0	Omni-Directional
4.0 x 2.0	-47 ~ -51	0.68	1.5	Uni-Directional
4.0 x 2.0	-47 ~ -51	2.2	2.0	Noise-Cancelling
4.5 x 1.8	-42 ~ -48	2.2	2.0	Omni-Directional
4.5 x 3.0	-42 ~ -48	2.2	2.0	Omni-Directional
6.0 x 0.9	-44 ~ -50	2.2	2.0	Omni-Directional
6.0 x 1.1	-44 ~ -50	2.2	2.0	Omni-Directional
6.0 x 1.3	-42 ~ -48	2.2	2.0	Omni-Directional
6.0 x 1.5	-42 ~ -48	2.2	2.0	Omni-Directional
6.0 x 1.8	-42 ~ -48	2.2	2.0	Omni-Directional
6.0 x 2.2	-38 ~ -48	2.2	2.0	Omni-Directional
6.0 x 2.7	-38 ~ -48	2.2	2.0	Omni-Directional
6.0 x 2.7	-47 ~ -51	0.68	1.5	Uni-Directional
6.0 x 3.5	-36 ~ -46	2.2	2.0	Omni-Directional
6.0 x 3.9	-36 ~ -46	2.2	2.0	Omni-Directional
6.0 x 5.0	-47 ~ -51	0.68	1.5	Uni-Directional
9.4 x 4.5	-36 ~ -46	2.2	3.0	Omni-Directional
9.4 x 6.5	-36 ~ -46	2.2	3.0	Omni-Directional
9.7 x 3.0	-47 ~ -51	0.68	1.5	Uni-Directional
9.7 x 4.5	-36 ~ -46	2.2	3.0	Omni-Directional
9.7 x 5.0	-47 ~ -51	0.68	1.5	Uni-Directional
9.7 x 5.0	-47 ~ -51	0.68	1.5	Noise-Cancelling
9.7 x 5.2	-51 ~ -54	0.68	1.5	Noise-Cancelling
9.7 x 5.2	-47 ~ -51	0.68	1.5	Uni-Directional
9.7 x 6.5	-36 ~ -46	2.2	3.0	Omni-Directional
9.7 x 6.7	-32 ~ -46	2.2	3.0	Omni-Directional
13.0 x 6.5	-47 ~ -51	0.68	1.5	Uni-Directional

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.



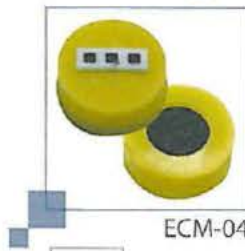
ECM-01



ECM-02



ECM-03



ECM-04



ECM-05





Dimension (mm) (Dia.)	Height (mm)	Frequency (KHz)	SPL (dB)	Detectable Range (Meter)	Case Material	Category
10	7	40	>160	>6	Black Mesh with Aluminium Case / Flower Mesh with Black Plastic Case / Black Mesh with Black Plastic Case	Transmitter / Receiver
10	7	40	>160	>6	Waterproof Type with Aluminium Case	Transmitter & Receiver
12	9.5	40	>110	0.2 - 6	Black Mesh with Aluminium Case	Transmitter / Receiver
14	10	40	>95	0.2 - 2	Waterproof Type with Aluminium Case / Waterproof Type with Aluminium Case 1	Transmitter & Receiver
16	10.5	40	>114	6	Black Mesh with Black Aluminium Case	Transmitter / Receiver
16	12	23	>112	1.6	Black Mesh with Aluminium Case	Transmitter / Receiver
16	12	25	>112	1.5	Black Mesh with Aluminium Case	Transmitter / Receiver
16	12	28	>113	6	Black Mesh with Aluminium Case	Transmitter / Receiver
16	12	40	>114	6	Black Mesh with Aluminium Case	Transmitter / Receiver
16	10.5	40	>95	0.2 - 4	Waterproof Type with Aluminium Case	Transmitter & Receiver
16	12	40	>95	0.2 - 4	Waterproof Type with Aluminium Case	Transmitter & Receiver
18	12	40	>95	0.2 - 4	Waterproof Type with Black Aluminium Case	Transmitter & Receiver

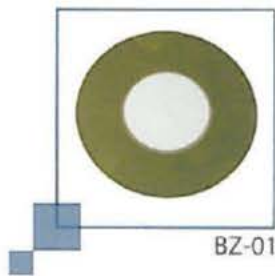
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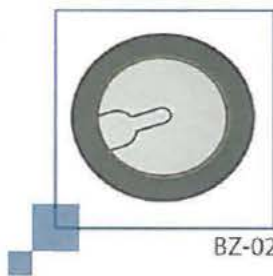
# Piezo Ceramic Buzzer Plate

