



PN: D0138004PF001AKR

DWG #:DB20-009 Rev 0.3

## SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: D0138004PF001AKR

DESCRIPTION: 138mm x 58.3 mm/4ohms/30W/RoHS

RFQ: QB19194/QB21186

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	CS	CXQ	
DATE	13-Oct-2022	14-Oct-2022	

CUSTOMER APPROVAL	SIGNATURE	DATE

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**REVISION HISTORY**

Rev Level	Date	Description	Page #	Changed By
0.0	25-Mar-2020	Original	All Pages	RS
0.1	17-Jun-2022	Updated Impedance, F <sub>0</sub> , Mechanical drawing	Pages 1, 2, 6	CS
0.2	29-Jul-2022	Updated Buzz and Rattle 5.4, Reliability 6.4, 6.5, added Production watermark	All Pages	CS
0.3	13-Oct-2022	Updated Part number	All Pages	CS

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**1. Scope**

This document contains the required electrical, acoustic, mechanical and reliability information for a loudspeaker.

**2. Environmental Requirements**

This loudspeaker including all components, solder joints and glue must be RoHS compliant and meet the customer’s known requirements for banned or restricted substances.

**3. Environmental test conditions**

	Standard Conditions	Preferred Conditions
Temperature	15 to 35°C	20 ± 2°C
Humidity	25 to 75%	63 to 67%
Air Pressure	86 to 106kPa	86 to 106kPa

Note: Conditions for Acoustic tests only

**4. Electrical Requirements**

**4.1 Rated Impedance**

4Ω ±25% (@280Hz/1Vrms)

**4.2 Rated Power**

30W (RMS)

**4.3 Max Power**

40W (RMS)

**4.4 Polarity**

When a positive DC current is applied to the positive terminal of the speaker the diaphragm shall move forward.

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## 5. Acoustical Requirements

### 5.1 Sound Pressure Level

86 ± 3dB (on IEC 268-5 Baffle in anechoic chamber @ 1.0W/1.0m avg. @ 0.5, 0.6, 0.8 and 1.0 kHz)

### 5.2 Resonant Frequency (F<sub>0</sub>)

85 ± 20% Hz @ 1V<sub>rms</sub> constant voltage - free air

### 5.3 Frequency Range

F<sub>0</sub> to 20 kHz (SPL -10dB) @ 1.0W/1.0m

### 5.4 Buzz and Rattle

No audible buzzing shall occur at ≥0.3m distance when 15.2 W (7.8 V<sub>rms</sub>) sine wave from F<sub>0</sub> to 5 kHz is applied to the speaker. Sweep time is 3 cycles/sec.

\*See Test circuit (Fig 1), Frequency Response (Fig 2) and Impedance (Fig 3) below.

