



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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MODEL: SP-4005
PRODUCT: Dynamic Speaker
EDITION: A/2016

THIS SPECIFICATION COVERS OUR PRODUCT OF DYNAMIC SPEAKER UNIT FOR MOBILE PHONE USE

DYNAMIC SPEAKER ELECTROACOUSTIC CHARACTERISTICS

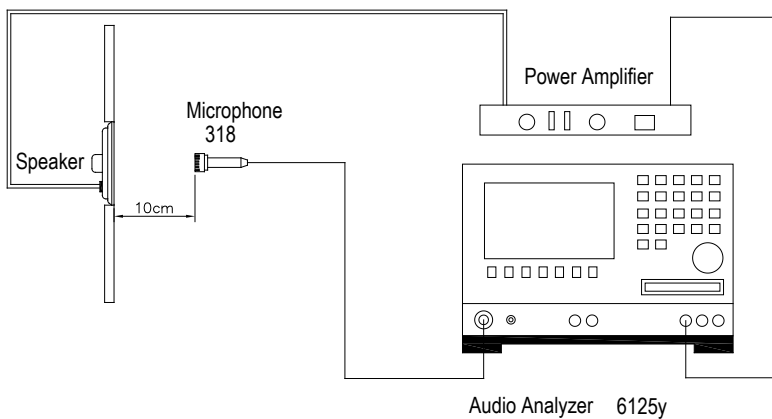
| | |
|--------------------------|---|
| sound pressure level | 92±3dB SPL @0.6,1.0,1.5and 2.0KHz in average (0dB SPL=20μPa) |
| measuring condition | 0.1W (Sine wave)10cm measured with baffler shown in Fig.1 |
| ac impedance | 8±15%Ω(@1KHz 1V) without baffler. |
| frequency response curve | As shown in Fig.2 |
| response frequency | 550±20%Hz @ 1V. (Without Baffler) |
| rated noise power | 2.0W |
| short-term max. power | 2.5W must be normal at a white noise (1W, F ₀ -20KHz) for one |
| operation test | Must be free of audible noise (buzzes and rattles) (300~8KHz frequency range, input level up to 4.0Vrms) |
| distortion | Less than 10% @1KHz, 5cm, 0.1W frequency range, input level up to 0.1W |

GENERAL SPECIFICATIONS

| | |
|-----------------------------|---------------|
| operating temperature range | -20°C ~ +65°C |
| standard test conditions | |
| temperature | 17°C ~ 25°C |
| relative humidity | 45% ~ 80%(RH) |
| dimension | ø 40 x 5.5mm |

MEASURING METHOD (SPEAKER MODE) (Figure 1)

