



# Dynamic Loudspeaker

**53×53×28 mm**

**With wires & connector**

**CS50C28DN4GF**

## Revision

Date	Version	Status	Changes	Approver
2020/12/14	V0.1	Draft	First release	AX
2021/01/04	V0.2	Draft	Update impedances limits & outline dimension tolerances	AX

## 1. CONDITION.

Test and measurement will be carried out under normal condition of temperature within 5°C to 35°C, relative humidity within 45% to 85% and air pressure of 860 mbar to 1060 mbar.

Should uncertainly arise in data obtained from the above atmosphere, control of temperature at 20°C ± 2°C and relative humidity within 60% and 70%, with air pressure remaining unchanged, to be enforced.

## 2. ELECTRICAL AND ACOUSTICAL SPECIFICATION.

2-1	<b>Rated Input Power.</b>	<b>5W</b>
2-2	<b>Max Input Power.</b>	<b>10W</b>
2-3	<b>Rated Impedance.</b>	<b>4Ω ± 20%</b>
2-4	<b>Sound Pressure Level. (S.P.L)</b>	<b>101±3dB (AT 5W/0.1M, Average of 0.6, 0.8, 1.0, 1.2 KHz)</b>
2-5	<b>Resonance Frequency (Fo).</b>	<b>135±20%Hz</b>
2-6	<b>Frequency Range.</b>	<b>F0~20kHz.</b>
2-7	<b>Distortion</b>	Less than 5% at 1KHz input 0.1W
2-8	<b>Magnet</b>	Rare earth permanent (NdFeB) magnet Φ15*5mm mm
2-9	<b>Buzz, Rattle, etc.</b>	Should not be audible at 4.47V sine Wave between Fo to 20KHz
2-10	<b>Polarity</b>	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
2-11	<b>Appearance</b>	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
2-12	<b>Weight.</b>	<b>30g±8%</b>
2-13	<b>Temperature</b>	Operating temperature: -20°C to +50°C Storage temperature: -20°C to +60°C
2-14	<b>Waterproof</b>	IP54

