

DB Products Limited

Approval Sheet

Model Number: RM1511IH080008WLFLP-028

Reference Number: 5-001

Date: 15 January 2024

Prepared by: Brian Lee

Approved by: Joey Lin

Approval by

Company Name:

Sign by:

Title:

Date:

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1. Purpose and the scope

This document contains the specific specifications (electrical and mechanical), inspection standard and the reliability standard for the purpose of the customer's approval.

2. Description

Mylar Speaker.

3. Applications

Feature Telephone, Cordless Phone, Computer, Instrument etc.

4. Product origin

In China

5. Test conditions

Test should be made under the conditions of room temperature ($20 \pm 10^{\circ}\text{C}$) normal humidity ($60 \pm 20\%$) and normal atmospheric pressure. In the case, however, that the judgment is questionable the test conditions are to be changed to room temperature $20 \pm 2^{\circ}\text{C}$, relative humidity $60 \sim 70\%$ and normal atmospheric pressure..

6. Ozone guarantee

Certificate on the elimination of ozone layer destroying substances such as Freon.

7. Quality protection

The specifications of the mentioned model are based on this document. Other specifications outside than this document must be discussed with us before we insert into this approval document. It means that we will not guarantee the specifications outside than this approval document.

8. Warranty.

The warranty period will commence upon the date of the receipt of the parts from db products limited. In the event that the warranty is not specified on the purchasing order, the warranty period shall be half year from the date of delivery.

9. Soldering conditions

The speaker by db products limited should not be exposed to extremely high temperatures for prolonged period of time. As excessive heat will degrade the internal structure of the unit, soldering should be conducted as quickly as possible.

Recommended temperature and time for soldering

Hand soldering (for ABS, Hi-Temp ABS, FR ABS, Nylon)

300 ° C Thermal iron 2 seconds

10. Washing conditions

The products mentioned with “ remove after washing “ could be washed by our recommended solvent.

11. Flux removing solvents

In the view of the recent requirement for total elimination of ozone-depleting chemicals, we have decided to recommend our customers to use deionized water for their cleaning process at the condition given below, instead of “CFC” that was conventionally used.

Cleaning solvent : deionized water

Solvent temperature : 55 ± 5 ° C

Immersion time : 5 ± 0.5 minutes

12. Signal input polarity

When a positive dc voltage is applied to the terminal marked (+) or red the diaphragm should move to the front..

13. Operation test

Must be normal at program source same as the power rating.

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14. Specification

Items	Specifications	Conditions
Size	15.0 x 11.0 x 3.0 (mm)	
Rated Input Power	1.0 W	
Maximum Input Power	1.2 W	
Impedance	8.0 Ω	\pm 15.0 %
Resonant Frequency (f_0)	800.0 Hz	\pm 20.0 % (in 1.0 cc box)
Sound Pressure Level	95.0 dB	\pm 3.0 dB / 1.0 W / measuring distance at 1000.0 Hz (0 dB SPL = 20.0 μ Pa) (in 1.0 cc box)
Measuring Distance	10.0 cm	
Frequency Range	$f_0 \sim$ 20.0 KHz	Output S.P.L. -10.0 dB
Distortion	< 10.0 %	At 2.0 K Hz, input 1.0 W
Magnet	NdFeB	
Housing Material	PPA	
Diaphragm Material	PEEK	
Weight	1.5 g	
Operating Temperature	- 30.0 \sim + 70.0 $^{\circ}$ C	
Storage Temperature	- 40.0 \sim + 85.0 $^{\circ}$ C	
Buzz, Rattle, etc.	2.83 V	Must be normal at sine wave between $F_0 \sim$ 5.0 K Hz
Polarity	Cone will move forward with positive dc current to “ + ” terminal	
Waterproof Rating	----	

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15. Inspection Standard

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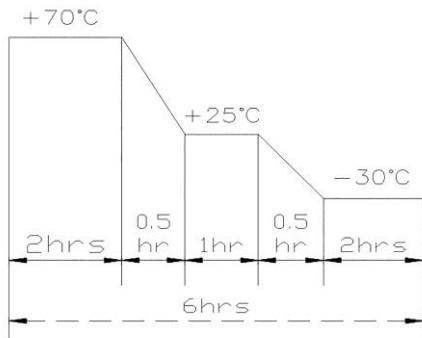
Item tested	Sym	Standard	AQL	Level	Inspection by means of	Remarks
Sound Pressure Level		Should be within 95.0 ± 3.0 dB	1	II	Audio analyzer	1.0 W / measuring distance at 1000.0 Hz (0 dB SPL = 20.0 μ Pa) (in 1.0 cc box)
Impedance		8.0 Ω	0.65	I	Impedance Meter	± 15.0 %
Outer Diameter		15.0 x 11.0 ± 0.2 (mm)	1.5	S-3	Electronic Calipers	To be measured at the maximum dia.
Height		3.0 ± 0.2 (mm)	1.5	S-3	Electronic Calipers	To be measured at the maximum height on the body only.
Rust			1	II	Visual	Any rust should not be accepted.
Stain			1.5	II	Visual	There should be no remarkable stains.
Adhesion			1.5	II	Visual	Adhesion should be made sufficiently and there should be no outflow of adhesive agent.
Other Appearance			1.5	II	Visual	

