



Mylar Speaker Specification

Series FN1313IA

Model Number: FN1313IA085008LFMP-001

Version 1.0

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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

SMD 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 ± 10 °C) normal humidity (60 ± 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 ± 2 °C, relative humidity 60 ~ 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 FLEZON. 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 FLEZON 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.

14. Specification

| Items | Specifications | Conditions |
|------------------------------|----------------------------|---|
| Size | 13.0 x 13.0 x 4.0 (mm) | |
| Normal Power Rating | 0.7 W | |
| Maximum Power Rating | 1.0 W | |
| Impedance | 8.0 Ω | $\pm 15 \%$ at 1000 Hz 1.0 V |
| Resonant Frequency (f_0) | 850.0 Hz | $\pm 20 \%$ at 1.0 V |
| Sound Pressure Level | 88.0 dB | ± 3.0 dB / 0.7 W power / measuring distance at 1000 , 1600 , 2000 , 3200 Hz average |
| Measuring Distance | 10.0 cm | |
| Frequency Range | $f_0 \sim 20.0$ KHz | |
| Distortion | 5.0 % Max | At 2000 Hz Input 0.7 W |
| Magnet | \varnothing 6.0 x 1.0 mm | SMCO |
| Housing Material | LCP | |
| Diaphragm Material | Mylar | |
| Weight | 1.1 g | |
| Operating Temperature | - 30.0 ~ + 85.0 ° C | |
| Storage Temperature | - 40.0 ~ + 85.0 ° C | |
| Buzzing and Rattles | 2.0 V | Must be normal at this sine wave between |

15. Inspection Standard

| Item tested | Sym | Standard | AQL | Level | Inspection by means of | Remarks |
|----------------------|-----|------------------------------------|------|-------|------------------------|--|
| Sound Pressure Level | | Should be within 88.0 ± 3.0 dB | 1 | II | Audio analyzer | 0.7 W power / measuring distance at 1000 , 1600 , 2000 , 3200 Hz average |
| Impedance | | 8.0Ω | 0.65 | I | Impedance Meter | ± 15 % measured at 1000 Hz at 1.0 V |
| Outer Diameter | | $13.0 \times 13.0 \pm 0.5$ (mm) | 1.5 | S-3 | Electronic Calipers | To be measured at the maximum dia. |
| Height | | 4.0 ± 0.5 (mm) | 1.5 | S-3 | Electronic Calipers | To be measured a t 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 | |

16. Reliability Test

| Item | Method of the test | Standard |
|-----------------------------|--|--|
| Storage in high Temperature | Storage in test box for 96 hours under the +85.0 ° C then expose to the room temperature for 1 hours | All specifications must be satisfied after the test. |
| Storage in low Temperature | Storage in test box for 96 hours under the -40.0 ° C then expose to the room temperature for 1 hours | |
| Load Test | Shall be normal after test at white noise source 1W 96 hours | |
| Temperature Shock Test | Low temperature : - 20.0 ± 2.0 ° C High temperature : + 60.0 ± 2.0 ° C Cycle : 1 hour each temp. And then removal back to normal temp for 1 hour. | |
| Temp./ Humidity Cycle Test | Keep 96 hours at 90 to 95 %, + 40.0 ± 2.0 ° C then removal back to normal temperature for 6 hours | |
| Drop Test | Drop a speaker contained in normal box into a board 5.0 mm thick 10 times from a height 0.75 m and then test. | |

17. Equipment List

| Name | Model |
|------------------|--------------|
| Audio Analyzer | Brue & kjaer |
| Acoustic Chamber | Brue & kjaer |
| Audio Calibrator | Brue & kjaer |
| Amplifier | Brue & kjaer |