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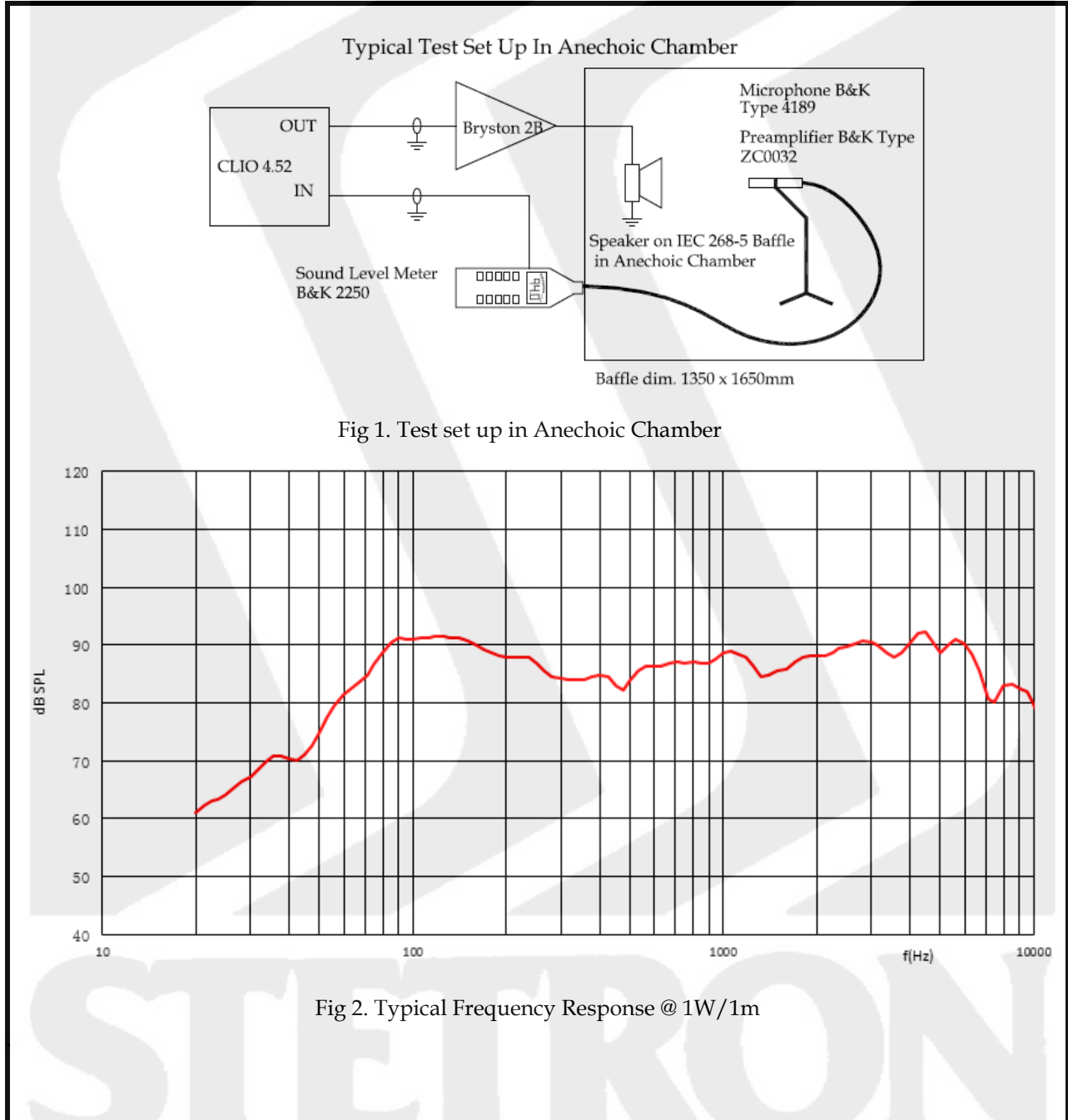
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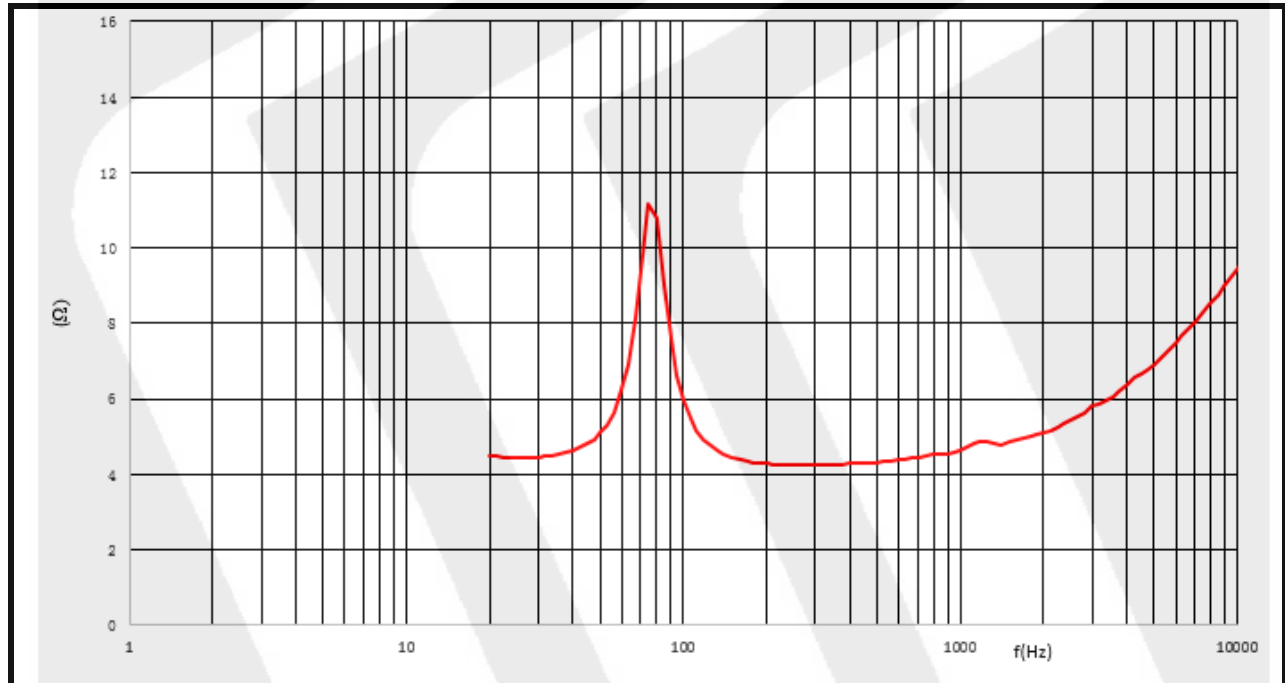


Fig 3. Typical Impedance Curve

## 6. Reliability

### 6.1 High Temperature

Speakers are exposed in the high temperature chamber at  $+70 \pm 3^\circ\text{C}$ , R.H  $50\% \pm 5\%$  for 96 hrs.