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16. Reliability Test

Reliability Test Performance	After any following test, parts should conform to original performance within ± 3.0 dB tested with Rated Power, after 6.0 hours of recovery period
High Temperature Operation and Storage	+ 85.0 \pm 2.0 °C Humidity Random for 96.0 Hours. (GB/T 9397—200X)
Low Temperature Operation and Storage	- 40.0 \pm 2.0 °C Humidity Random for 96.0 Hours. (GB/T 9397—200X)
Humidity Test	+40.0 \pm 2.0 °C Relative Humidity (RH) 90.0 ~ 95.0 % 48.0 Hours
Temperature Cycle	<p>The part shall be subjected 4.0 cycles. One cycle shall be 6.0 hours and consist of (GB5170.18-87)</p>  <p>The diagram illustrates a temperature cycle profile over a 6-hour period. It starts at +70°C for 2 hours, then ramps down to +25°C over 0.5 hours. It remains at +25°C for 1 hour, then ramps down to -30°C over 0.5 hours. Finally, it remains at -30°C for 2 hours. The total duration is 6 hours.</p>
Vibration Test	Frequency 30.0 \pm 15.0 Hz, Amplitude 1.5 mm for 3.0 Hours. (GB11606.8-89)
Drop Test	75.0 cm free falling on Concrete floor, 10.0 times. (GB2423. 8-81)
Load Test	Must perform normal with program White-Noise source at Rated Power for 96.0 Hours (GB/T 9397—200X)
Terminal Strength	<p>Apply 3.0 N (0.306 kg) to each terminal in horizontal direction for 30.0 seconds.</p> <p>Apply 2.0 N (0.204 kg) to each terminal in vertical direction for 30.0 seconds.</p>

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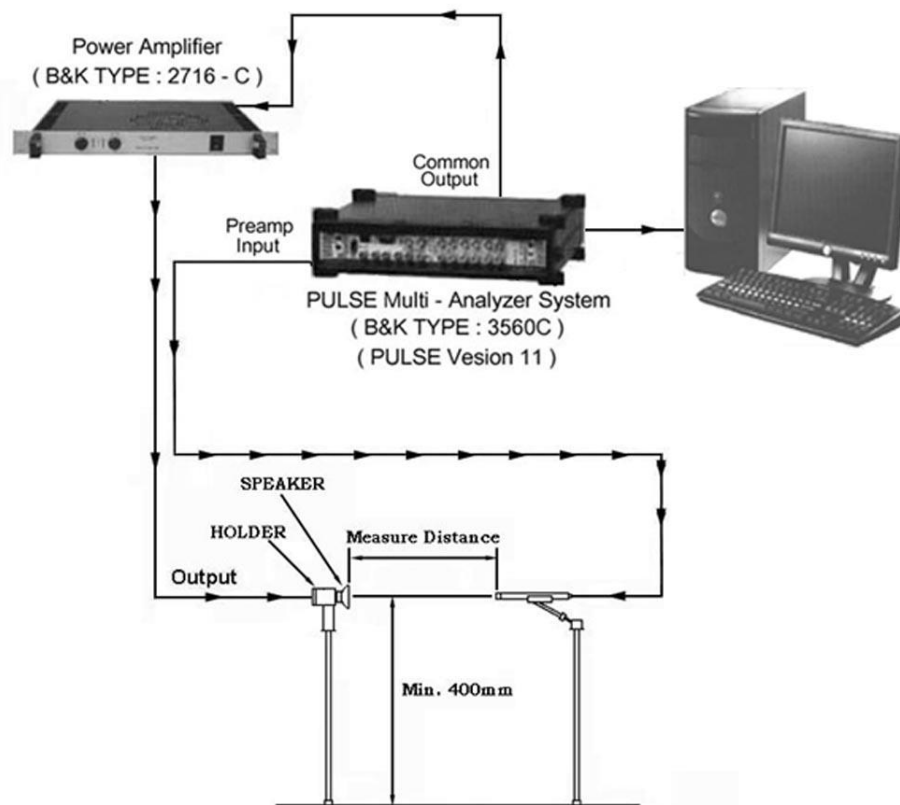
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17. Equipment List