Standard test condition of speaker



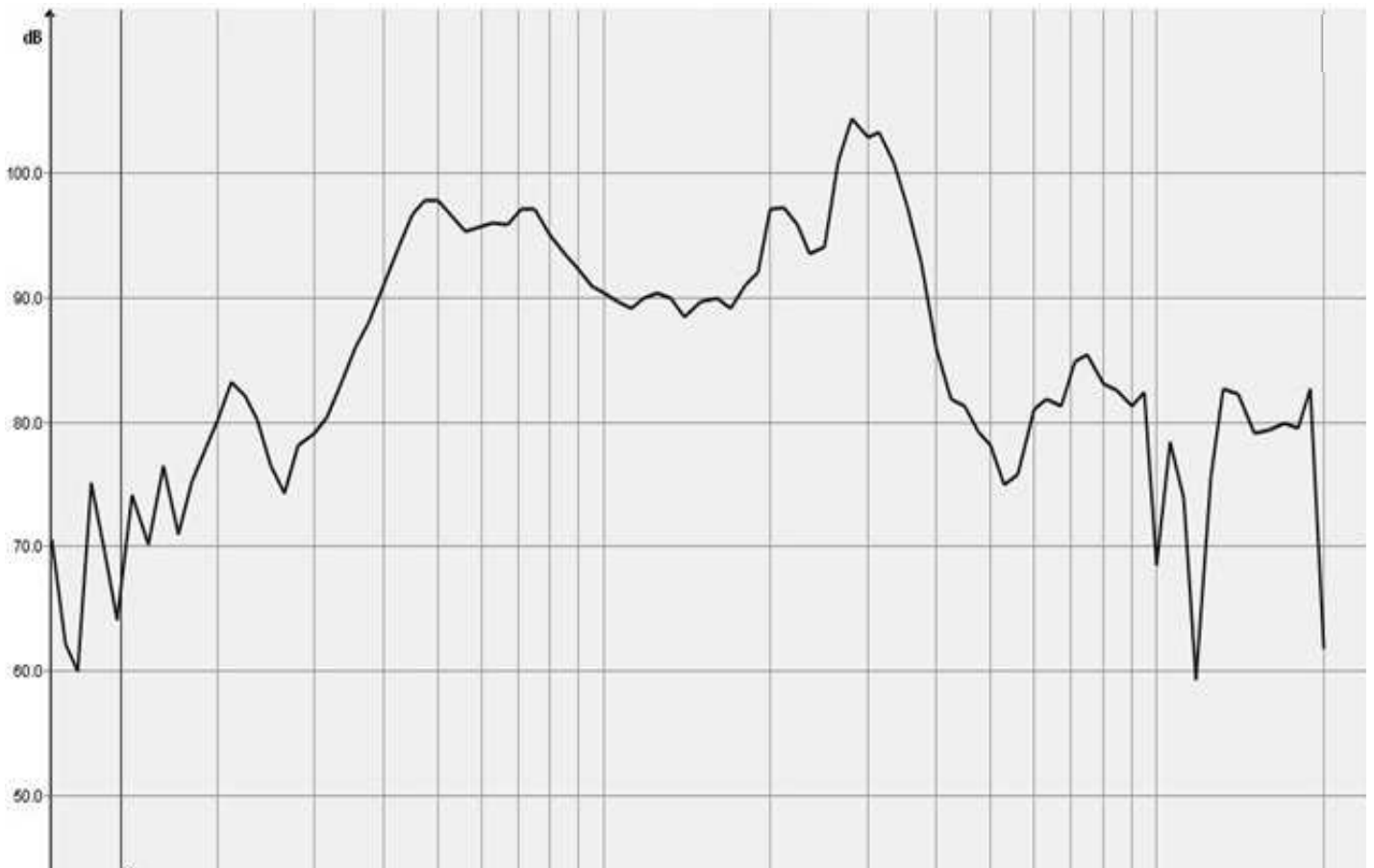
| TEST CONDITION | |
|-----------------------|----------------------|
| STANDARD | |
| temperature | 15 ~ 35°C |
| relative humidity | 45% ~ 85% |
| atmospheric pressure | 860mbar to 1060mbar. |
| STANDARD TEST FIXTURE | |
| input power | 0.1W (0.89V) |
| zero level | -dB |
| mode | TSR |
| potentiometer range | 50dB |
| sweep time | 0.5sec |



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TYPICAL FREQUENCY RESPONSE CURVE (Figure 2)





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RELIABILITY TESTS

The sound pressure as specified shall neither deviate more than $\pm 3\text{dB}$ from the initial value, nor have any significant damage after any of following testing.

HIGH TEMPERATURE TEST

| | |
|------------------|--------------------------|
| high temperature | $+65\pm 2^\circ\text{C}$ |
| duration | 96 hours |

LOW TEMPERATURE TEST

| | |
|-----------------|--------------------------|
| low temperature | $-20\pm 2^\circ\text{C}$ |
| duration | 96 hours |

HEAT SHOCK TEST

| | |
|------------------|--------------------------|
| high temperature | $+65\pm 2^\circ\text{C}$ |
| low temperature | $-20\pm 2^\circ\text{C}$ |
| duration | 1 hour |
| changeover time | < 30 seconds |
| cycle | 100 |

HUMIDITY TEST

| | |
|-------------------|--------------------------|
| temperature | $+40\pm 2^\circ\text{C}$ |
| relative humidity | 90~95% |
| duration | 96 hours |

TEMPERATURE CYCLE TEST

| | | |
|----------------------|---------------------|---------------------|
| temperature | -20°C | $+65^\circ\text{C}$ |
| duration | 45 minutes | 45 minutes |
| temperature gradient | 1~3°C/min. | |
| cycle | 25 | |

DROP TEST

| | |
|-----------------------------|--|
| mounted with dummy set mass | 100 g |
| height | 1.5 m |
| cycle | 6 (1 each plain) onto the concrete board |

