



CUSTOMER	
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## SPECIFICATION

Item	SPEAKER – GENERAL			
	SILK OVAL TYPE			
Customer's Model No.				
Model No.	NB-04201-01			
spec	SIZE	40×20x8t	IMP	8 Ω
	POWER	NOM 1.0 W	MAX	2.0 W
Approval Date				

CUSTOMER'S APPROVAL
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### STAR SOUND ELECTRONICS CO., LTD. HEAD OFFICE

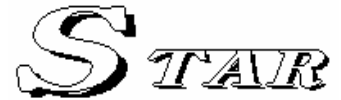
Rm 1001, Unit 403, 193 Bucheon Techno-Park,  
Yackdae-Dong, Wonmi-Ku, Bucheon-City,  
Kyungki-Do, Korea Zip Code : 420-140  
T E L : (032) 3 2 5 - 1 7 7 1  
F A X : (032) 3 2 5 - 5 2 7 4

DESIGN	CHECKED	APPRO
J.H.S	X	J.M.M

**EDITION HISTORY**

Model No.	NB-04201-01		Item	SPEAKER - GENERAL	
				SILK OVAL TYPE	
REV No.	DATE	PAGE	DESCRIPTION OF REVISION	REASON	
0	09.11.11		INITIAL DESIGN		

# APPROVAL SHEET



Model No.	NB-04201-01	I t e m	SPEAKER - GENERAL SILK OVAL TYPE
<p>1. 적 용 (Application)  본 승인원은 일반 스피커의 검토 및 승인에 적용한다.  (This APPROVAL SHEET is applied for the examination and approval.)</p> <p>2. 일반 사항 ( General Item)  2-1 공급자가 부품의 사양, 구조, 재질, 제조장소, 공정등을 변경하고자 할때는 필히 재 승인을 득해야 한다. ( 제조 장소 : 성음전자 )  (As supplier tries to change the specification, material, producing place and process make sure to get the approval again. Producing place : STAR SOUND CO.,LTD )  2-2 공업 소유권, 품질보증등에 대해서는 "품질보증계약서"에 의한다.  (The ownership of industry, the guarantee of the quality and ect. Are on the ground of the guarantee contract for quality of parts.)</p> <p>3. 취급시 주의 사항 ( Attention of management )  본 제품은 자석을 이용한 제품으로 취급상 제품끼리 붙이거나 철 가루등 자력에 영향을 주는 이물질과 격리 시켜야 한다.  (These speakers use the magnet, they should not contact with other speakers and it should isolate with the material to give a Iron powder magnet the influence)</p>			

# APPROVAL SHEET



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## 4. Unit Specification

### 4-1. Mechanical Specification

No.	Item	Description			
1	Dimension	40×20×8t			
2	Total Weight	7.9 g	±	10 %	0.277 OZ
3	Magnet	Main Magnet		ND MAGNET	11.0×2.0t
		Sub Magnet			
4	Appearance	Should not exist any sbstacles to be harmful to nominal operation, from damages, cracks, rusts and distortions, etc			