Fig.1 Measuring Method

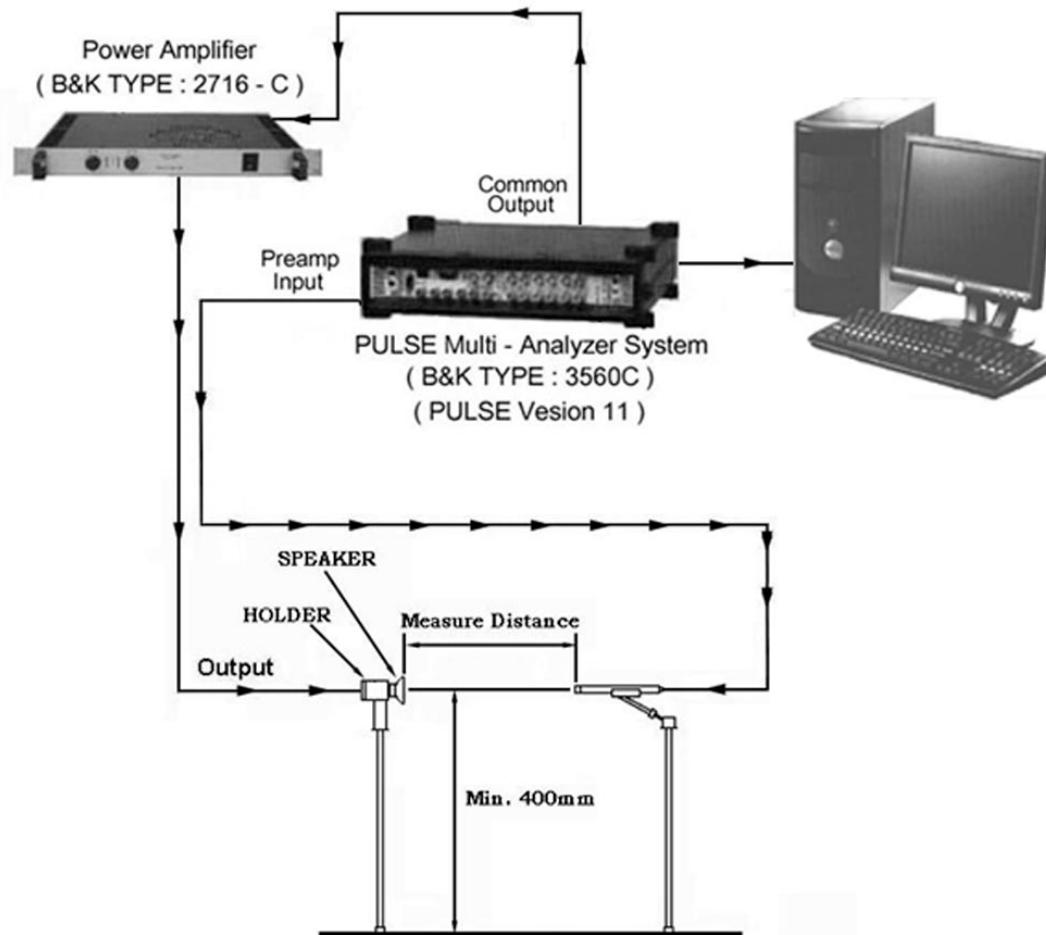


Fig.2 Temperature Shock Test