LOAD TEST

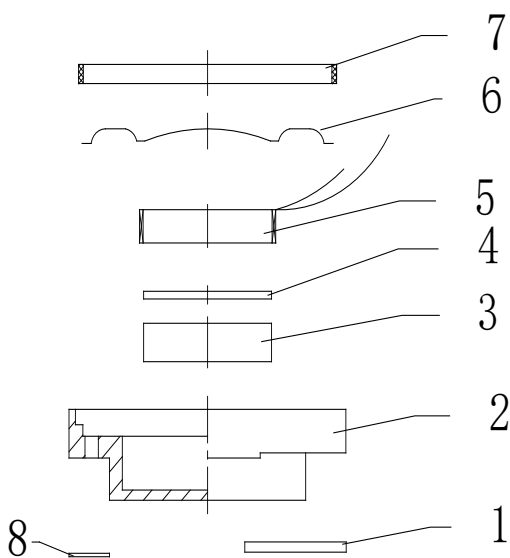
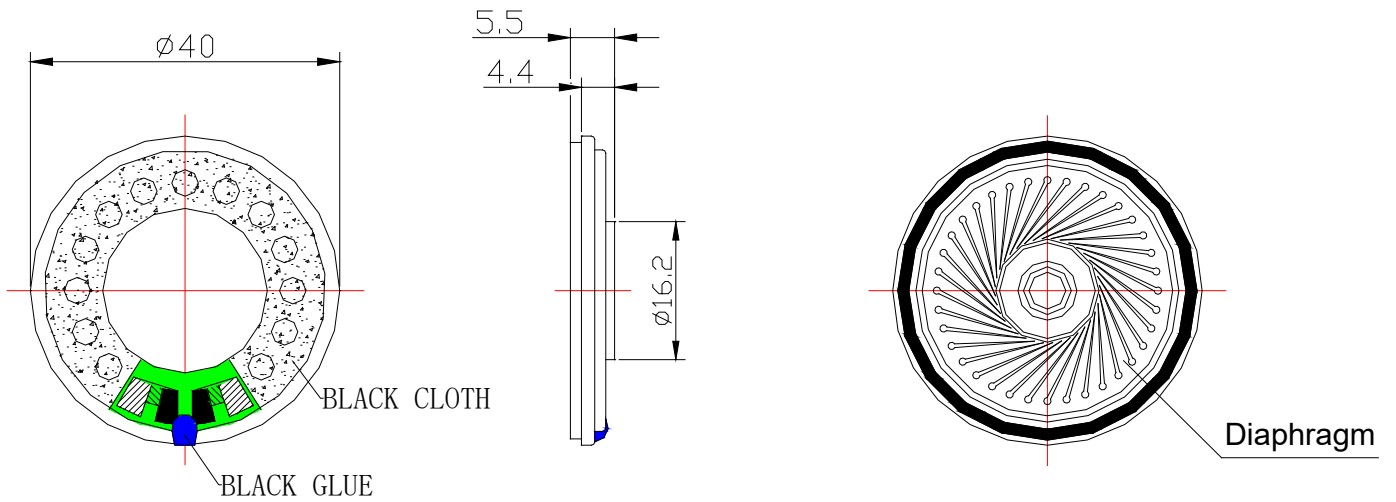
| | |
|--------------|--------------------------|
| noise signal | White noise (EIA filter) |
| input power | 2.0 W |
| duration | 96 hours |



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DIMENSIONS

Tolerance: ±0.5 (unit: mm)



| no | item | material | quantity |
|----|-------------|----------------------|----------|
| 1 | PCB | FR-4 | 1 |
| 2 | Frame | SPCC | 1 |
| 3 | Magnet | φ12.5*1.5-N38Nd Fe B | 1 |
| 4 | Plate | φ12.7×0.8 SPCC | 1 |
| 5 | Voice Coil | KSV-13.3-2.4-7.4Ω | 1 |
| 6 | Diaphragm | black PEI | 1 |
| 7 | Gasket | black paper | 1 |
| 8 | Silk Screen | black cloth | 1 |



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PACKING

42 pcs per box

24 units per box

Total:1000 pcs per box

Size:37×28×28cm

$$42\text{PCS} \times 24 = 1008\text{PCS}$$

