



Dynamic loudspeaker

Without front cover

17 × 12 × 2.45 mm

GR1712S025YN8

Revision

Date	Version	Status	Changes	Approver
2019/10/18	V0.1	Draft	First release	AX

1. Scope

This document is the technical specification of Micro Dynamic Speaker.

2. Product Tape

Product number: GR1712S025YN8

3. Electro-Acoustic Specifications

Test Condition: $+25^{\circ}\text{C} \pm 2$, 25%~75% RH, 86~106Kpa, unless specified differently

No.	Parameter	Technical Specifications	Conditions	Unit
3.1	Sound Pressure Level	95 $\pm$ 2	2.83Vrms, 0.1m at 2kHz in 0.7cc back cavity, on baffle	dB
3.2	Maximum Continuous noise Power	1	in 0.7cc back cavity	W
3.3	Maximum Short Term Power	1.5	in 0.7cc back cavity	W
3.4	DC Resistance	7 $\pm$ 10%		Ω
3.5	Rated Impedance	8 $\pm$ 15%	@2kHz, 2.83Vrms	Ω
3.6	Resonance Frequency	870 $\pm$ 10%	2.83Vrms, in 0.7cc back cavity	Hz
3.7	Typical Frequency Response	See Fig 4-1	2.83Vrms, in 0.7cc back cavity	
3.8	Total Harmonic Distortion	See Fig. 4-2	2.83Vrms, in 0.7cc back cavity	
3.9	Rub& Buzz	See Fig. 4-3	2.83Vrms, in 0.7cc back cavity	
3.10	Displacement	0.3	2.83Vrms, in 0.7cc back cavity	mm
3.11	Listening condition	No noise	2.83Vrms,200-3.4kHz,2sec,in 0.7cc back cavity	
3.12	Polarity	When a DC source's "+" polarity is attached to speaker's "+" polarity, "-" polarity is attached speaker's "-" polarity,the membrane will move forward.		

