

To: _____

Approval Sheet for Product Specification

请承认书

PRODUCT NAME	SPEAKER
CUSTOMER PART NO	
QINGLONG PART NO	SP-3608J
DRAWING NO	940763608
Issue Date	2019/4/27

APPROVAL SEAL :				
DISCUSS		RESOLUTION		
QA	PURCHASE	ISSUED BY	CHECKED BY	APPROVED BY

SUPPLIER: CHANGZHOU QINGLONG ELECTRONIC COMPONENTS CO.,LTD

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SIGNATURE	Issued by	Checked by	Approved by
	R&D	He Binbin	Lu Tianming

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		MODEL NO.		SP-3608J
1.REVISION				
Revision	Date	Description/ Reason	DR.	Page
V0	2011-09-15	First issue	Gu Haiping	/
V1.1	2011-11-13	Force of spring contacts (chapter 2.9)	Gu Haiping	2&5
V2.0	2012-10-17	Add drawing No.	He Binbin	Cover
	2012-10-17	TYPE/ S.P.L / RESPONSE CURVE	He Binbin	2&4&5
V2.1	2014-3-28	Ring thickness change	He Binbin	2&5
V2.2	2016-8-4	Diaphragm curve changes	He Binbin	5
V2.3	2018-1-10	Add SPL>90dB at (5.7-5.85) KHz 0.1m 0.1W	He Binbin	2
V3.0	2019-4-27	New wide spring	He Binbin	5

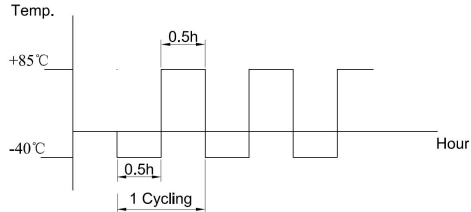
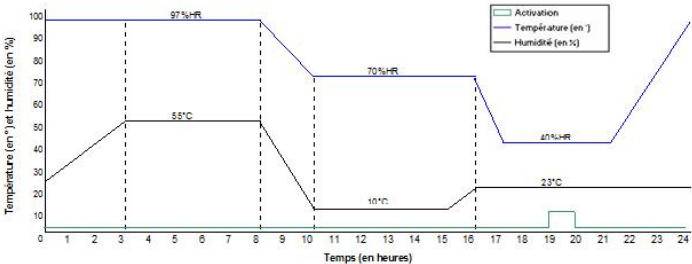
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2. Electrical and Mechanical Characteristics			
2.1	TYPE	$\Phi 36 \times 5.4 \pm 0.2$ mm	
2.2	Nominal input Power	1.0 W	
2.3	Impedance	8 Ω \pm 15% at 1 Vrms 2 K Hz input	
2.4	Resonance Frequency	450 Hz \pm 20 % 1V	
2.5	Sensitivity (S.P.L)	90 dB \pm 3dB at 1.0KHz 0.1W/0.1m With 1000cc BOX. >90 dB at (5.7-5.85) KHz 0.1m 0.1W With 1000cc BOX.	
2.6	Frequency Range	200 Hz ~ 20 KHz	
2.7	Distortion	10% max at 1K Hz 1W	
2.8	Max. Input power	1.5W Must be normal at a white noise (1.5W) for one minute.	
2.9	Force of spring contacts	$\geq 0.6N$ force of each spring contact under working position	
2.10	Magnet (ND-FE-B)	$\Phi 12.5 \times 1.35$ mm	
2.11	Net Weight	6 \pm 0.2 Gram	
2.12	Appearance	Should not exist any kind of obstacle to be harmful to Normal operation not any remarkable damages, cracks, rust and Distortions which may cause malfunctions.	
2.13	Operation Test	Must be normal at a program source (1.0 W)	
2.13	Buzz ,Rattle etc.	Should not be audible buzz and rattle at (2.83V) RMS sine wave Between (FO Hz to 13 KHz)	
2.14	Range of operation temperature	-40 ~ +85 $^{\circ}C$	
2.15	Range of storage temperature	-40 ~ +95 $^{\circ}C$	

