soberton inc.

DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-2004Y

Release | Revision: A/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker.

Speaker Specification	
Item	**Specification**
Dimensions	Ø20.0 x 4.0mm
Mylar Thickness	0.05mm
Magnet	8.0 x 1.7mm N38
Voice Coil	8.7 x 8Ω
Nominal Impedance	8Ω±15% at 2.0KHz 1.0V
Rated Input Power	0.8 W
Max. Input Power	1.0 W
Mean Sound Pressure Level (S.P.L)	88±3dB (Input: 0.1W/0.1M) at 1.0, 1.2, 1.5, 2.0KHz in average
Frequency Range	f0~20,000Hz
Distortion	10% Maximum at 2.8V Rated Input At 2.0KHz
Buzzes & Rattles	2.0 V
Lowest Resonance Frequency (f0)	800±20%Hz
Load Test	White Noise 0.8W, 24hrs
Net Weight	3.0g
Operation Temperature	-20℃~+55℃
Storage Temperature	-25℃~+55℃
Polarity	Diaphragm shall move forward when a positive D.C. current is applied to the "+" or marked on terminal.

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Reliability Test		
Item	**Method of Test**	**Standard**
Dry Heat Test	The part is placed in a chamber with +55±2℃ for 96 hours and then being placed in natural condition for 2 hours, output shall be measured.	All specifications must be satisfied after the test.
Cold Test	The part is placed in a chamber with -25±2℃ for 96 hours and then placed in natural condition for 2 hours, output shall be measured.	All specifications must be satisfied after the test.
Humidity Test	The part is placed in a chamber with, 90%~95%R.H. at +40℃ ±2℃ for 96 hours and then placed in natural condition for 2 hours, output shall be measured. (Attached FIG.1)	All specifications must be satisfied after the test.
Temperature Cycle Test	The part is placed in a chamber at -25℃±5℃ for 30 minutes, then the part shall be placed at room temperature(+20℃). After 15 minutes at this temperature, the part then shall be placed in a chamber at +55℃±5℃. After 30 minutes at this temperature, the part shall be returned to room temperature(+20℃) for 15 minutes. After 5 above cycles, output shall be measured after being placed in natural condition for 2 hours. (Attached FIG.2)	All specifications must be satisfied after the test.
Vibration Test	The part shall be measured after being applied vibration of amplitude of 1.5mm with 10-55Hz band of vibration frequency . Movement in directions of X,Y,Z for 2 Hrs each (Total 6Hrs) Sweep time is 1 minute. (Attached FIG.3)	All specifications must be satisfied after the test.
Drop Test	The part inside the packing must be OK after test. Direction of drop: 1 corner, 3 edges and 6 surfaces. Height:1 meter.	All specifications must be satisfied after the test.
Load Test	Noise: White noise (EIA filter) Power: 0.8 W Duration: 24 hours	All specifications must be satisfied after the test.