Name	Model
Audio Analyzer	Bruek & kjaer
Acoustic Chamber	Bruek & kjaer
Audio Calibrator	Bruek & kjaer
Amplifier	Bruek & kjaer

Fig.1 Measuring Method



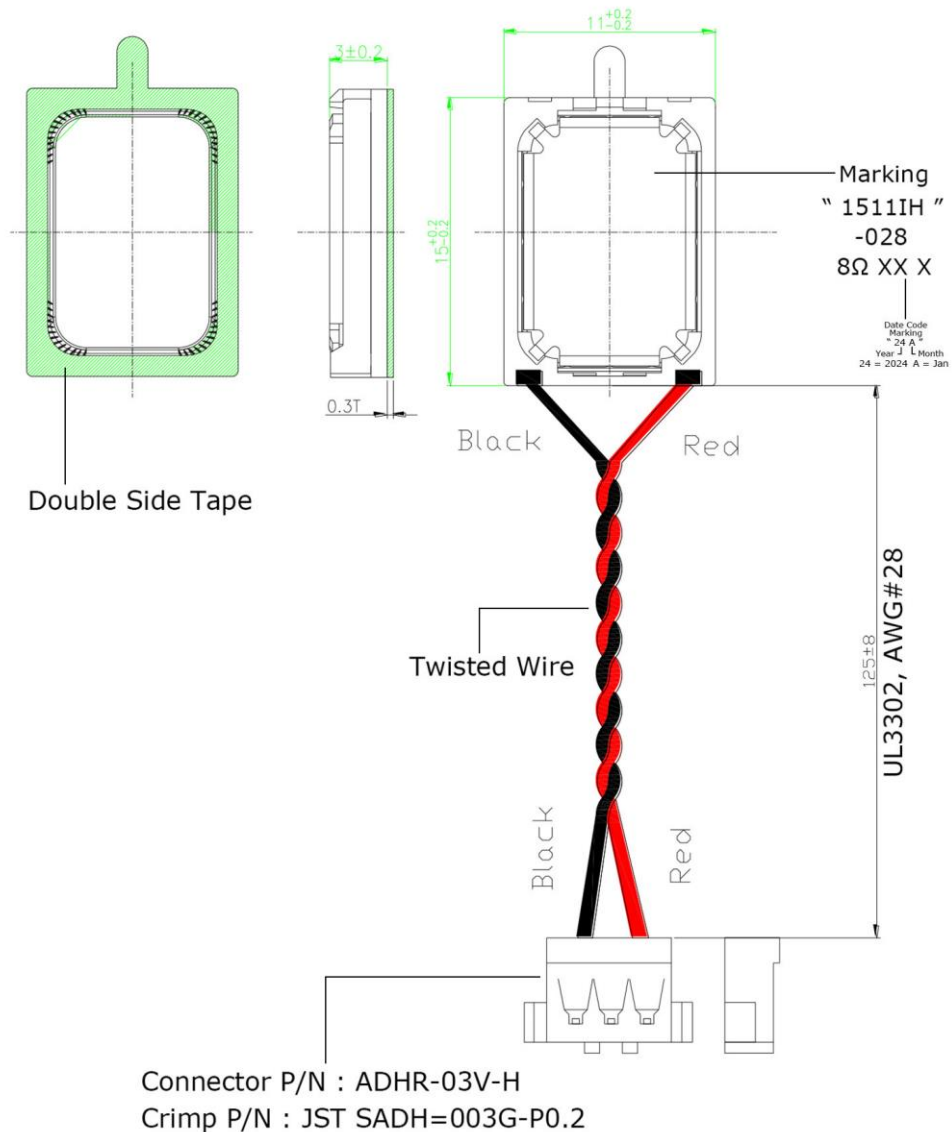
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18. Mechanical Draw