* **Standard state:**

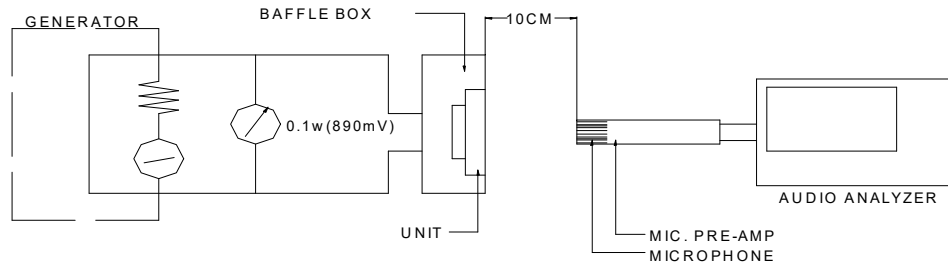
Ordinary Temp.(15 ~35 $^{\circ}C$), Humidity (25~85% RH), Air pressure (860 ~1060 hPa).

In case of doubtful judgment, the test is re-performed under basic state.

* **Basic state:** Temp.(22 \pm 3 $^{\circ}C$), Humidity (60 ~70 % RH), Air pressure (860 ~ 1060 hPa).

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3. Reliability Test:			
3.1	High Temperature Test	High temperature durability acc. to IEC 60068 part2-2 Temperature: 95±3°C Duration: 96 Hours	
3.2	Low Temperature Test	Low temperature durability acc. to IEC 60068 part 2-1 Temperature: -40 ±3°C Duration: 96 Hours	
3.3	Temperature Cycling with EL. load.	<p>Temperature: -40°C to +85°C Transfer time from lower to upper temperature:<10s Duration: 320H, with el.load (2.83V ,Rated Power 1W) . The cycling as follow:</p> 	
3.4	Vibration Test	<p>Signal: sine wave. Duration: 72 h (24 h each of 3 axis) Frequency sweep : 1 octave/min Amplitude of deflection: 0.75mm constant in range 10 Hz to 55 Hz Amplitude of acceleration: 10g constant in range 55 Hz to 2000Hz Reference:IEC60068-2-6</p>	
3.5	Humidity Test	<p>Temperature: 10°C -30°C -+55°C Humidity: 40%-70%-97% RH Duration: 240Hours (10 cycles of 24H) with el.load: 2.83V ,Rated Power 1W</p> 	
3.6	Drop Test	<p>Drop height 1000 mm Dropping surface Concrete Direction of drop 2 x magnet system pointing down 2 x magnet system pointing to side Performance Free fall Reference IEC60068-2-6</p>	

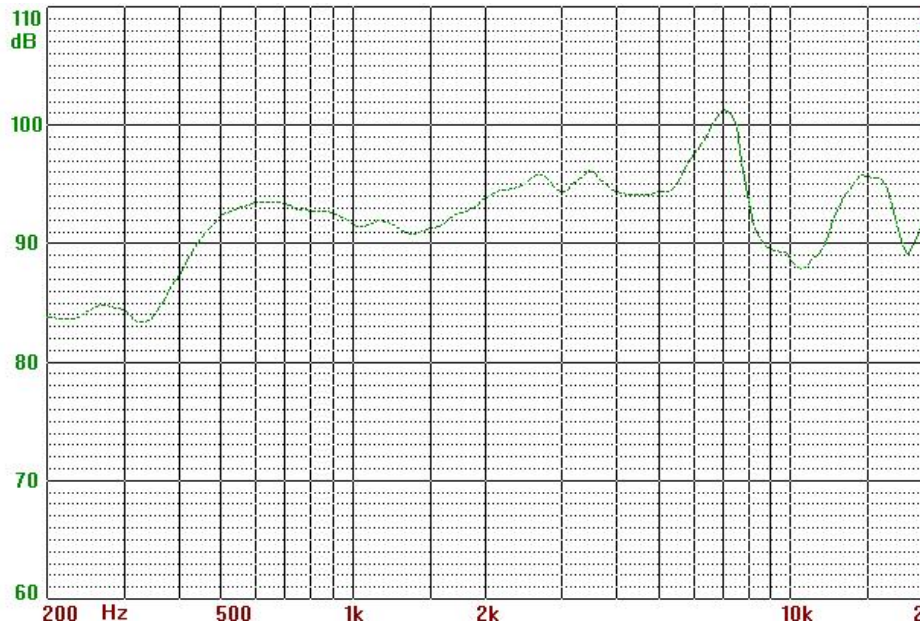
4. MEASURING CIRCUIT (SPEAKER MODE)



