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# SPECIFICATION FOR APPROVAL

Product	DYNAMIC SPEAKER
Part No.	AS-36179B04-A4T
Customer Approval	

Approved By	Checked By	Made By



A & B Components

<http://www.speaker-tw.com>

# 1. SPECIFICATION

AS-36179B04-A4T

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 36mm	
03	Rated Input Power	3.0 W	
04	Max. Input Power	5.0 W for 1 minute	
05	Impedance	4 Ω ± 15% at 1KHz 1V	
06	Resonance Frequency (Fo)	350 Hz ± 20% at Fo, 1V	
07	Sound pressure level	70 dB(1.0W/1.0M) ± 3 dB	at AVE 0.8, 1.0, 1.2, 1.5 KHz.
		94 dB(3.0W/0.1M) ± 3 dB	
08	Frequency Range	Fo – 20 K Hz	
09	Total Harmonics Distortion	Max 10 % at 1 KHz, 1.5V.	
10	Voice Coil	Diameter 13.5 mm	
11	Magnet	Rare earth permanent ( NdFeB ) magnet Φ12.5x3 mm	
12	Weight	14.5g ± 4.5g	
13	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
14	Operation Test	Must be normal at program source 3.0W	
15	Buzz, Rattle, etc.	Should not be audible at 3.46V sine wave between Fo to 20KHz	
16	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
17	Terminal Strength	Capable of withstand 1kg load for 15 seconds without resulting in any damage or rejection.	
18	Temperature	Operating temperature: -20°C to +60°C	
		Storage temperature: -30°C to +70°C	

## 2. MEASURING METHOD

### 2-1 .Test Condition

#### STANDARD

Temperature : 15 ~ 35°C

Relative humidity: 45% ~ 85%,

Atmospheric pressure: 860mbar to 1060mbar.

#### JUDGEMENT

Temperature : 20±3°C

Relative humidity: 60% ~ 70%,

Atmospheric pressure: 860mbar to 1060mbar

### 2-2. Standard Test Fixture

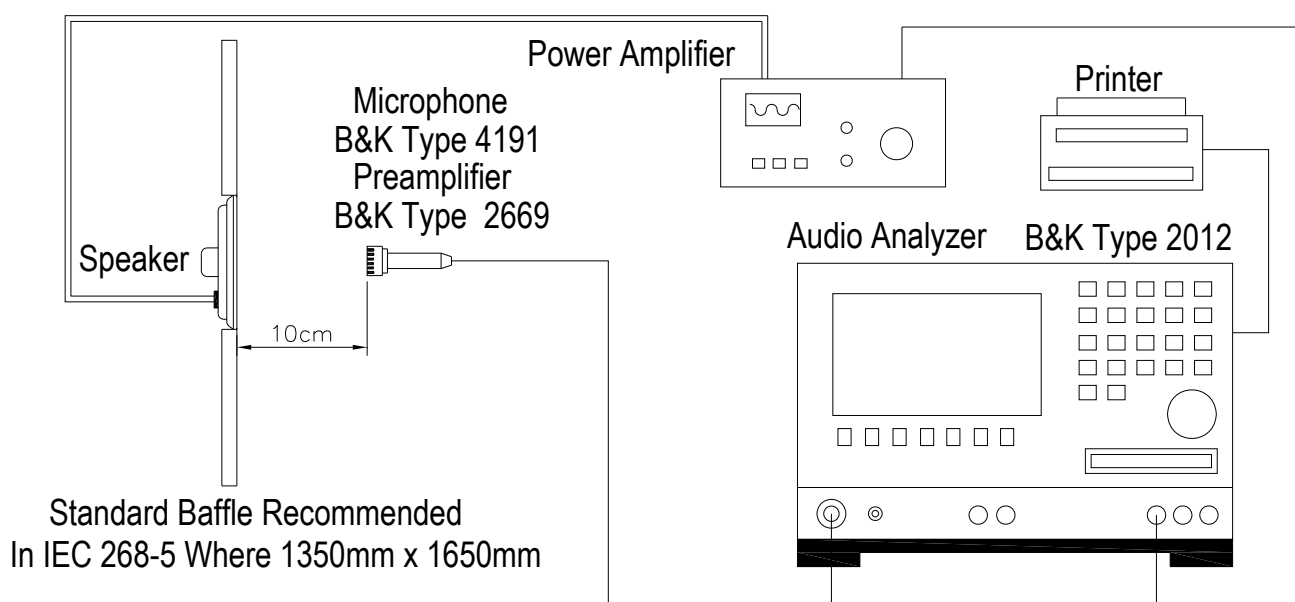
1. Input Power: 3.0 W ( 3.46 V)