Dimension (mm) (Dia.) / (W) x (L)	Ceramic Disc (mm) (Dia.)	Total Thickness (mm)	Resonant Frequency (KHz)	Resonant Impedance (Max $\Omega$ )	Operating Voltage (Vp-p)
8	5	0.45	40.0	2000	30
10	7	0.45	30.0	600	30
12	9	0.40	16.5	800	30
13 x 13	12 x 12	0.63	13.0	100	30
13.5	10	0.40	14.0	600	30
15	11	0.32	18.0	400	30
20	14	0.42	6.0	1000	30
25	20	0.45	6.0	300	30
27	20	0.38	3.4	250	30
31	20	0.22	1.6	600	30
35	25	0.45	2.6	250	30
38	25	0.22	1.4	1000	30
41	25	0.45	1.5	600	30
50	25	0.45	3.0	200	30

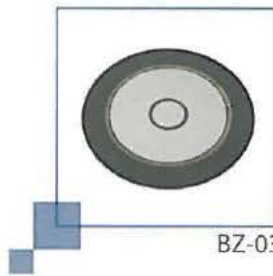
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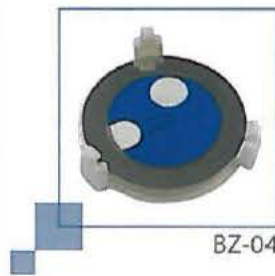
BZ-01



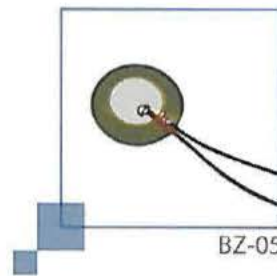
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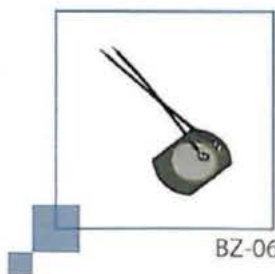
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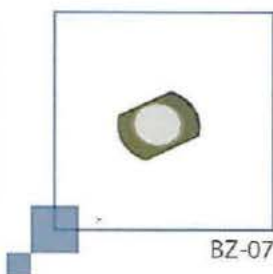
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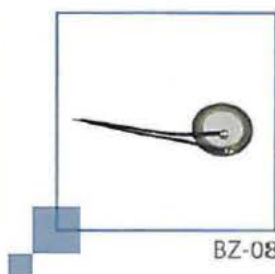
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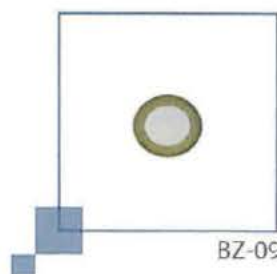
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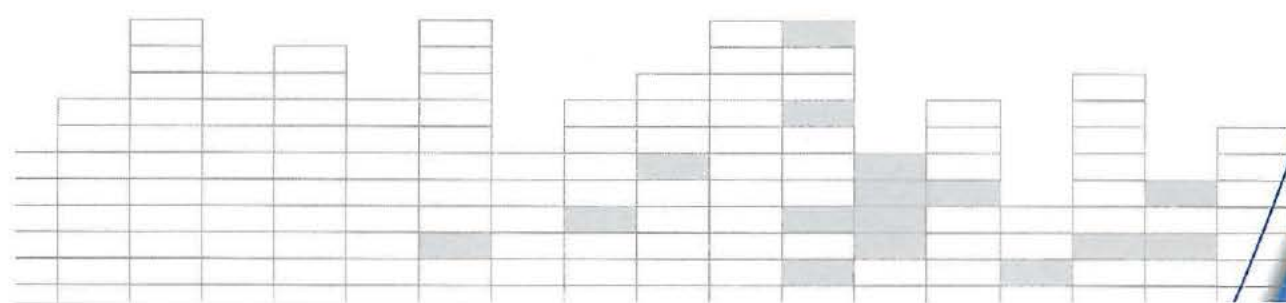
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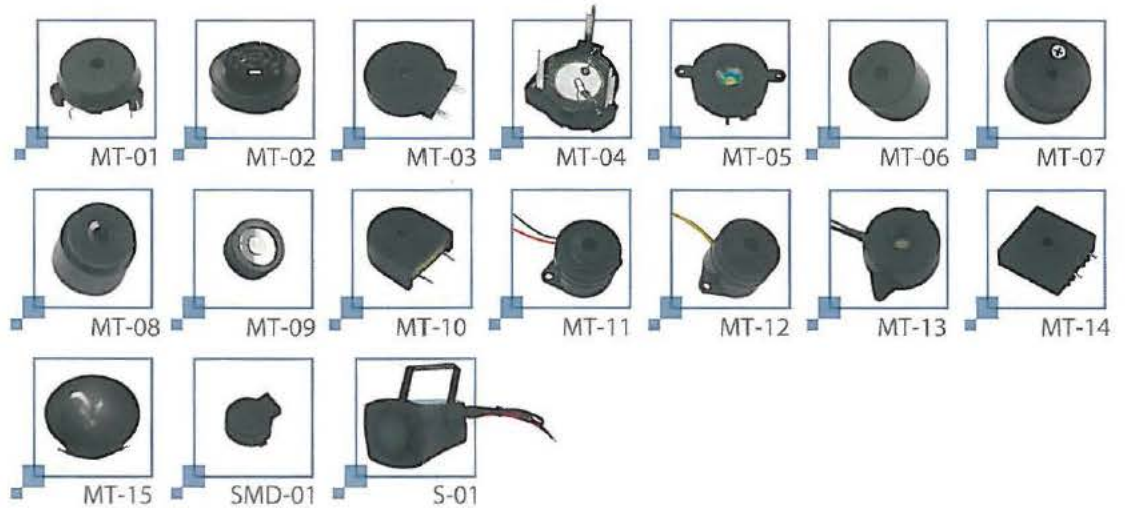
BZ-08