Table 3-1 Electro-Acoustic Specifications

4. Typical curve

4.1 Typical Frequency Response

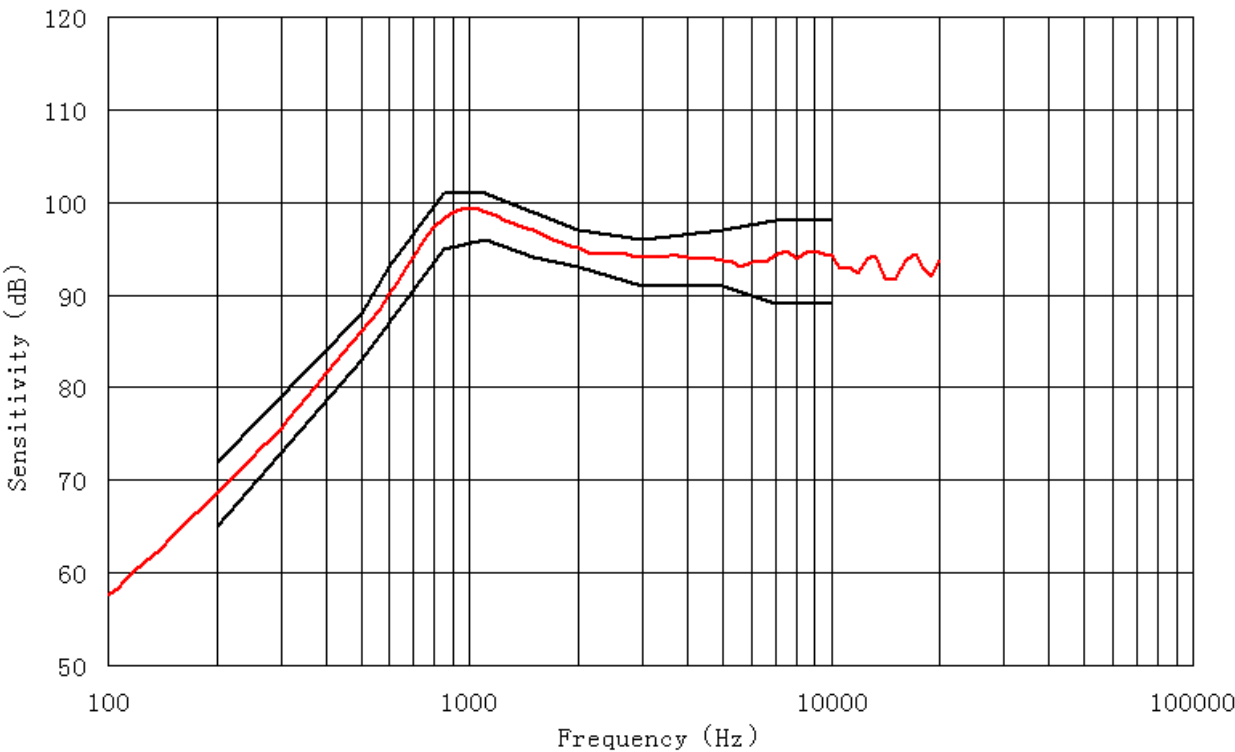


Fig. 4-1 Typical Frequency Response

	200	500	600	850	1100	1500	2000	3000	5000	7000	10000
FR-upper	72	88	93	101	101	99	97	96	97	98	98
FR-lower	65	83	87	95	96	94	93	91	91	89	89