2. Zero Level : -dB

3. Mode: SPEAKER

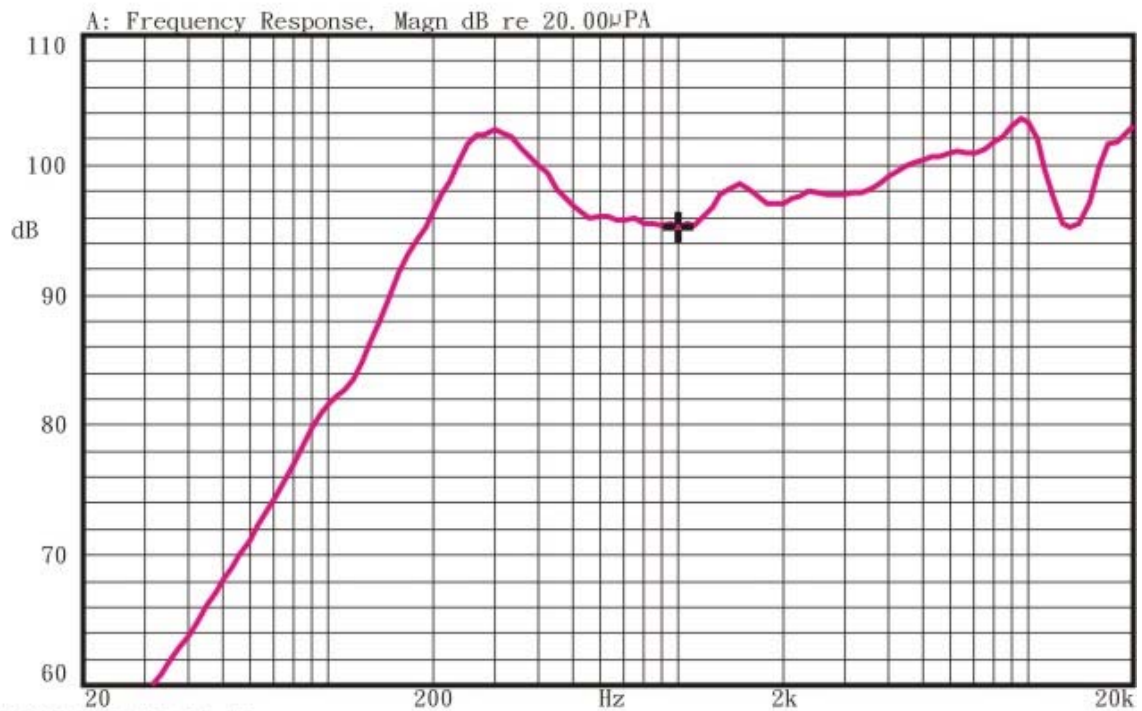
4. Potentiometer Range: 50dB

5. Sweep Time: 0.5sec



## 2-3. Frequency Response Curve

X:1.0000kHz \*Y:95.24dB ZA:Live Curve SSR Fund.