### 4-2. Electro-acoustical Specification

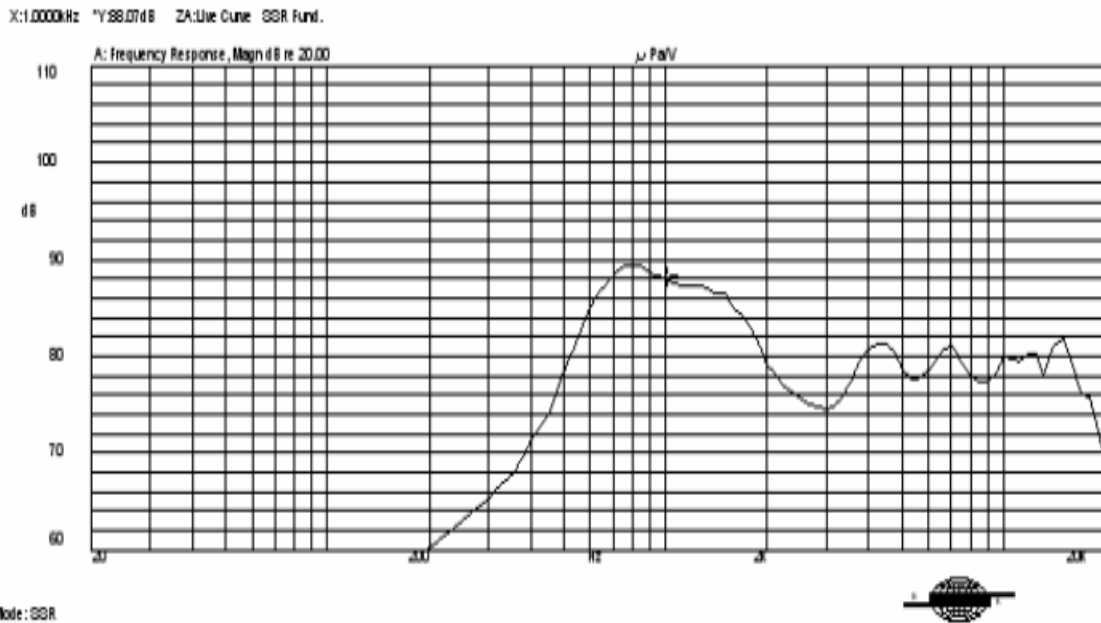
No.	Item	Description			
1	Impedance	8 Ω	±	15%	at 1500 Hz 1.0 V
2	Resonance Frequency	700 Hz	±	140 Hz	at 1.0V
3	S.P.L	87 dB	±	2 dB	at 1.0W 0.5m 800, 1000, 1200, 1500 Hz in Average
4	Response	700 Hz	~	20 KHz	Deviation 20 dB Max,
5	Rated Input Power	Nominal Power Rating	1.0 W		
6	Max Input Power	Max Power Rating	2.0 W		
7	BUZZ & RATTLE	Must be nominal at sine wave 2.83 V			
8	THD (Distorsion)	5%	Max	at 1500 Hz 1.0 W	
9	Gap Flux Density	-	Gauss	±	10%
10	Polarity	When a positive D.C current is applied to the voice coil terminal marked (+), The diaphragm shall move forward			
11	Standard test conditions	Conform to KS C 6027 (EQUIVALENT TO JIS C 5532)			

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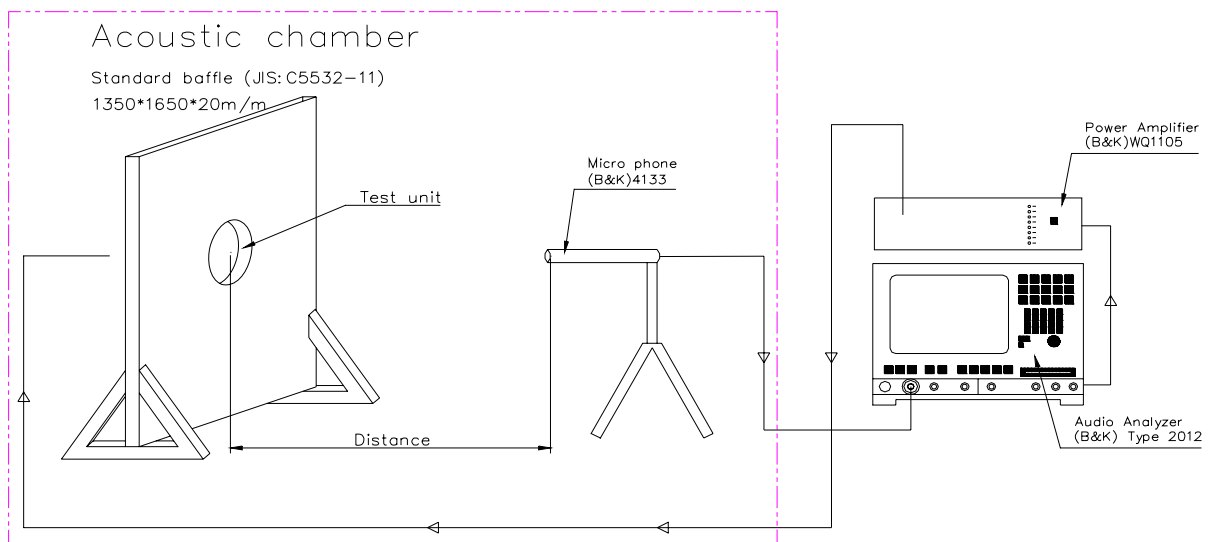


Model No.	NB-04201-01	Item	SPEAKER – GENERAL
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## 5. Frequency Response Curve