Table 4-1 Frequency Response at Rated Power Limit Template

4.2 Total Harmonic Distortion

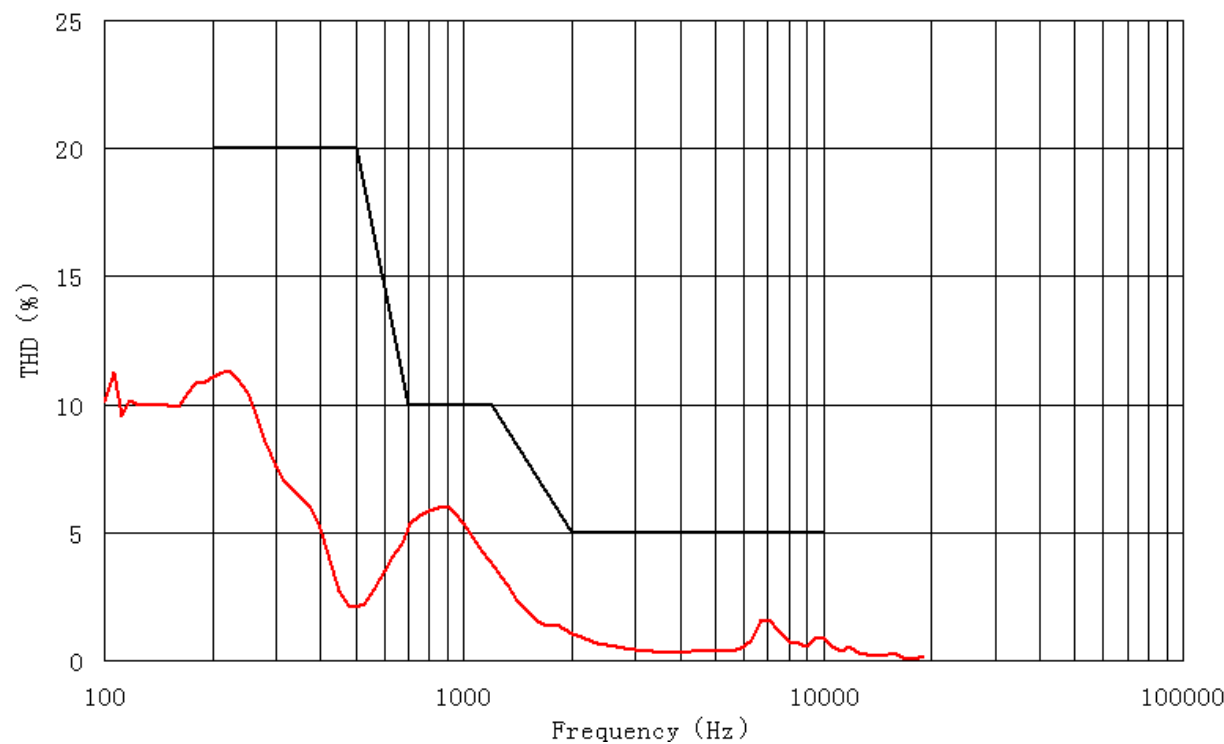


Fig. 4-2 Total Harmonic Distortion

	200	500	700	800	1200	2000	5000	6000	10000
2.83V THD	20	20	10	10	10	5	5	5	5

Table 4-2 THD at Rated Power Limit Template

4.3 Rub& Buzz

