



Loudspeaker
With screw holes
& waterproof
78 × 41 mm

CS78S41AF4A

Revision

Date	Version	Status	Changes	Approver
2019/4/3	V0.1	Draft	Initial release	AX

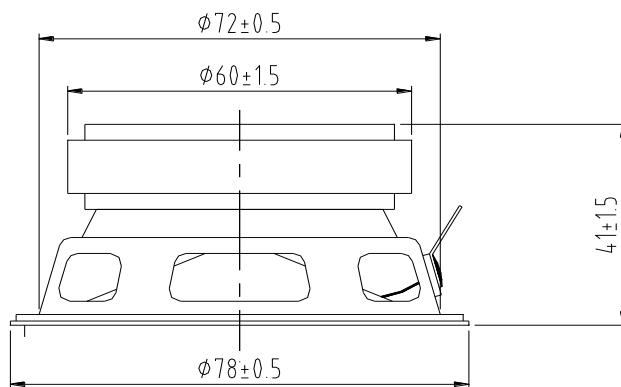
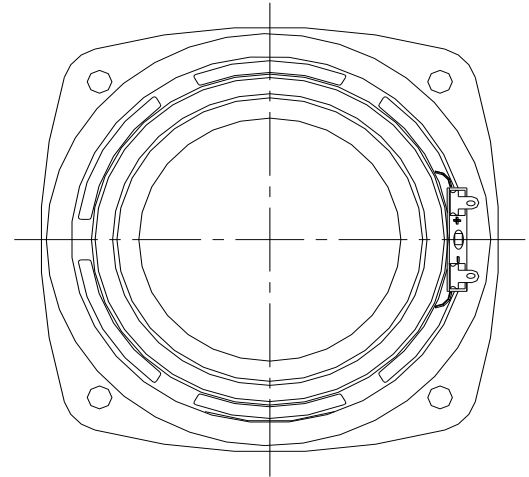
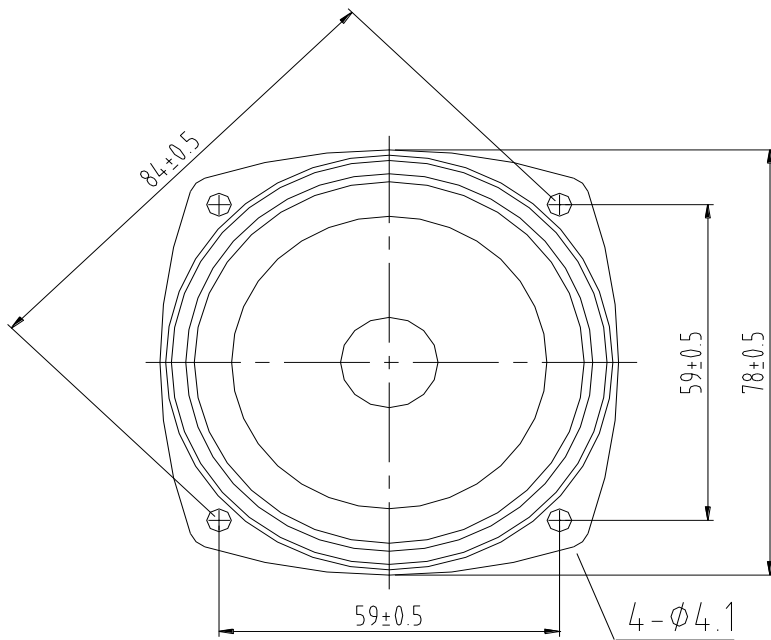
Parameter	Conditions/Description	Values	Units
Rated Input Power		10.0	W
Max Input Power		15.0	W
Rated Impedance		4±15%	Ω
Sound Pressure Level (S.P.L.)	at 0.6K 0.8K 1.0K 1.2K Hz in 1.0W/1.0M average (0dB SPL=20μPa)	83±3	dB
Resonant Frequency (Fo)	at 1.0 V	220±20%	Hz
Frequency Range	Output S.P.L. -10dB	Fo~10K	Hz
Distortion	at 1K Hz, input 0.1W,	< 5%	-
Magnet	Ferrite	Φ60*32*12	mm
Buzz, Rattle, etc.	must be normal at sine wave between Fo ~ 4K Hz	6.32	V
Polarity	cone will move forward with positive dc current to "+" terminal		
Weight		376±8%	g
Operating Temperature		-40~+85	°C
Waterproof Rating		IPX7	

Notes: Above Measuring condition under temperature :15~35°C R.H. 25~75%. Accordig to standard GB/T9396-1996