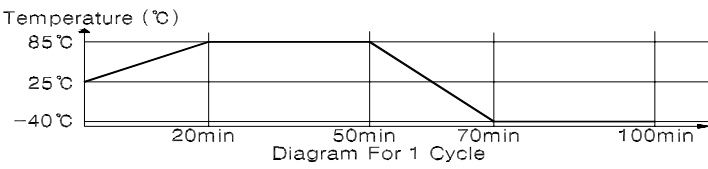
## 6. Measurement Setup



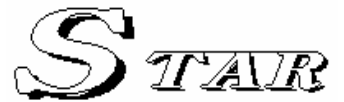
Test Signal	1.0 W	2.83 V
Testing Distance	0.5 m	
Response Time	0.5 sec	
Baffle Box	JIS C 5532 - 11	

# APPROVAL SHEET



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7. 신뢰성 시험 ( The reliability test )				
시험 항목 (ITEM)	시험 방법 및 조건 (Test method & condition)		기준 (Standard)	
내습성 (Humidity test)	온도 40℃, 습도 95% 의 항온조에 96 Hrs 방치후 0.5 Hr 상온 자연 방치후 외관 및 동작상태를 확인한다.  (Check the appearance and operation after leave under 40℃, 95% at machinery for 96 Hrs and room temperature for 0.5 Hr)		초기치 ± 20% (Initial value)	
내한성 (Cold test)	온도 -20℃ 내한조에 96 Hr 방치후 0.5Hr 상온 자연 방치후 외관 및 동작에 이상이 없을 것.  (Check the appearance and operation after leave under -20℃ at machinery for 96 Hr and room temperature for 0.5 Hr)		초기치 ± 20% (Initial value)	
내열성 (Heat test)	온도 70℃±2℃상에 습도 95% 내열조에 96 Hr 방치후 0.5 Hr 상온 자연 방치후 외관 및 동작에 이상이 없을 것.  (Check the appearance and operation after leave under 70℃±2℃, 95% at machinery for 96 Hr and room temperature for 0.5 Hr.)		초기치 ± 20% (Initial value)	
염수분무시험 (Salt spray test)	염수 5%를 8시간 분무하고 16시간 방치하는 것을 1cycle 로 하여 3 cycle을 실시한 다음 깨끗한 물로 씻었을때 지워지지 않는 녹을 확인한다.  (After repeating 3 cycle to spray 5% of brine for 8 Hr and leave for 16 Hr, wash with water and check reminded rust.)			
연속부하시험 (Load test)	White Noise 신호 JIS Filter 를 사용하여 Rated input power 전압에 맞추고, 96Hr 연속 시험후 상온에서 0.5 Hr 자연 방치후 동작 시험을 하여 이상이 없을 것.(단선여부, Fo 변화 check)  (After adjust White noise and JIS Filter signal to Rated input power voltage, Without any problem in operating after continual test for 96 Hrs and room temperature for 0.5 Hrs before testing. Check for disconnection and Fo for change)		전기적 성능을 만족할 것. 시료수 : 5 pcs (Satisfy electrical performance) (Sample : 5 pcs)	
열충격 시험 (Temperature cycling)	고온 85℃ 저온 -40℃ 로 온도 변화를 주어 30분씩 10회 실시하고 상온 0.5 Hr 자연방치후 동작시험을 하여 이상이 없을것.  (One cycle shall consist of 30 minutes at 85℃ followed by 30 minutes at -40℃. Allow 30 minutes chamber transition time at +25℃ between temperature extremes total of 10 cycle   <p style="text-align: center;">Diagram For 1 Cycle</p>		초기치 ± 20% (Initial value)	

# APPROVAL SHEET



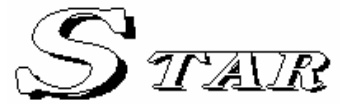
Model No.	NB-04201-01	Item	SPEAKER – GENERAL SILK OVAL TYPE
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8. 측정 data ( Test report )