### 6.2 Low Temperature

Speakers are exposed in the low temperature chamber at  $-25 \pm 2^\circ\text{C}$  (humidity random) for 48 hrs.

### 6.3 Humidity

Speakers are exposed to  $+40 \pm 3^\circ\text{C}$ , R.H  $95\% \pm 5\%$  for 96 hrs.

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\*Note: After any of tests 6.1 to 6.3 leave speakers for 1 hr at room temperature.

Speakers must pass pure sound listening and appearance tests.

#### **6.4 Rated Power**

Speakers are exposed continuously to 30W white noise with 50Hz low cut filter for 8 hrs in a test environment with temperature of  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

#### **6.5 Max Power**

Speakers are exposed to 40W white noise for 1 minute on and 2 minutes off for a total of 10 cycles in a test environment with temperature of  $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

**Note:** After test 6.4-6.5 leave speakers at room temperature for 1 hour. Speakers must pass pure sound listening, appearance test and the frequency response within the frequency range specified in 5.3 should not deviate by more than  $\pm 3\text{dB}$  from the initial frequency response.

#### **6.6 Vibration Test**

Speakers are subjected to a vibrating procedure with vibrating frequency of 10-55-10Hz in X, Y and Z directions. The maximum vibration amplitude is 3mm and test duration is 30mins. After test the appearance and internal structure of the speaker should be normal.

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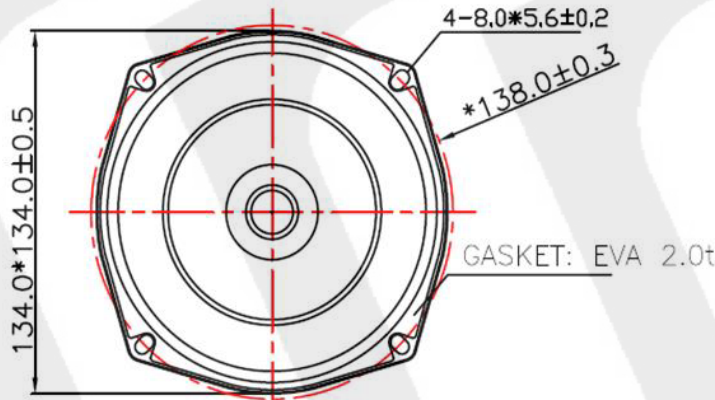




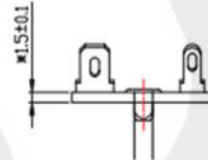
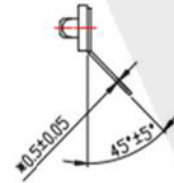
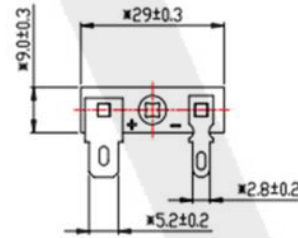
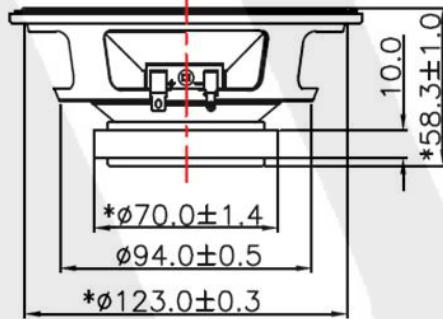
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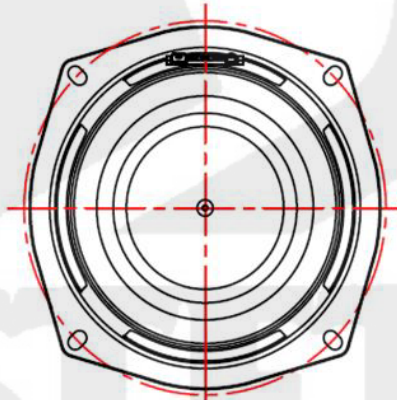
### 7. Mechanical Layout and Dimensions



Speaker Marking  
STETRON  
DB20-009  
YYWWD



Speaker Terminal



$L \leq 5$	±0.05
$5 < L \leq 30$	±0.15
$30 < L \leq 120$	±0.20
$120 < L \leq 250$	±0.30

All dimensions in mm

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