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Humidity Test

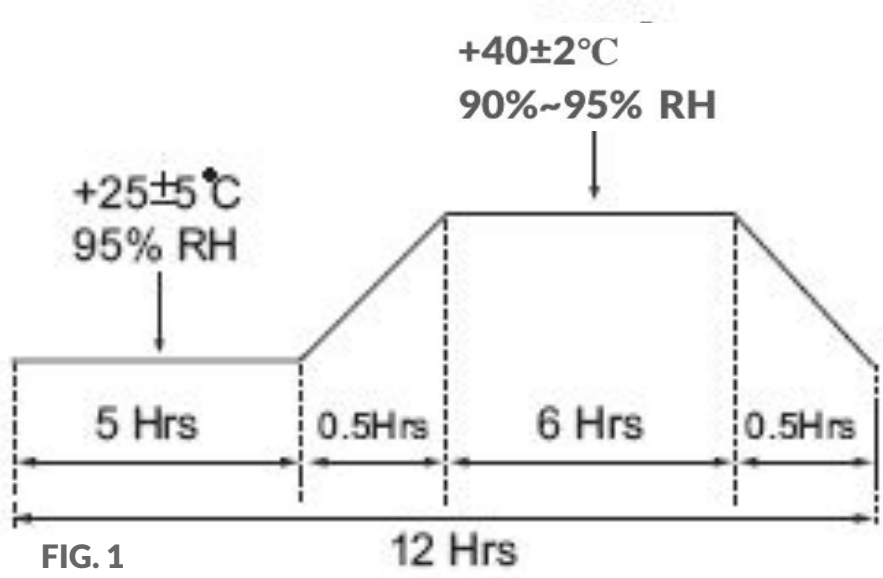

FIG. 1

Temperature Cycle Test

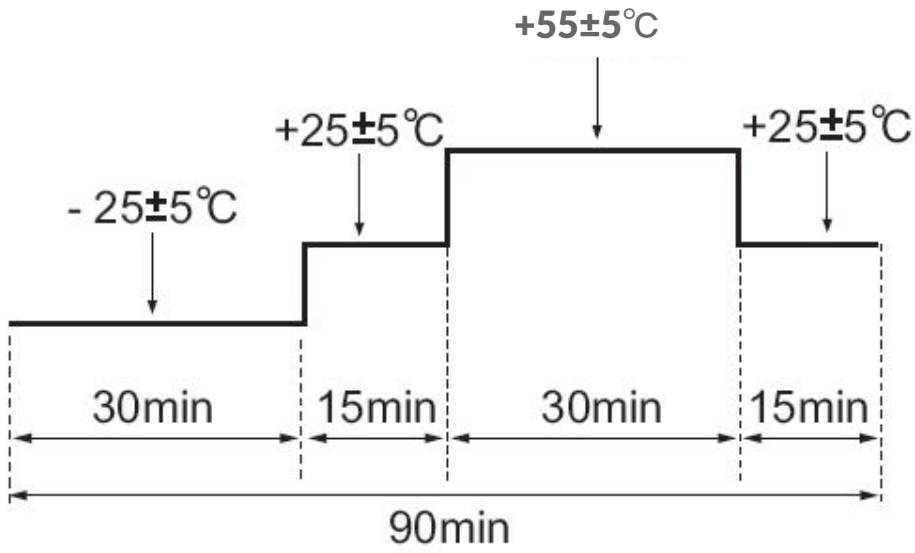

FIG. 2

Vibration Test