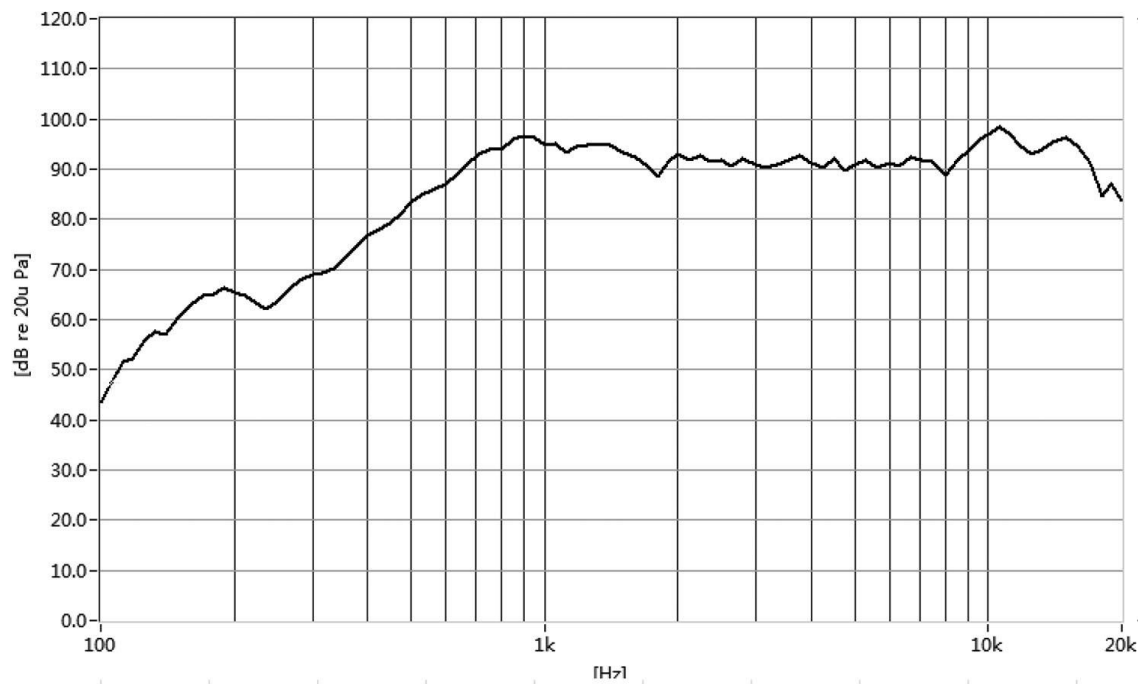
TOP VIEW SIDE VIEW BOTTOM VIEW



Unit : mm

Tolerance : ± 0.5 mm

19. Frequency Response



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20. Packing Information

Storage conditions:

Speakers should be well packed.

The temperature should be as stable as possible and between -10° C and +40° C.

The relative humidity should be below 90%.

There should be no acid or other harmful gases in the surrounding air (GB/T 9397—200X)

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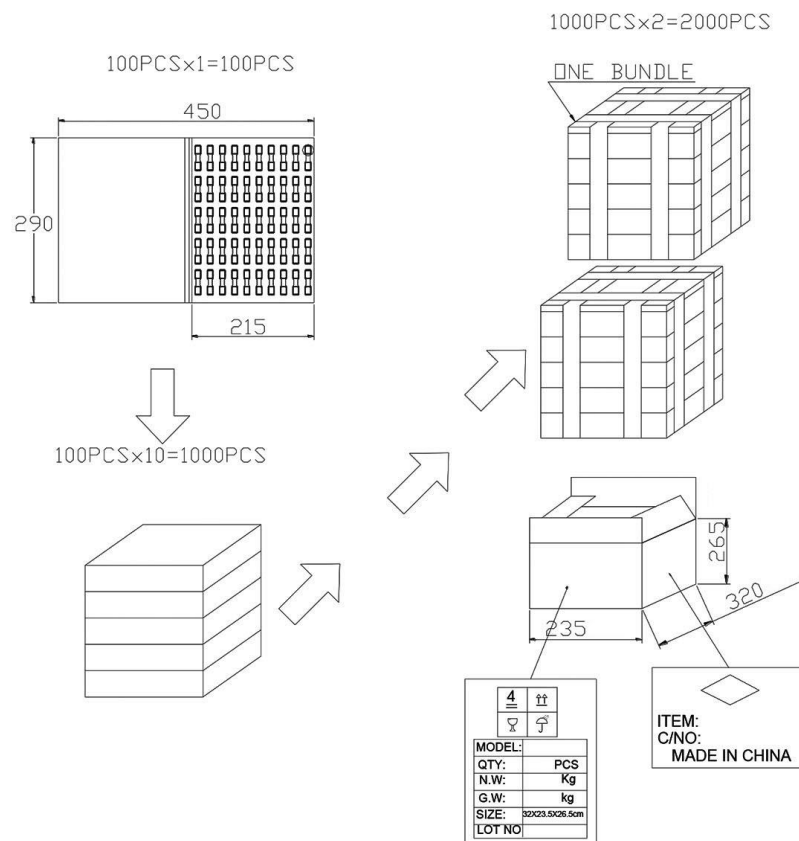
100pcs of speaker in each tray

20 trays in one carton

Total:2000 pcs / 1 carton

Gross Weight:4.5KGS

Net Weight: 3.0KGS



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21. Change History

Version	Date	Description	Approved
5-001	15 Jan 2024	New	JL