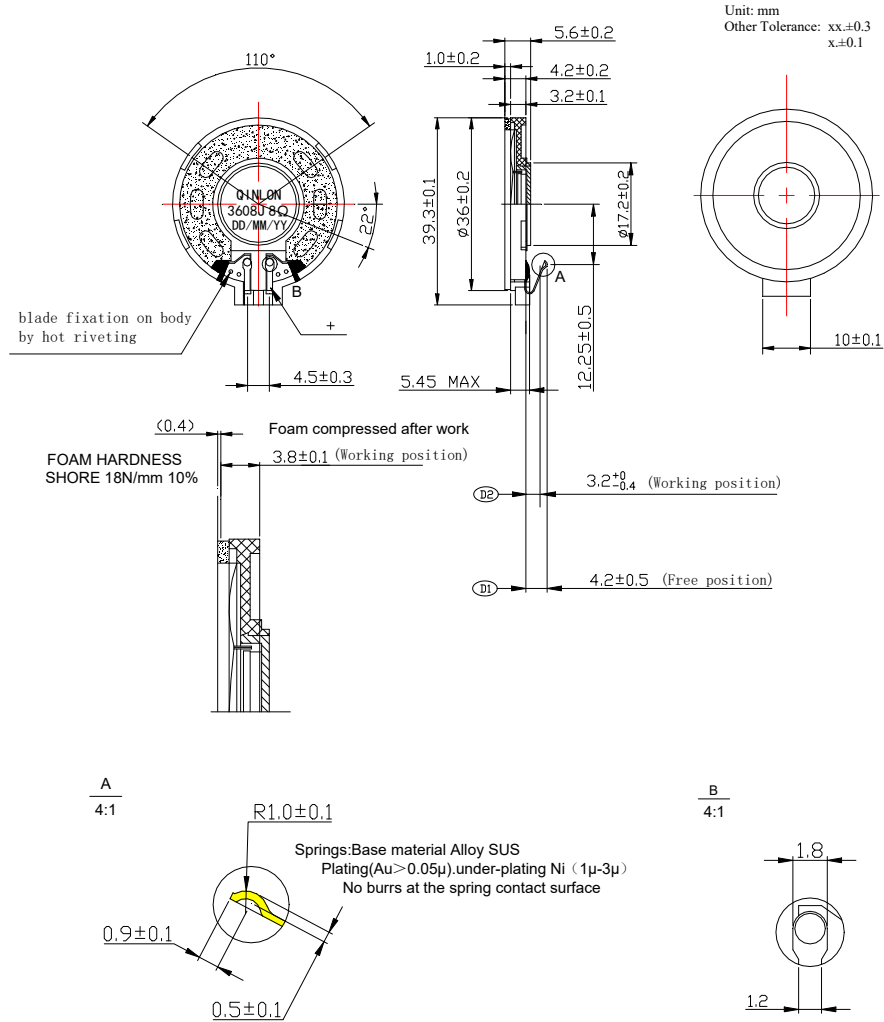
Testing Conditions.