### 3. MEASURING METHOD

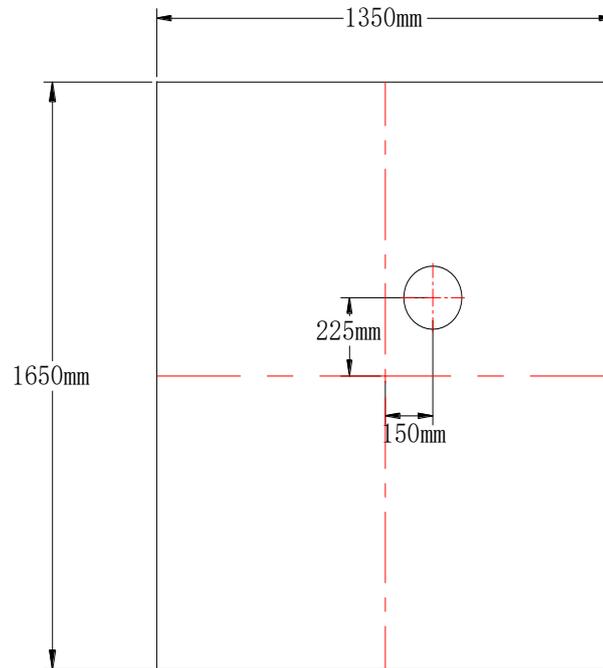


FIG.1

#### 3.1 Block Diagram For Measurement Method.

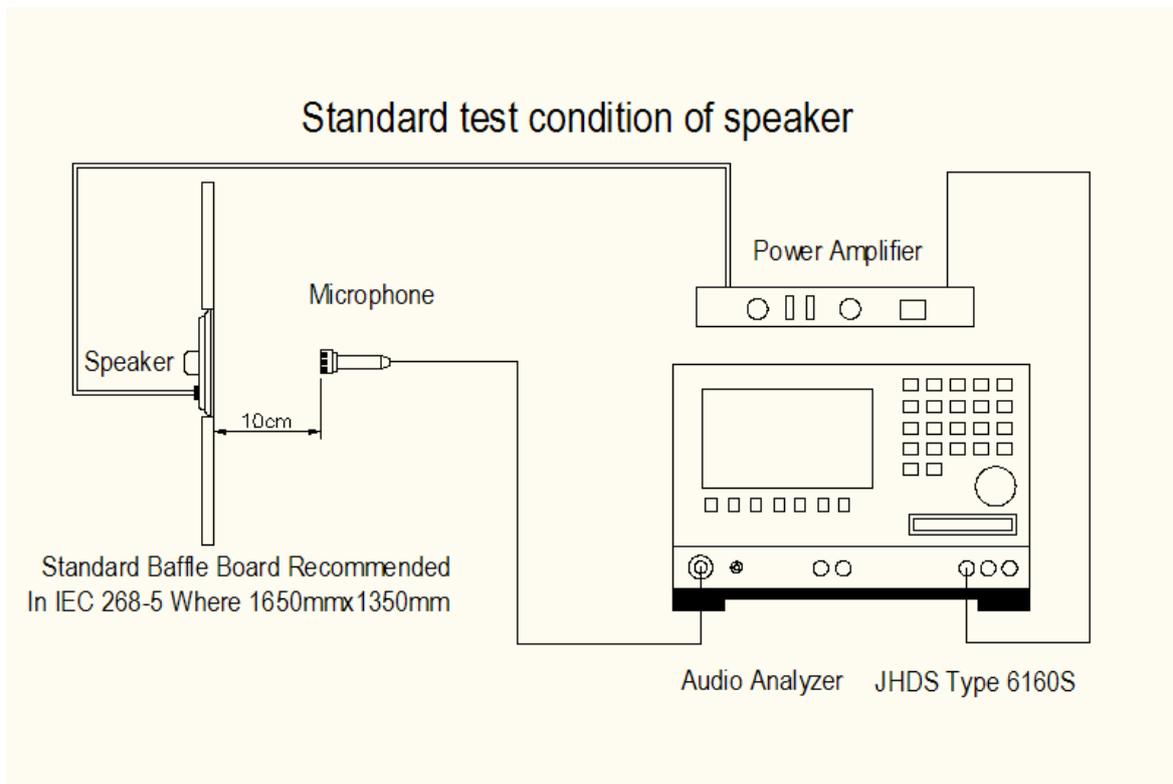


FIG.2

#### 4. Frequency Response :

The swept sine-wave frequency response of a Loud speaker should ideally not deviate more than indicated per Fig.3

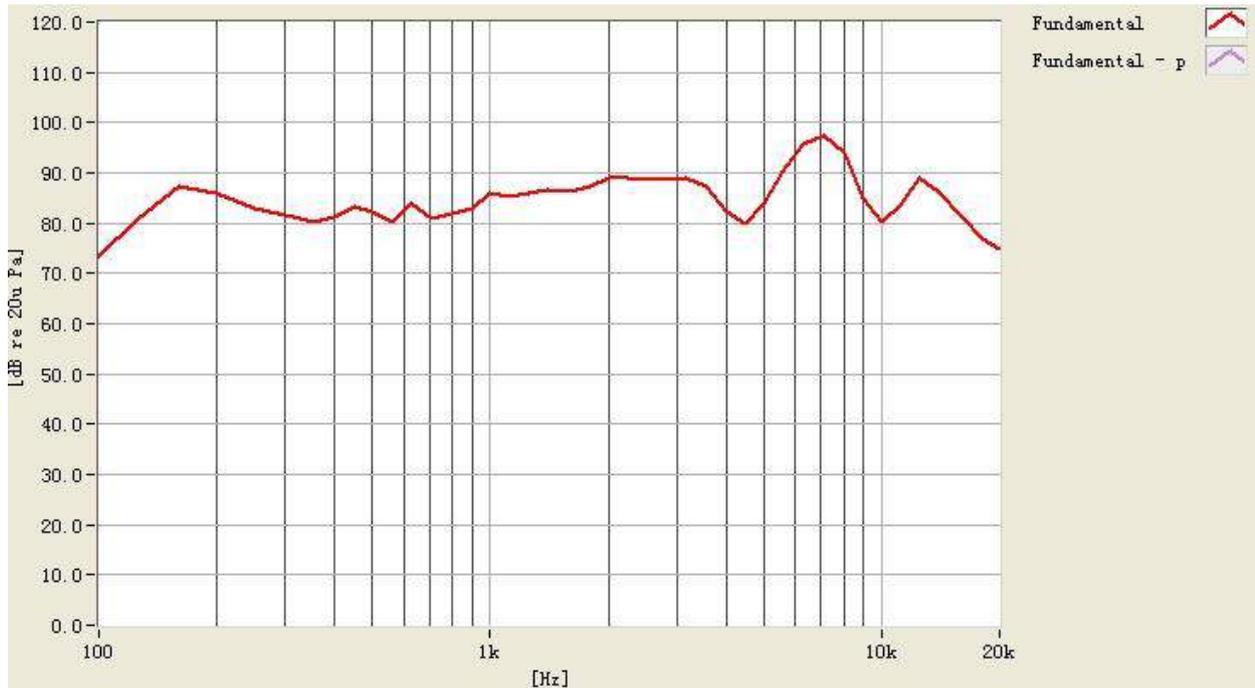
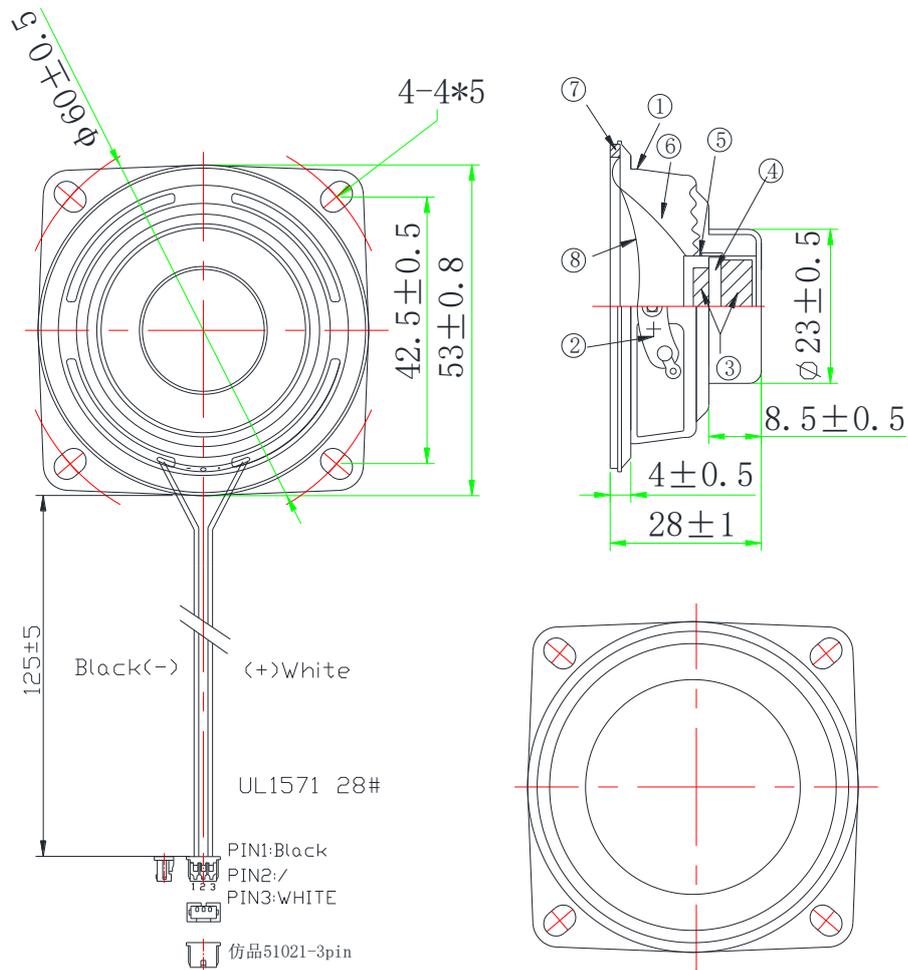