MECHANICAL DRAWING

Units: mm

Tolerance: $\pm 0.5\text{mm}$



CONSTRUCTION DETAIL

NO	零件 Component	材质 Material
1	压边 Gasket	EVA
2	盆架 Frame	冷轧钢板 SPCC
3	弹波 Damper	布 Cloth
4	音圈 Voice Coil	铝膜 ASV+Cu
5	华司 Washer	冷轧钢板 SPCC
6	磁铁 Magnet	铁氧体 Ferrite
7	T 铁 T-Yoke	冷轧钢板 SPCC
8	鼓纸 Cone	橡胶边纸盆 Rubber+Paper
9	帽子 Dust cap	纸锅底帽 Paper
10	接线板 Terminals	纸+铁 Paper+Steel

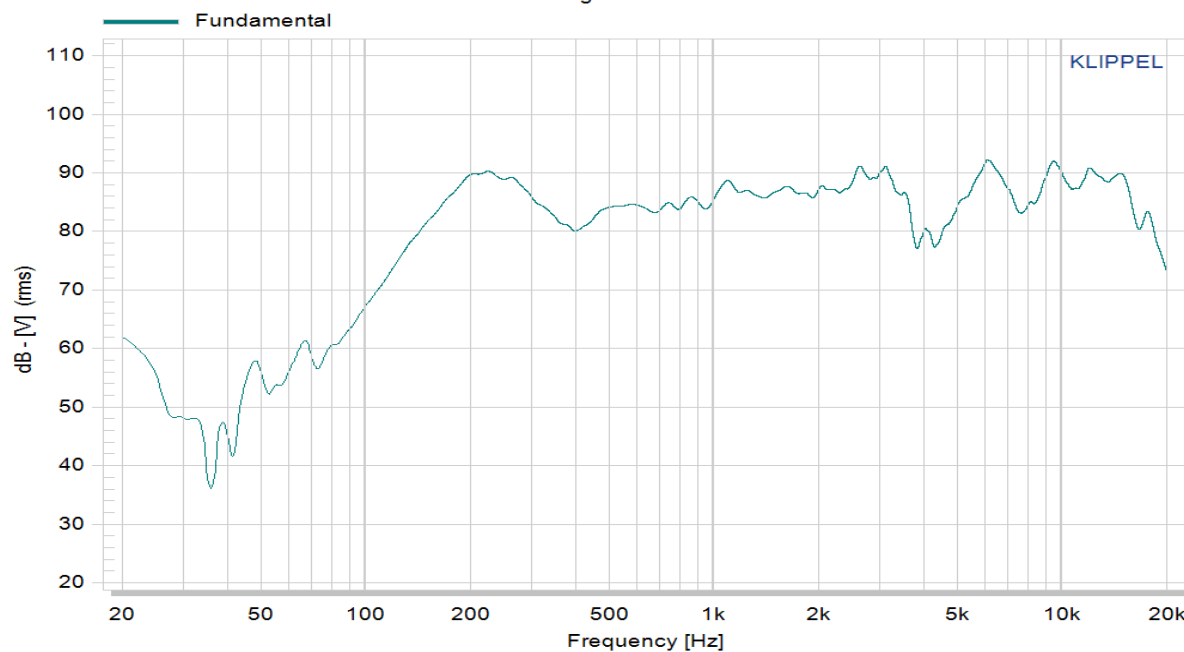
RESPONSE CURVES

Frequency Response Curve

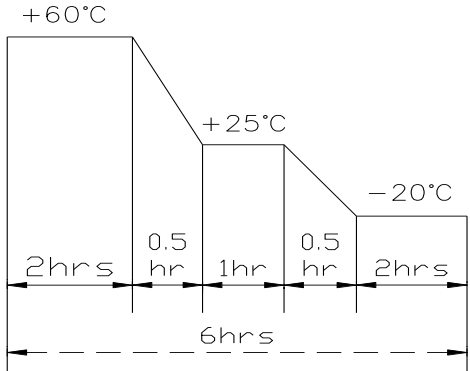
Test condition:1.0W/1.0M,

Fundamental + Harmonic distortion components

Signal at IN1



RELIABILITY TEST

1	Reliability Test Performance	After any following test, parts should conform to original performance within ± 3 dB tested with Rated Power, after 6 hours of recovery period.
2	High Temperature Test	96 hours at $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$
3	Low Temperature Test	96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$
4	Humidity Test	$+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Relative Humidity(RH)90~95% 96 Hours
5	Temp./Humidity Cycle	The part shall be subjected 5 cycles. One cycle shall be 6 hours and consist of 
6	Vibration Test	Frequency: 10~55~10Hz Oct/min Amplitude: 1.5mm Duration: 2 hours each of 3 perpendicular directions
7	Drop Test	Drop the speaker contained in normal box onto the surface of 40mm thick board 10 times from the height of 75cm
8	Operation Life Test	Must perform normal with program White-Noise source at Rated Power for 96 Hours
9	Termination Strength	Apply 3.0N(0.306kg) to each terminal in horizontal direction for 30 seconds; Apply 2.0N(0.204kg) to each terminal in vertical direction for 30 seconds;