- Anechoic Chamber
- Test Signal Input Power : 0.1W (0.89Vrms)
- Measured distance : 0.1m / on the Axis of speaker
- Measuring equipment :6160S
- Test Environment : 25°C ± 5°C, R.H.90% ± 5%

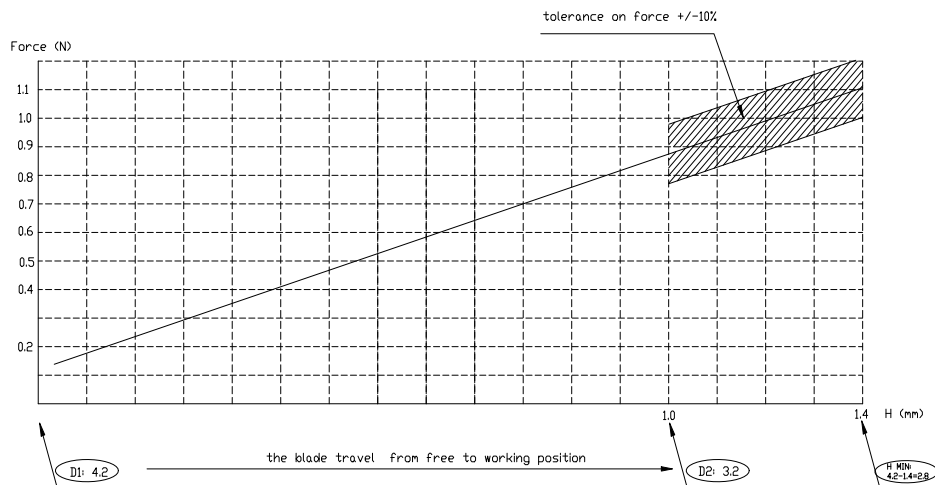
5. FREQUENCY RESPONSE CURVE(SPEAKER MODE)



6.1 DIMENSION

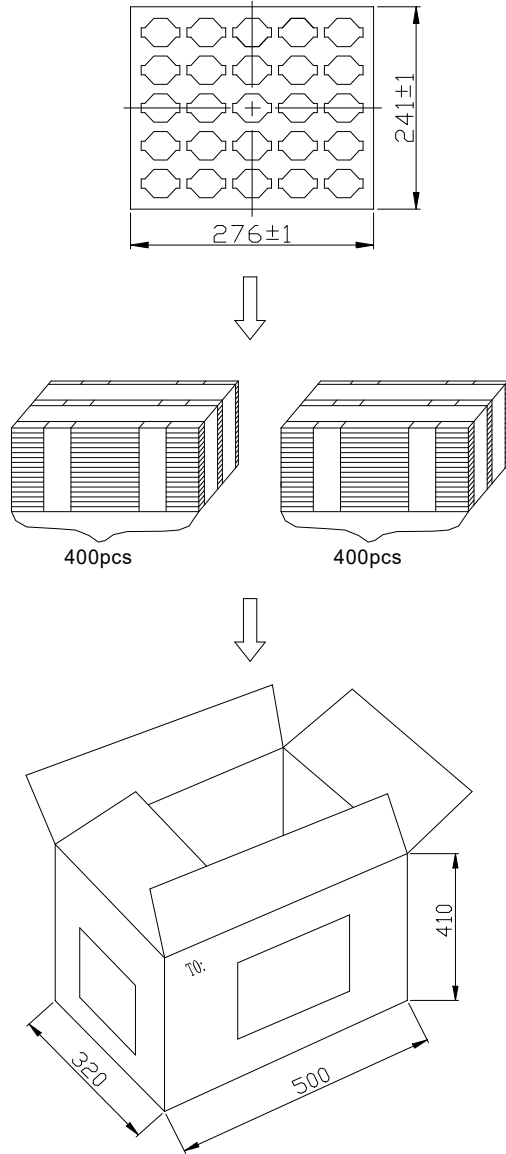


6.2 Travel force diagram of the Spring Pin



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7.PACKING METHOD



Remark:
 25 pcs per tray
 16 trays for unit
 2 unit per carton
 Total: 800pcs per box
 Size: 50×32×41 cm