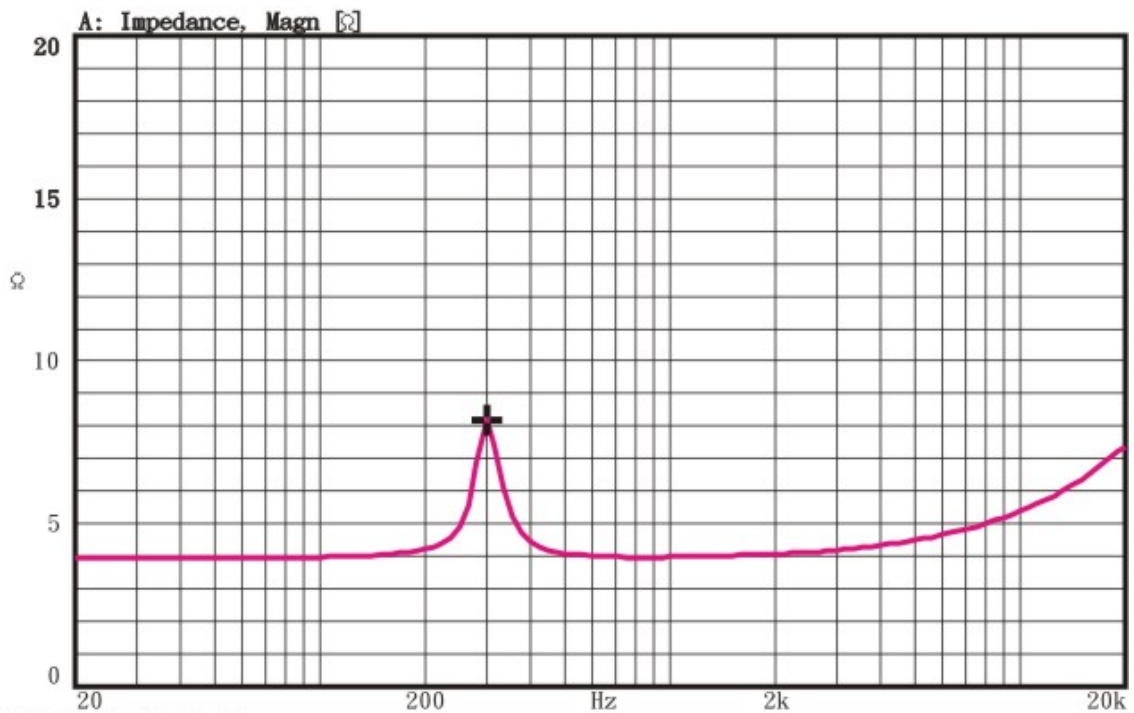


Mode: SPEAKER



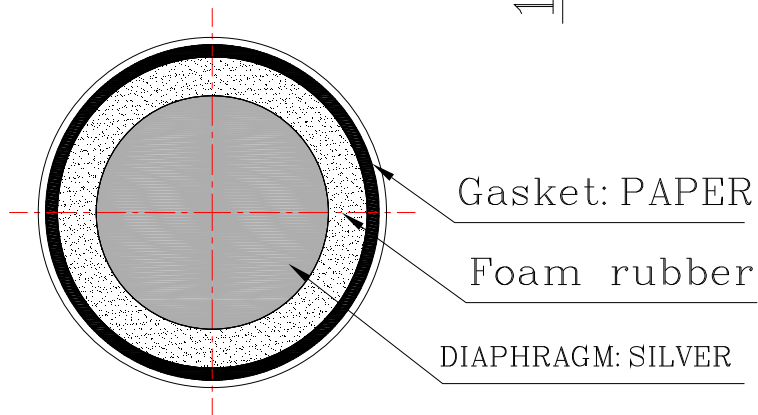
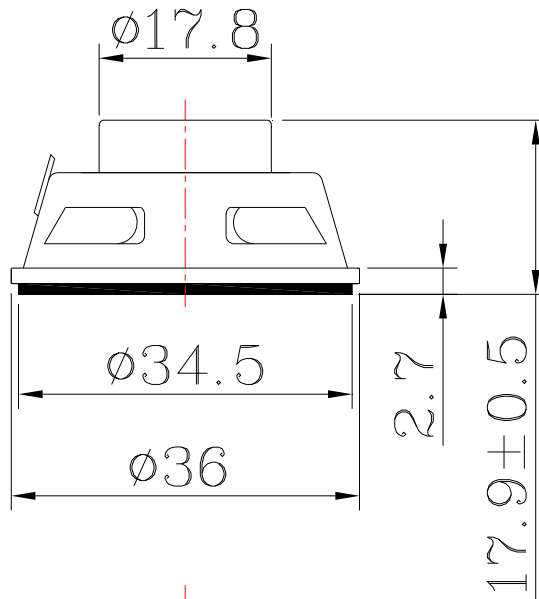
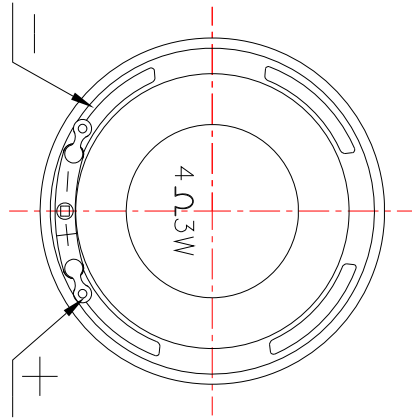
## 2-4. Impedance Curve

IMPEDANCE MEASUREMENTS: Measurement of Impedance  $Z(j\omega)$   
X:300.00Hz Y:8.178 $\Omega$  ZA:Live Curve Impedance



Mode:  $Z(j\omega)$





RoHS

TITLE: DYNAMIC SPEAKER		DRAWN: <i>Jerry</i> 2012/09/04	SCALE: 2:1	SHEET: 1:1
PART NO. AS-36179B04-A4T	2	DESIGNED: R&D Dept.	UNITS: mm	
DWG NO. TR-036CNC-R		CHECKED:	TOLERANCE $\pm 0.5$	
	REV	APPROVAL:	UNLESS OTHERWISE SPECIFIED:	
		MATERIAL: ALLOY	ONE PLACE DECIMAL $\pm$ ***	
			TWO PLACE DECIMAL $\pm$ ***	
			THREE PLACE DECIMAL $\pm$ ***	

*A & B Components*

## 4. RELIABILITY TESTS

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of <div style="text-align: center;"> <p>65°C 25°C 0.5hr 6hrs 0.5hr 5hrs 90 ~ 95 % RH</p> </div>
05	Thermal cycle test.	Low temperature: $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , temperature: $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , 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 time 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 15 seconds without resulting in any damage or rejection.

Criterion :

1. After testing any of the above reliability test items, the change of S.P.L shall be within  $\pm 3$  dB.
2. If you need more information, please contact our technology department, thank you.

## SOLDERING CONDITION

Recommend using constant searing-iron in temperature range  $360\pm 5^{\circ}\text{C}$ .

Soldering time 2 seconds.