항 목 (ITEM)	규 격 (Standard)	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	AVG
IMP	8 Ω ± 15 % ( 6.8 ~ 9.2 )	3.7	3.7	3.6	3.8	3.8	3.8	3.6	3.7	3.71
Fo	700 Hz ± 20 % ( 560 ~ 840 )	637	628	619	642	633	662	647	626	636.8
S.P.L	87 dBNE 2 dB ( 85 ~ 89 )	85.7	85.4	85.2	85.3	85.4				85.40
Response	700 Hz ~ 20 KHz	OK	OK	OK	OK	OK				OK
Polarity	(+) RIGHT	OK	OK	OK	OK	OK	OK	OK	OK	OK
Input Power	2.83 V	OK	OK	OK	OK	OK	OK	OK	OK	OK
Dimension "A" part	40±0.5 (39.5~40.5)	40.1	40	40	40.1	40.1	40	40	40.1	40.05
Dimension "B" part	20±0.5 (19.5~20.5)	19.8	19.8	19.8	20	20	19.8	19.8	19.8	19.85
Dimension "C" part	8.0±0.5 (7.5~8.5)	7.9	7.9	8.0	8.0	8.0	8.0	7.9	7.9	7.95
Dimension "D" part	2.3±0.5 (1.8~2.8)	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.23

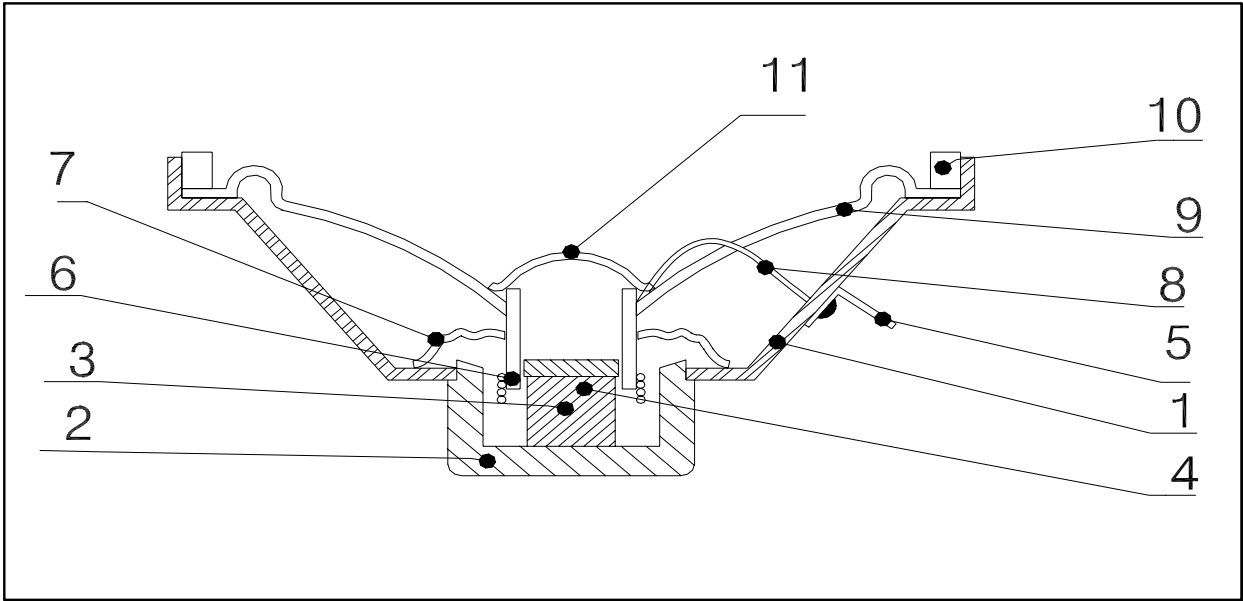
\*치수부위 첨부 도면 참조. ( To compare Dimension Part of Drawing )

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Model No.	NB-04201-01	Item	SPEAKER - GENERAL
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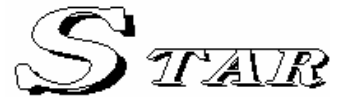
## 9. 부품 구성표 (PART LIST)