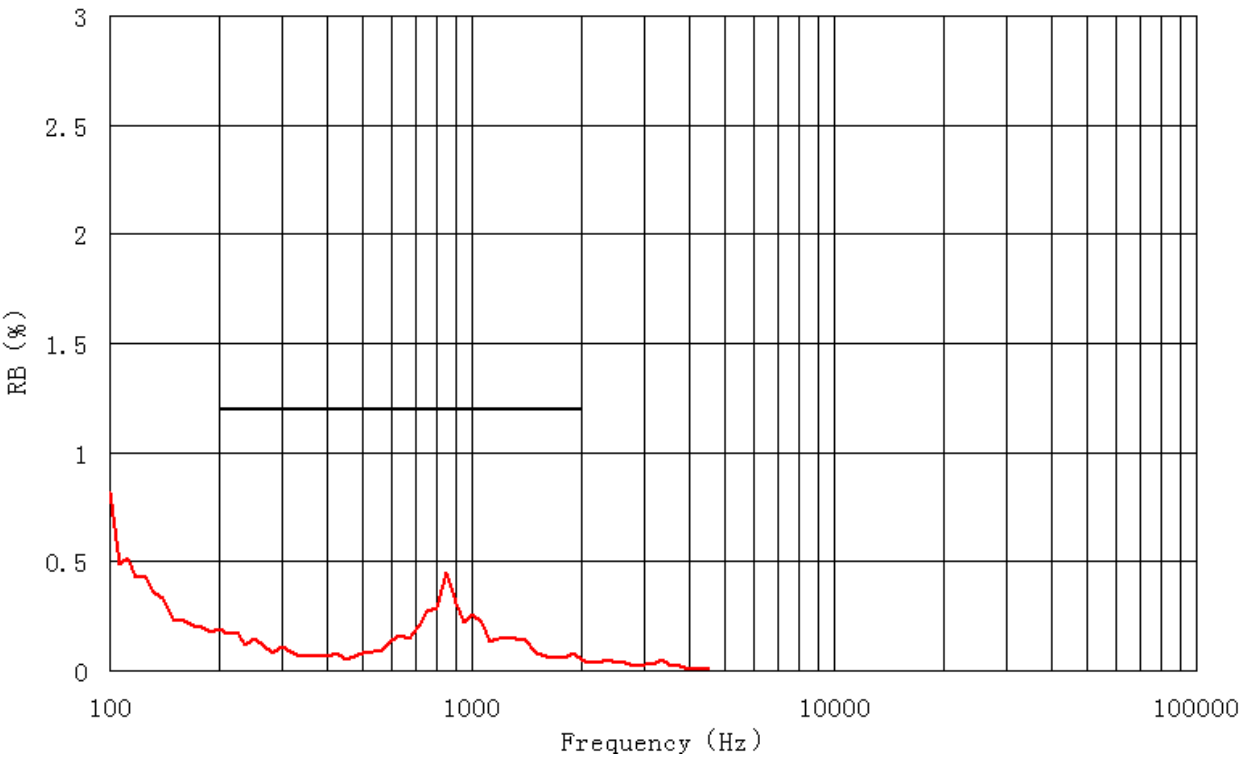


Fig. 4-3 Rub& Buzz

	200	300	2000
2.83V R&B	1.2	1.2	1.2

Table 4-3 Rub&Buzz at Rated Power Limit Template

5. Measurement System Setup

Test signal: Sine wave, Sweep,

Frequency Range: 100Hz-20kHz

Step: 1/12 octave

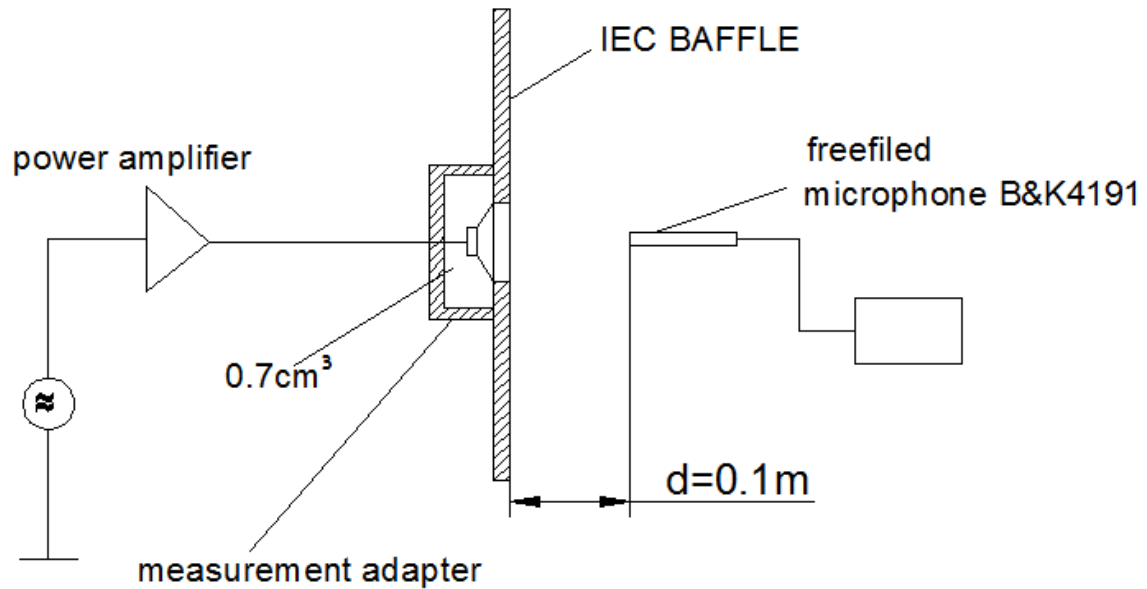
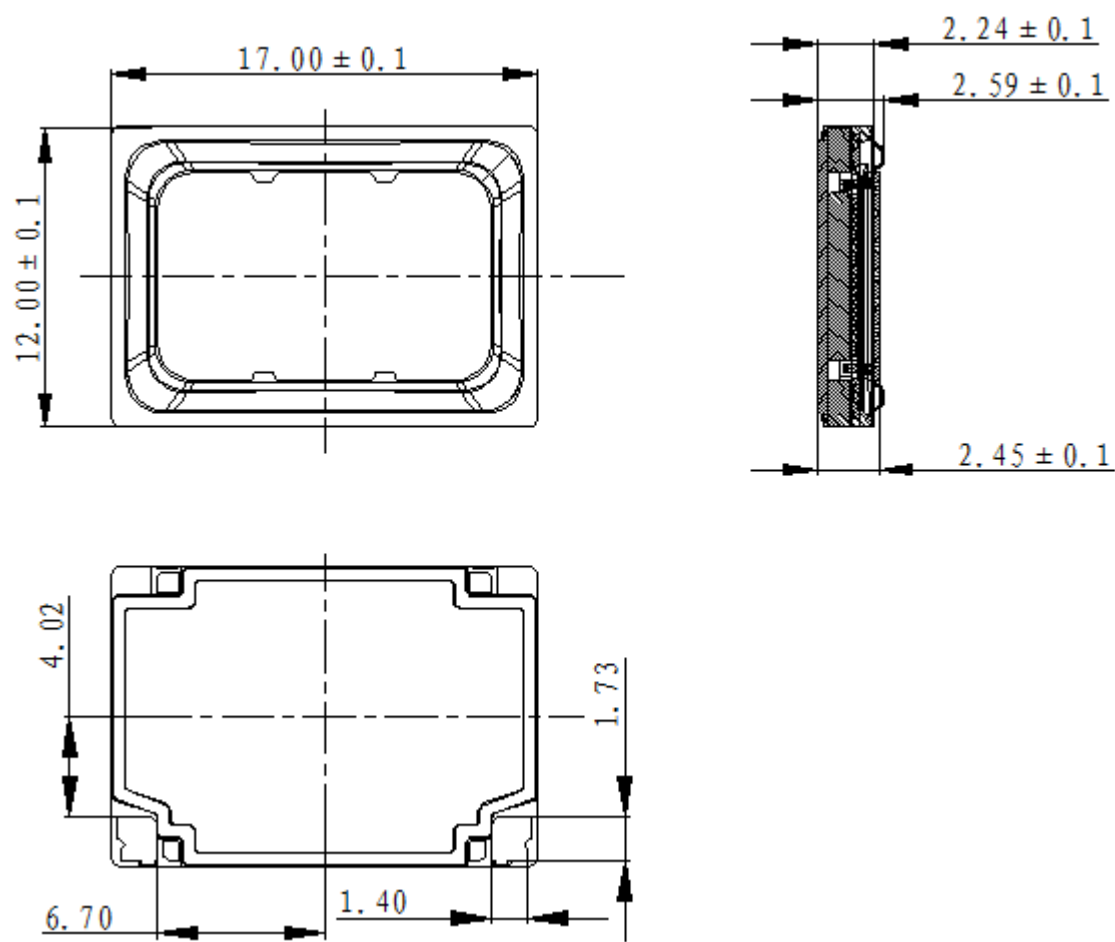