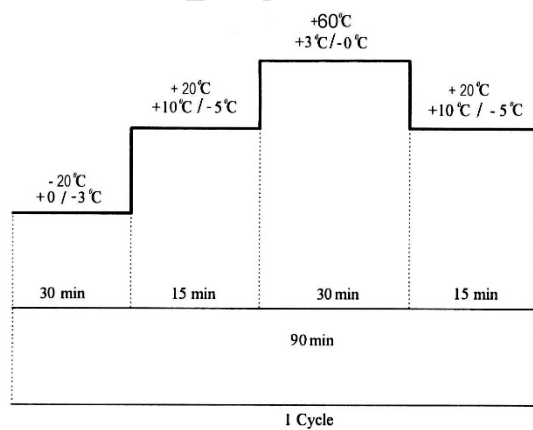
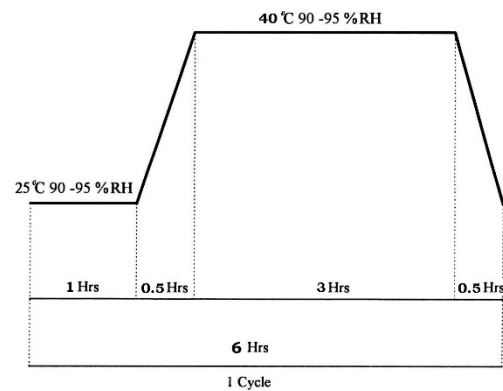
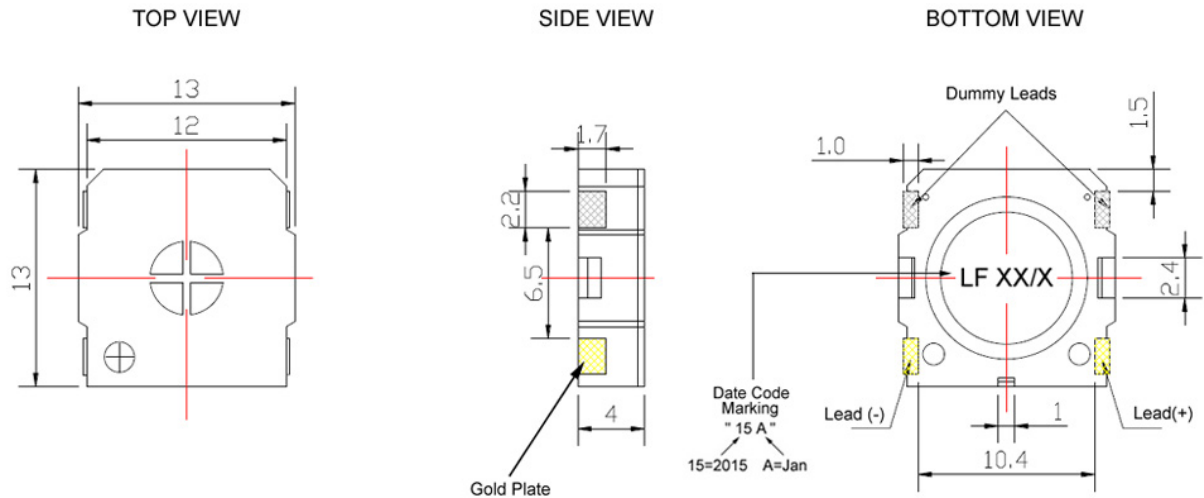