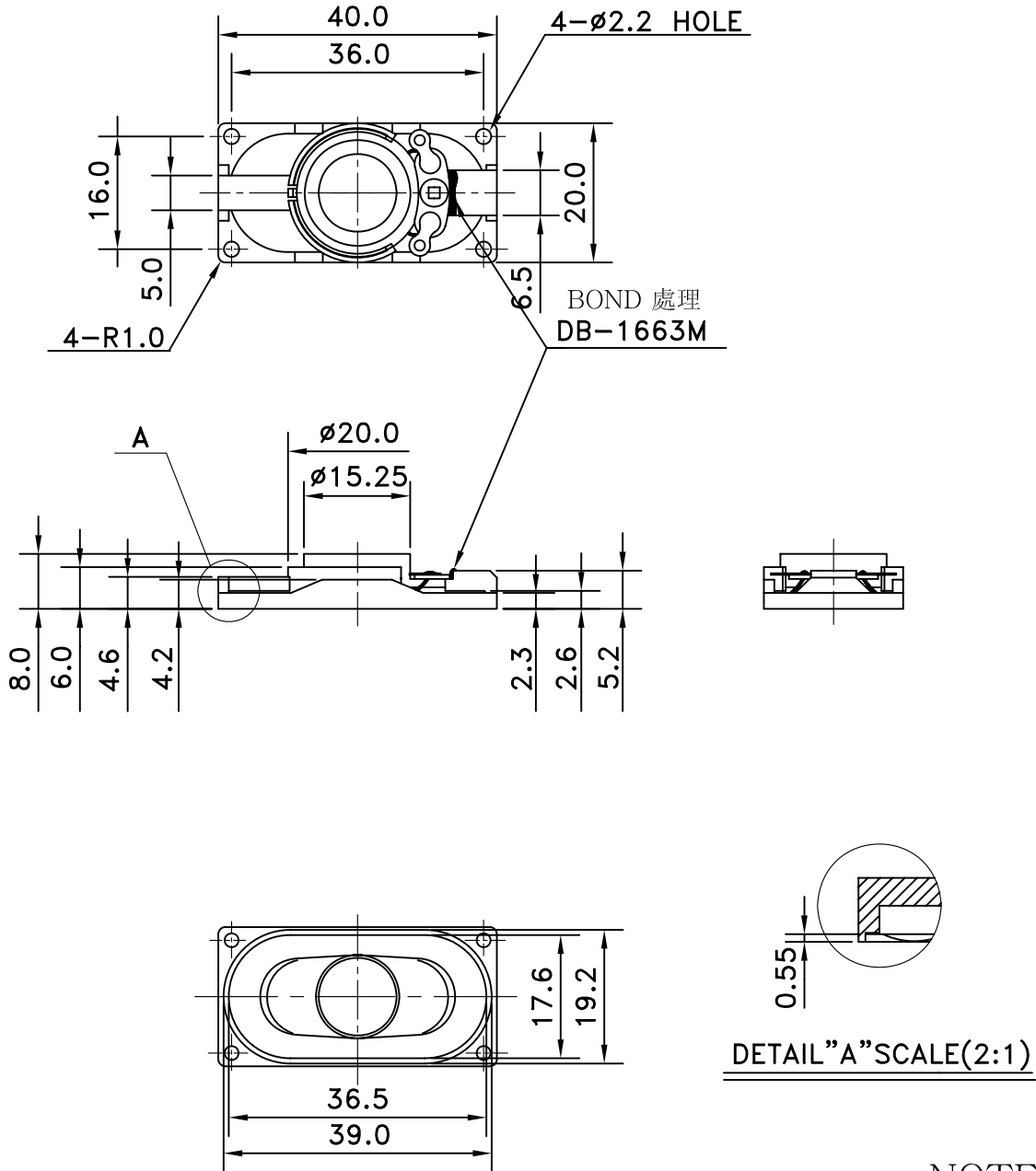
구분 (No)	품 명 (PART NAME)	수 량 (Q'TY)	비 고 (NOTE)
1	FRAME	1	ABS BLACK
2	YOKE	1	CR+3
3	MAGNET	1	
4	CENTER POLE	1	CR+3
5	TERMINAL	1	
6	VOICE COIL	1	
7	DAMPER	1	
8	LEAD WIRE	2	
9	CONE PAPER	1	
10	GASKET	0	
11	CHAMBER	1	
12	TERMINAL WIRE	0	
13			
14			
15			
16			
17			
18			
19			
20			



# APPROVAL SHEET



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NOTE  
1. RoHS

MATERIAL	④				SCALE	TOLERANCE	TITLE SPEAKER ASS'Y				
	③	환경 대응품으로 변경	06.04.14	이용욱						1/1	$\pm 0.5$
	②	BOND仕様變更追加	01.01.31	이은정							
FINISH CR+3	①	TERMIANL Ti 61-1 로變更	01.01.05	이은정	UNIT mm	THIRD ANGLE PRO-J	DRAW	CHECK	APPRO		
	⑤	新規作成	03.06.27	K.Y.J			기술연구소 2006.04.12 이용욱		기술연구소 2006.04.12 김영진		
	MARK	REVISIONS	DATE	NAME							