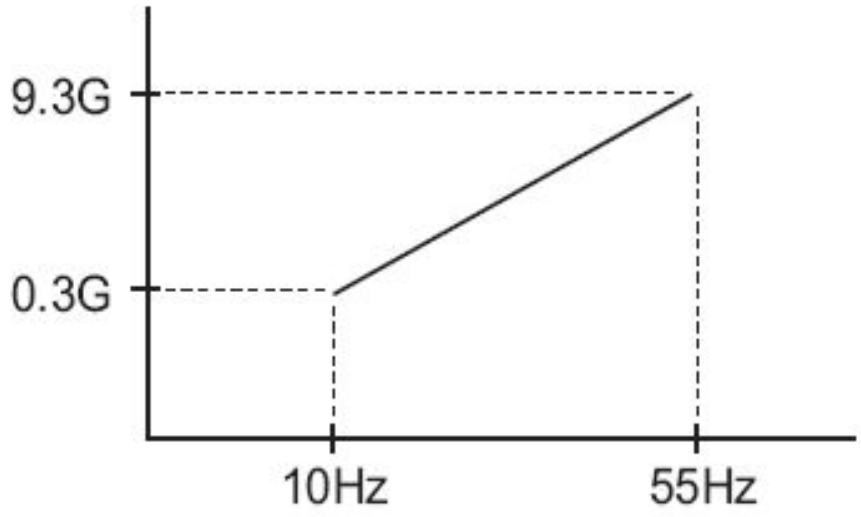

FIG. 3

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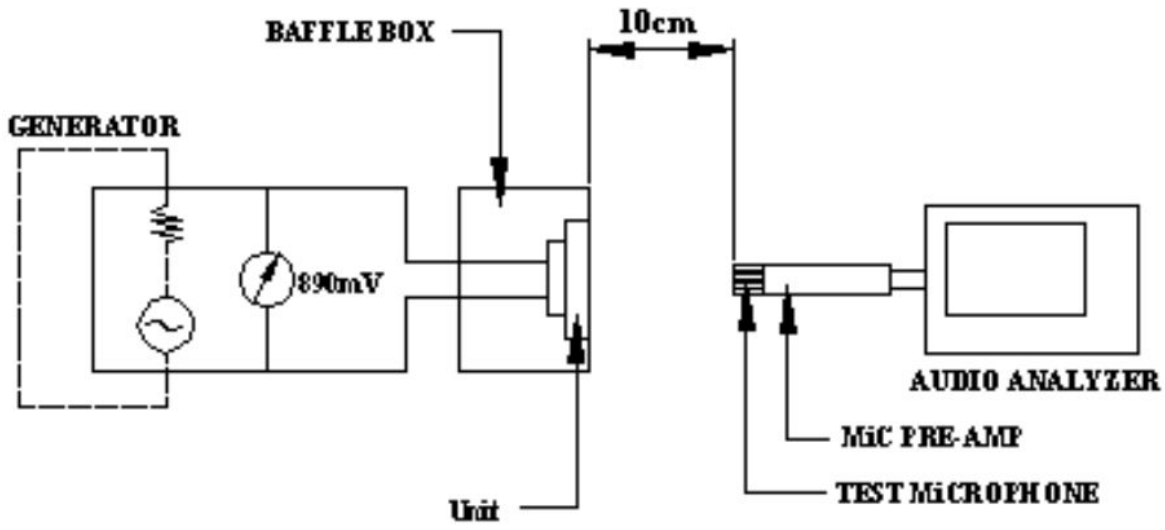
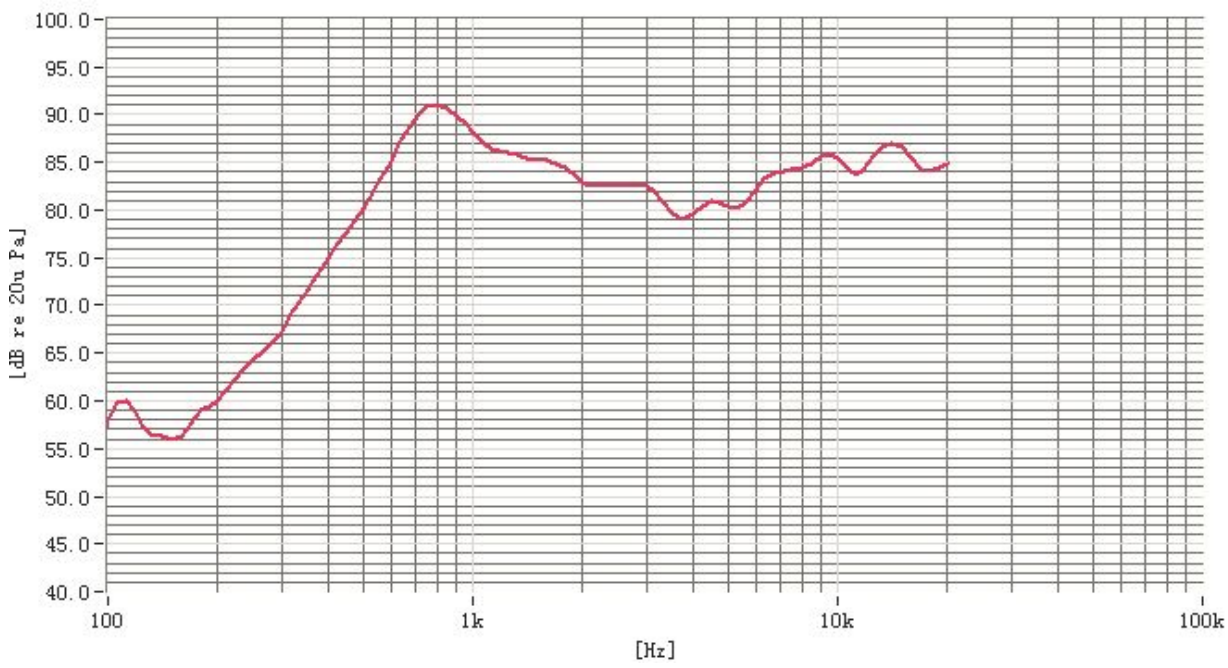
Measuring Circuit