Fig. 3 Temperature / Humidity cycle test



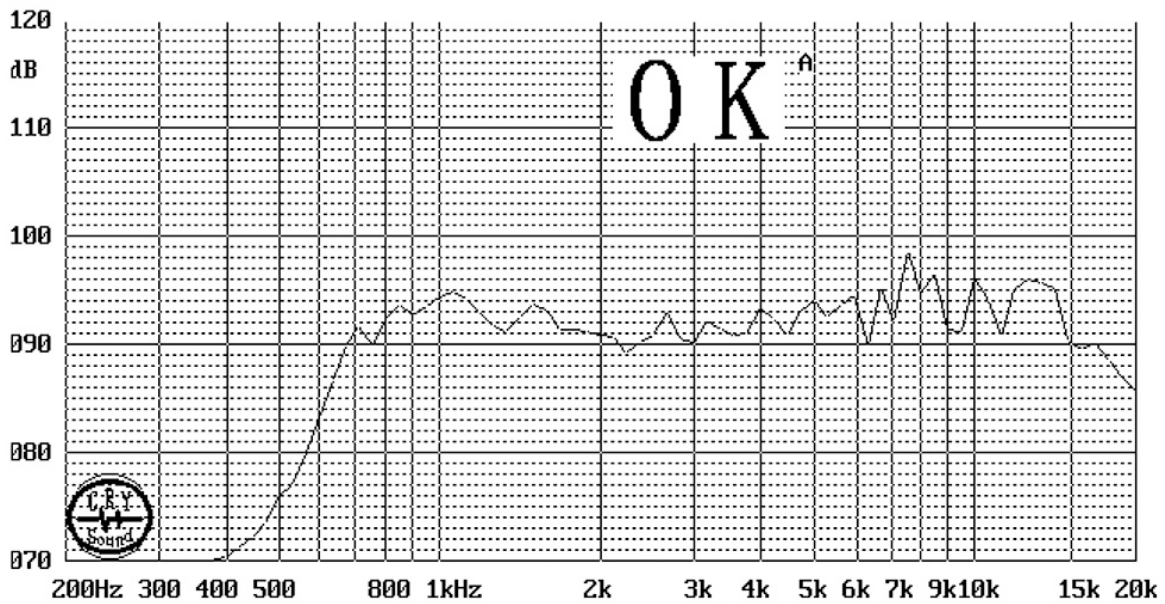
18. Mechanical Draw



Unit: mm

Tolerance: ± 0.5 mm

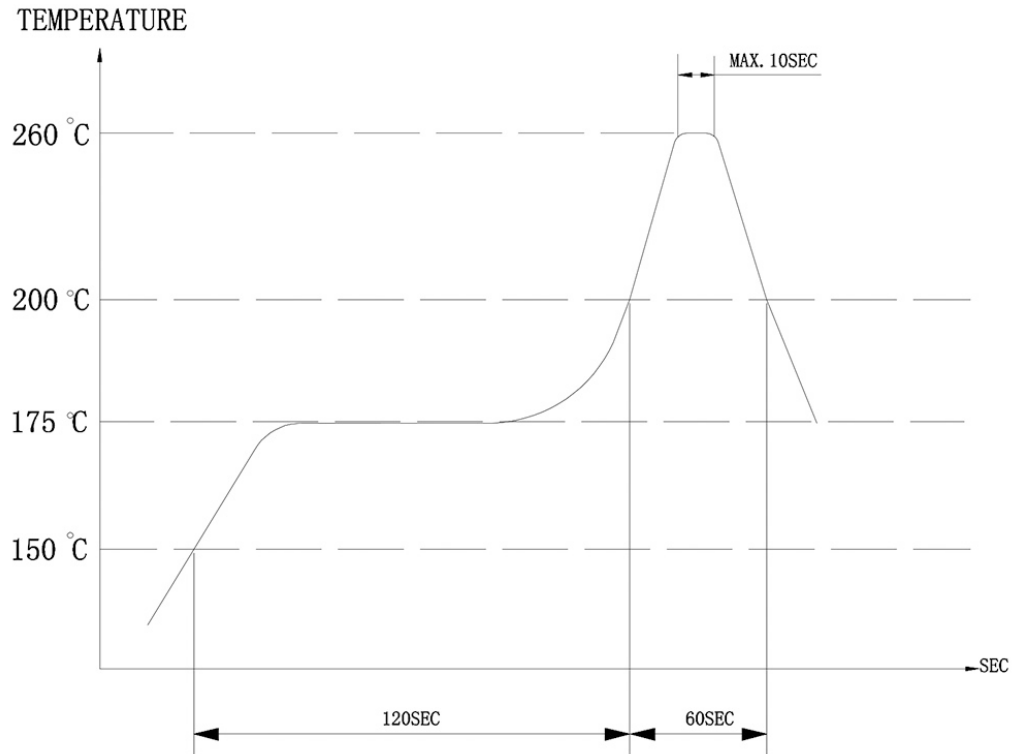
19. Frequency Response



20. Reflow Soldering Condition

(1) Recommendable reflow soldering condition is as follows (Reflow soldering is twice)

Note: It is requested that reflow soldering should be executed after heat of product goes down to normal.