BZ-09



## ◀ Piezo Buzzer, Magnetic / SMD Transducer & Siren



### Piezo Buzzer & Magnetic Transducer

Dimension (mm) (Dia.) x (H) / (W) x (L)	Rated Voltage (V)	Operating Voltage (V)	Rated Current (mA)	Frequency (Hz)	SPL (dB)	P/N
9 x 5.5	1.5	1 - 2	80	2700	85	AL9055MTS-P15R
12 x 3.8	1.5	1 - 3	40	2048	75	AL12038MT-N15R
12 x 5.5	1.5	1 - 3	15	2048	70	AL12055MT-P15R
12 x 7.5	3	2 - 5	100	2048	80	AL12075MT-P-3R
14 x 5	3	1 - 4	35	2000	85	AL1405MT-P-3R
16 x 14	1.5	1 - 3	18	2048	80	AL16014MT-P15R
22 x 10.8	12	3 - 28	5	4500	90	AL2211PBSWE12R
22.5 x 12.7	12	3 - 20	15	3600	90	AL23013PBSP12R
23.5 x 9.5	12	3 - 20	15	3400	95	AL24095PB-P-12R
23 x 11	9	3 - 15	15	2800	80	AL23011PB-P-9R
24 x 25	10	1 - 30	10	3200	90	AL2425PTEP10R
25 x 8.3	8	1 - 30	3	200	74	AL25083PB-P-8R
29.5 x 6.6	24	1.5 - 28	20	3500	95	AL3007PBWE24XR
30 x 5	10	1 - 30	10	3000	90	AL3005PB-P-10R
30 x 24.5	24	3 - 28	20	3700	95	AL30245PBWE24R
30 x 20	3	2 - 5	9	3500	90	AL3020PBS-P-3R
41 x 14	2.83	1 - 10	-	22000	90	AL4114PT-P-90R
42 x 20.5	24	1 - 28	15	2900	85	AL42021PBSP24R
63.6 x 13.7	12	1 - 30	-	2200 - 4000	100	AL64014PBPE12R

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

### SMD Transducer

Dimension (mm) (W) x (L) x (H)	Rated Voltage (V)	Rated Current (mA)	Resonant Frequency (Hz)	SPL (dB)	P/N
8.5 x 8.5 x 4	3.6	80	2730	85	AL904SMDS-N36R
12 x 12 x 3	5	3	4000	75	AL1203SMD-N5R
14.3 x 14.3 x 10.6	10	10	4300	88	AL14106SMDN10R
17 x 17 x 5.3	5	2.5	4000	80	AL17053MD-N5R