Typical Frequency Response Curve



Normal Test Conditions

Temperature	17℃～25℃
Relative Humidity	45%～85%(RH)
Air Pressure	86kPa～106kPa
Judgement Test Conditions	
Temperature	20±2℃
Relative Humidity	60%～70%(RH)
Air Pressure	86kPa～106kPa

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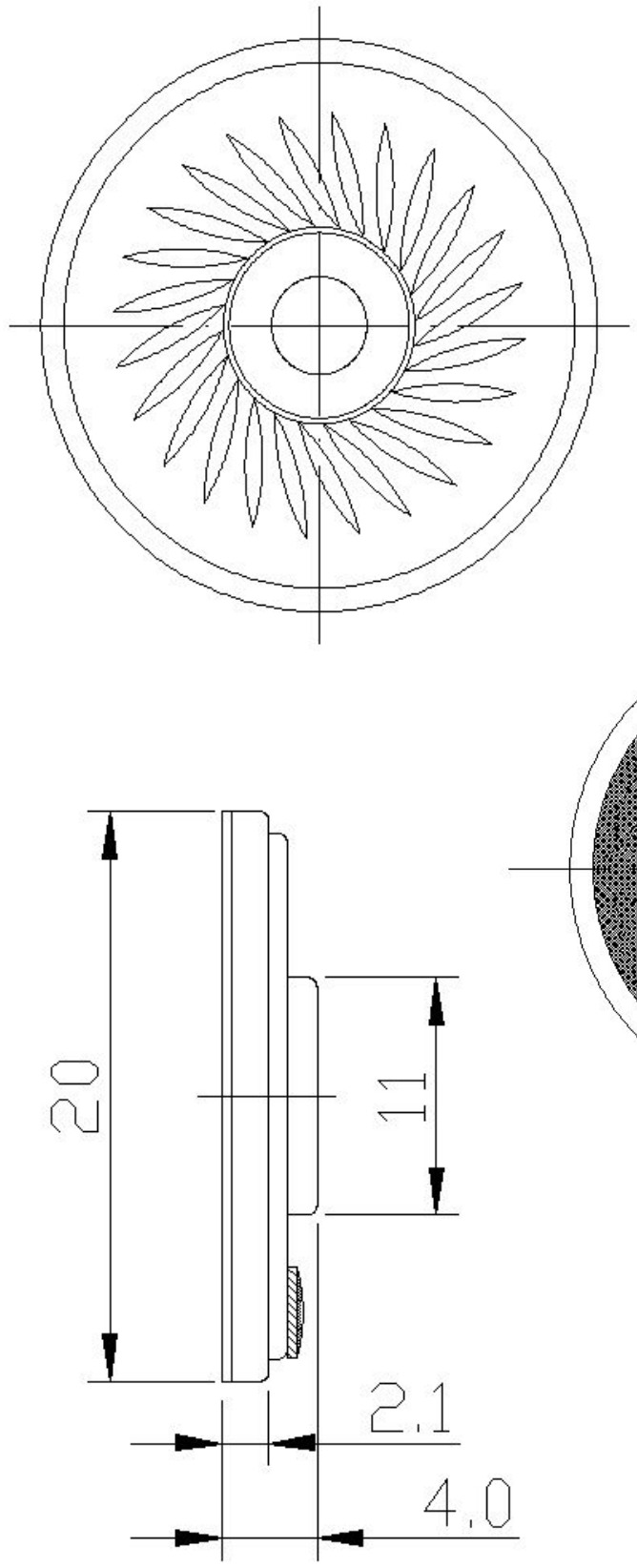
Dimensions