Fig. 5-1 Measurement System Setup

6. TS Parameter

Parameter	number	unit
M_m	0.110	g
F_0	254	Hz
S_d	1.32	cm^2
R_e	6.9	Ω
Z_e	8	Ω
Q_m	1.26	/
Q_e	1.16	/
Q_t	0.6	/
C_m	3.56	mm/N
R_m	0.14	kg/s
Bl	1.03	N/A

7. Mechanical Specifications



NOTE: Tolerance General Unless Otherwise Noted: $\pm 0.2\text{mm}$

Fig. 7-1 Dimension

8. Reliability Tests(in 0.7cc Box)

After reliability test, The samples shall be stored under normal conditions such as in ordinary rooms or laboratories. Unless otherwise noted, the recovery period shall be 3 hours at least before performance testing.

After reliability test, all samples must meet the requirements specified in section 3&4

8.1 Room Temperature Life

Input Voltage:	2.83Vrms
Input Source:	Simulated program signal (per IEC 268-1) with a peak to r. m. s ratio of 1.8 to 2. 2 in rated frequency range. Refer to IEC 268-5.
Duration:	96 hours
Quantity:	12pcs

8.2 Humidity Resistance

Temperature:	+65°C
Humidity:	85%RH
Duration:	168 hours
Quantity:	12pcs

8.3 High Temperature Storage

Temperature:	+85±2°C
Duration:	96 hours
Quantity:	12pcs

8.4 Low Temperature Storage

Temperature:	-40±2°C
Duration:	96 hours
Quantity:	12pcs

8.5 Temperature Shock

High Temp:	+85°C	30min
Low Temp:	-40°C	30min
Changeover Time:	20-30 seconds	
Total Cycle:	10cycles	
Quantity:	12pcs	

8.6 Drop Test

DUTs shall be mounted in a 180g fixture. Drop samples three times in each direction

Height:	1.5m
Reference surface:	Concrete floor
Duration:	18 times
Quantity:	12pcs