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

### Siren

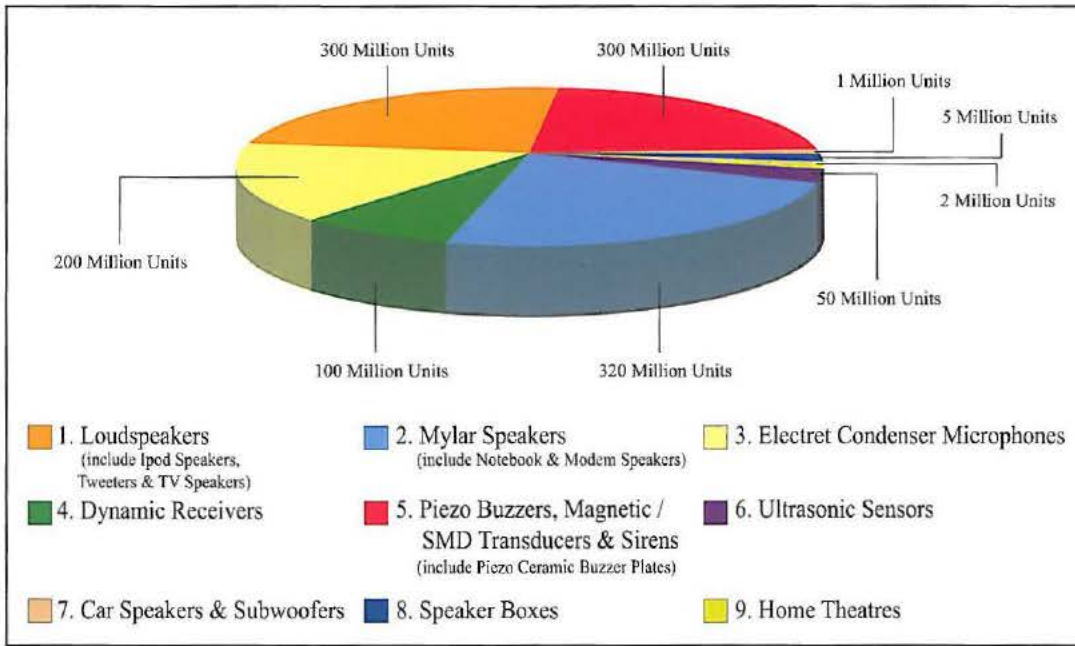
Dimension (mm) (Dia.) x (H) / (W) x (L)	Rated Voltage (V)	Operating Voltage (V)	Rated Current (mA)	P/N
44.5 x 40	12	7 - 15	200	AL4540S58HSW12R
53 x 30	12	6 - 15	250	AL5330HA-W-12R
62.4 x 55.8	12	6 - 15	350	AL6256S80HSW12R
99 x 110	12	6 - 15	250	AL99110HA-W-12R

Remarks: Random spec for reference, further details please visit our website or tailor-made upon customer's engineering request.

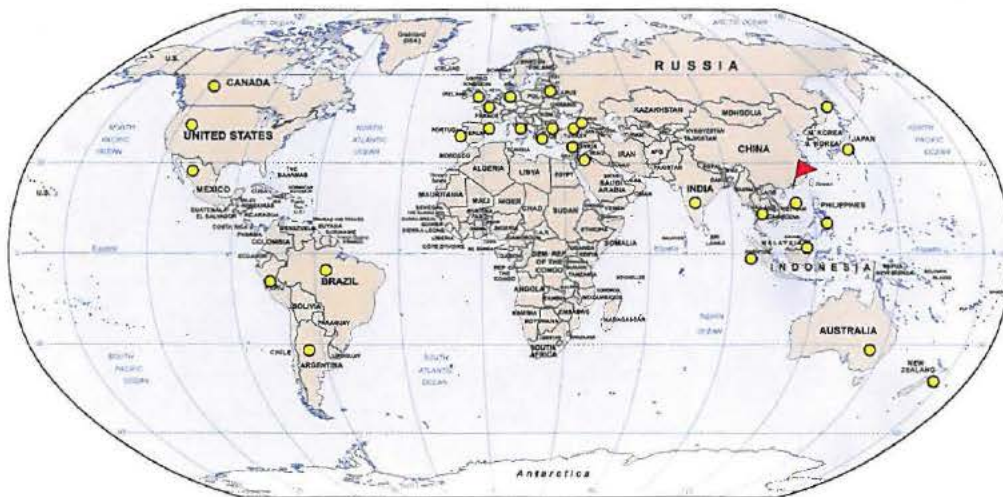
20 40 60 80 0 -80 -60



### Sales Volume For 2006



### Worldwide Market Distribution



Algeria • Argentina • Australia • Austria • Bangladesh • Belarus • Belgium • Brazil • Bulgaria • Canada • Chile • Colombia • Czech Republic • Denmark • Egypt • Finland • France • Germany • Greece • Hungary • India • Indonesia • Iran • Israel • Italy • Japan • Mainland China • Malaysia • Mexico • Netherlands • New Zealand • Norway • Pakistan • Paraguay • Philippines • Poland • Portugal • Romania • Russia • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa • South Korea • Spain • Sri Lanka • Sweden • Switzerland • Syria • Taiwan • Thailand • Turkey • UAE • Ukraine • United Kingdom • USA • Venezuela • Vietnam

### Major Industrial Fields

Audio Visual • Computer & Multimedia • Educational • Electronic & Electrical • Medical & Health • Military Equipment • Security • Telecommunication • Toys • Transport Equipment