Tolerance: ±0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Frame	ABS	1
2	Magnet	Nd-Fe-B	1
3	Washer	SPCC	1
4	PCB Terminal	FR-4	1
5	Voice Coil	Cu	1
6	Diaphragm	PET	1
7	Unit Cap	Steel	1

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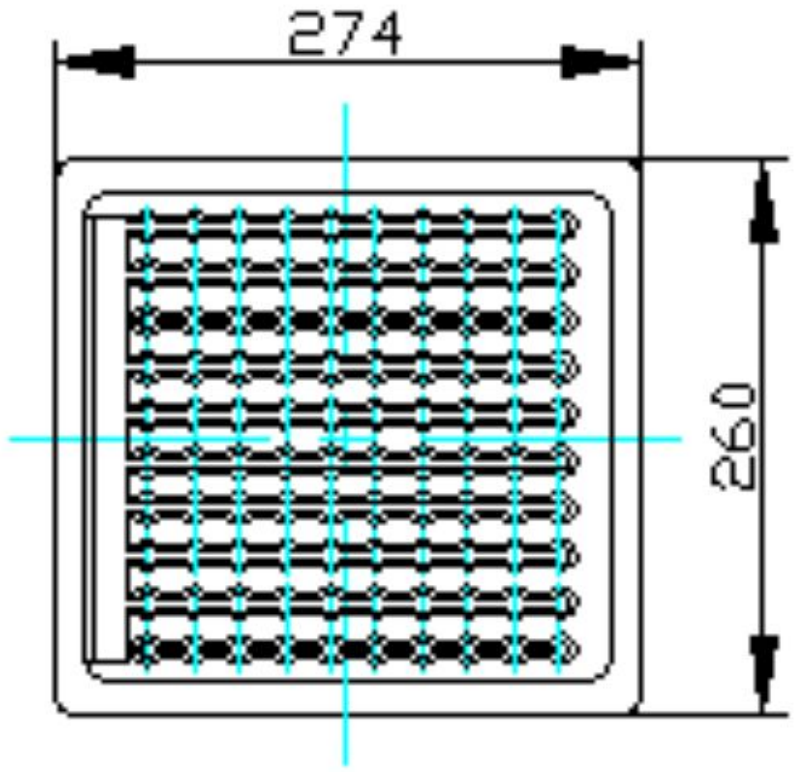
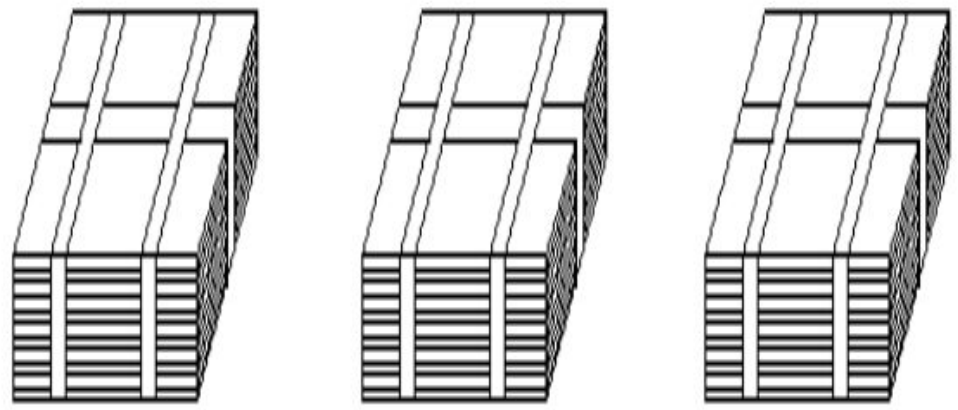
Packaging



100PCS speakers in per tray



3000PCS speakers