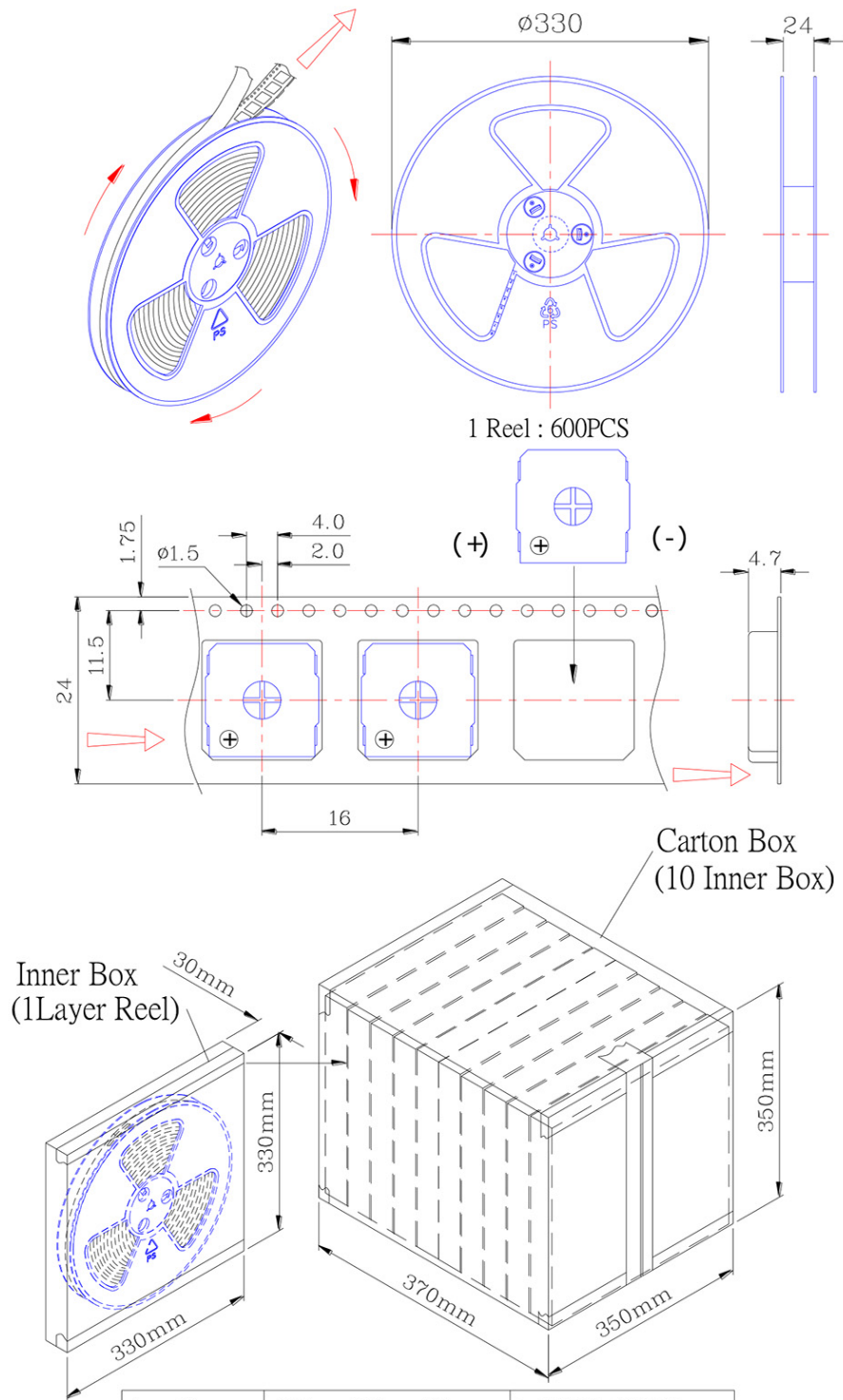


Heat resistant line (Used when heat resistant reliability test is performed)

(2) Manual soldering

Manual soldering temperature 350 °C within 5 sec.

21. Packing Information



| | | |
|------------|-------------------|--------------------|
| Inner Box | 330mmx330mmx30mm | 1x600PCS=600PCS |
| Carton Box | 350mmx350mmx370mm | 10x600PCS=6,000PCS |

22. Change History

| Version | Date | Description |
|---------|---------|----------------|
| 1.0 | 2016.05 | First Released |

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