MEASURING METHOD

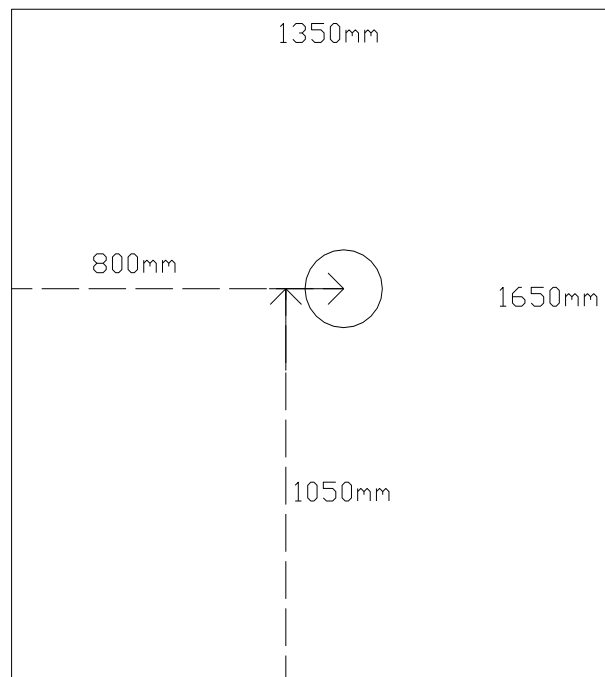
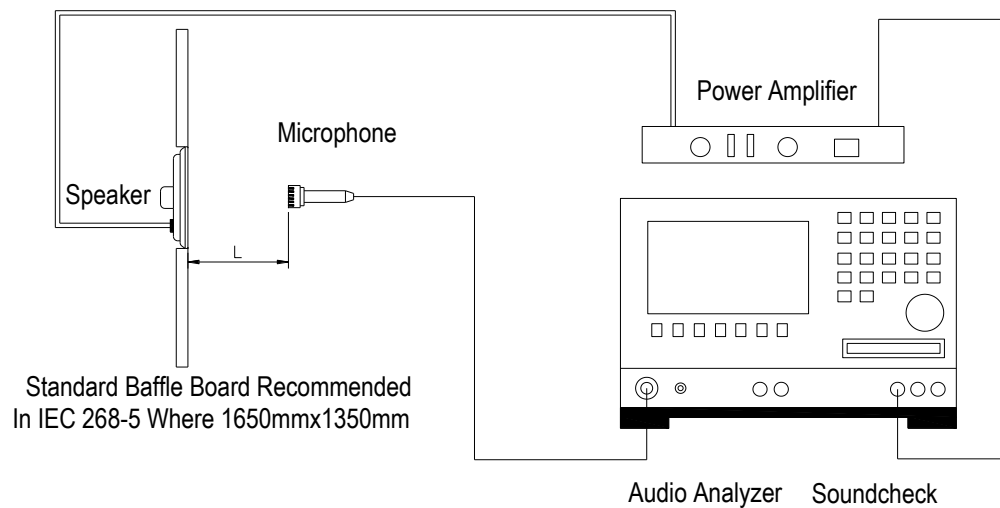


Fig. 1 Block Diagram for Measurement Method

Standard test condition of speaker

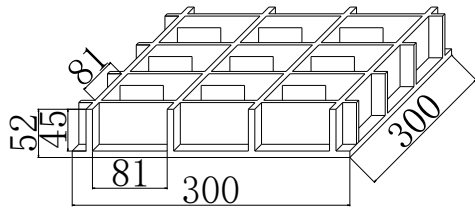


$L=100\text{cm}$

Fig. 2 Speaker Test Condition

PACKAGING

units: mm



1. Each clapboard 9 pcs,
Each carton 3 clapboards,
27 pcs/carton
N.W:10.2 KG, G.W:12.2KG
2. Corrugated paper: 300*300mm 1 pcs
3. Carton size: 320*320*190mm 1 pcs