FIG.3

5. ENVIRONMENT TEST

ITEM		SPECIFICATIONS
01	High temp. Test	Keep 96 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+ 40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 92-95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	<p>The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;</p> <p style="text-align: center;"> <math>90 \sim 95 \% \text{ RH}</math>  <math>65^{\circ}\text{C}</math>  <math>25^{\circ}\text{C}</math>  <math>0.5\text{hr}</math>   <math>6\text{hrs}</math>   <math>0.5\text{hr}</math>   <math>5\text{hrs}</math> </p>
05	Thermal cycle test.	Low temperature: $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , temperature: $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , cycle: 1 hour/cycle each, and then keep 5 cycles in a room.
06	Vibration	10~55~10Hz sin-wave sweep 15min. 5G(constant) X,Y, Z 3 direction. 2 hours each, total 6 hours.
07	Fix drop test	Fix on jig. Then drop from 152cm height to the concrete floor X,y, z 6 direction. 5 times each, total 30 times.
08	Free drop test	Free drop from 100cm height to the concrete floor X,Y, Z 6 direction. 1 times each, total 6 times.
09	Load test	Rated Power White noise is applied for 96 hours
10	Max Power test	Max power 1 min. on - 2 min. off 10 cycles.
11	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
<p><b>Criterion :</b>  <b>After these test , the change of S.P.L shall be within <math>\pm 3 \text{ dB}</math></b></p>		

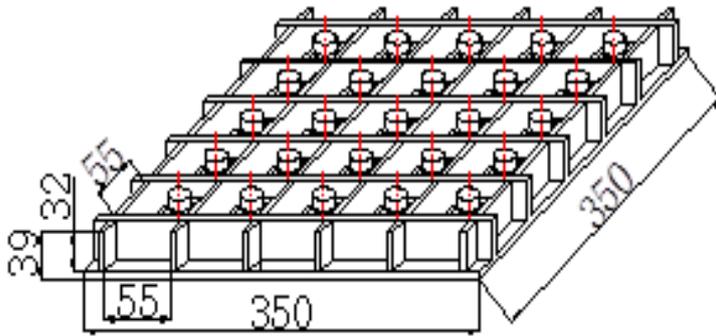
6.Dimensions



8	CAP	1	PET	(Black)
7	Gasket	1	Paper	
6	Diaphragm	1	Rubber+Paper Cone	
5	VOICE COIL	1	KSV+Cu	
4	Plate	1	SPCC	
3	Magnet	1	NdFeB	
2	PCB Terminal	1	Paper+meter	
1	Frame	1	Spcc	(Black)
The material must be meet to GU-001				
PART NO.	PART NAME	Q'TY	MATERIAL	REMARK

Unit:mm Tol:±0.5

## 7.Packing



1. Each clapboard 25pcs,  
Each carton 10 clapboards,  
250pcs/carton  
N.W: 7.5 KG, G.W:9.5 KG
2. Corrugated paper: 350\*350mm 2 pcs
3. Carton size:370\*370\*420mm 1 pcs