9. Weight

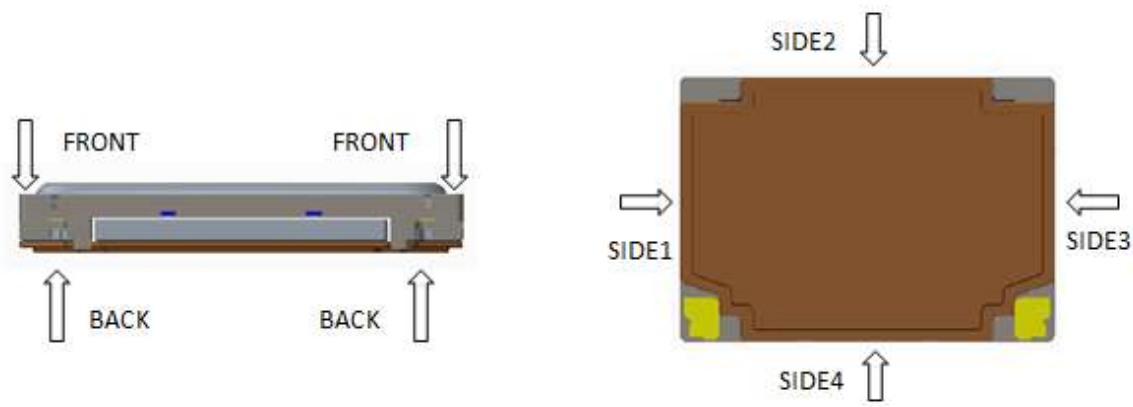
2.0±20% g/pcs

10.Packaging

TBD

11.Application Design Suggestions

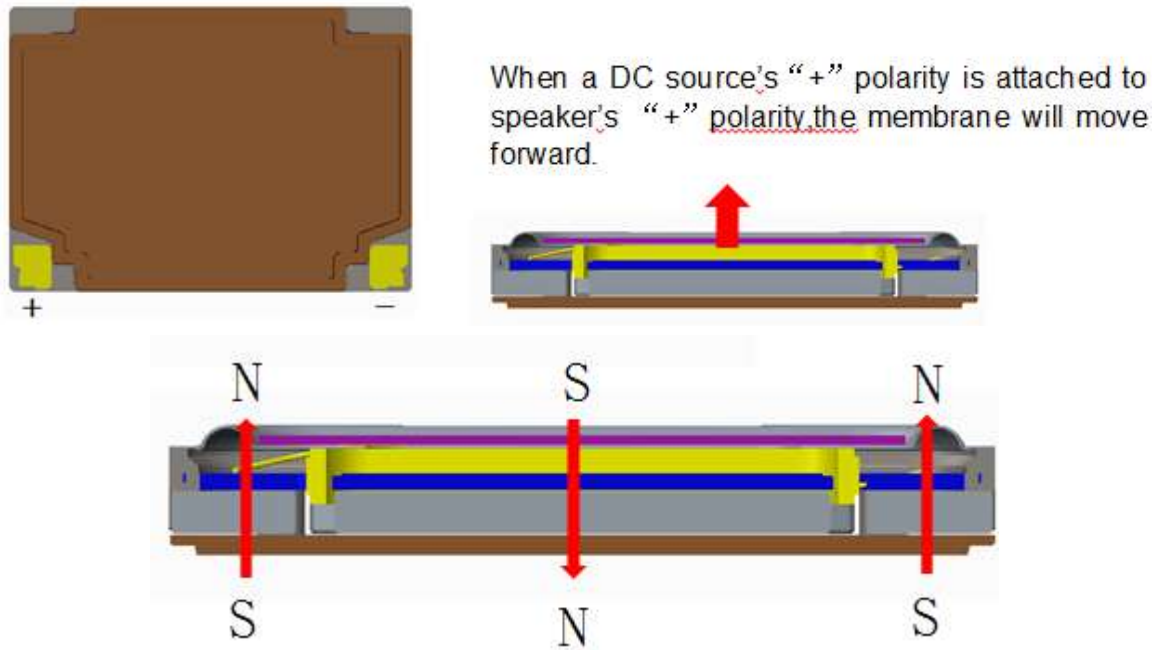
11.1 Permitted Force on Speaker



From	To	Maximum permanent force [N]	Max handing force[N]
Yoke	Front cover	10	60
Side 1	Side 3	10	10
Side 2	Side 4	10	10
membrane		0	0
Pull force of yoke		10	10

Table 11-1 Force on speaker

11.2 Polarity and Magnetic



12.Environmental Conditions

Storage Condition: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

Operation Condition: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$