




# SPECIFICATIONS

Item : Micro Speaker  
Model : SG-178B9

		Prepared	Checked	Approved
	Sign			
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		Prepared	Checked	Approved
	Sign			
	Name	최경수	김영학	강신원

## SPECIFICATIONS History

Version	Date	Status	Handled by	Comments
1.0	11.12.21	draft	Q.C : H.S.KIM M.E : S.W.KANG A.E : K.S.CHOI	
1.1	11.12.21	draft	Q.C : H.S.KIM M.E : S.W.KANG A.E : K.S.CHOI	WIRE TWIST 및 공차 치수 변경

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## 1.SCOPE

THIS SPECIFICATION IS APPLIED TO THE MICRO SPEAKER (SG-178B9) WHICH IS USED AS THE CELLULAR PORTABLE PRODUCT.

## 2.MECHANICAL LAYOUT & DIMENSIONS

SHOWN IN PAGE 12. ( $\varnothing$  17 \* 3.55T)

## 3.ELECTRICAL AND ACOUSTICAL CHARACTERISTICS (AT 20°C)

### 3.1 SOUND PRESSURE LEVEL

$89 \pm 3$  dB SPL AT 0.1W / 0.1m(AVERAGE AT 0.8k, 1.0k, 1.2k, 1.5kHz),  $0$ dB= $20$  $\mu$ Pa  
INPUT VOLTAGE : 0.89V

### 3.2 NOM. /MAX. INPUT POWER : 0.8W/1.2W

### 3.3 IMPEDANCE : $8\Omega \pm 15\%$ (AT 1.2kHz, 1V)

### 3.4 RESONANCE FREQUENCY (Fo) : 720Hz $\pm$ 20%(AT 1.0 V)

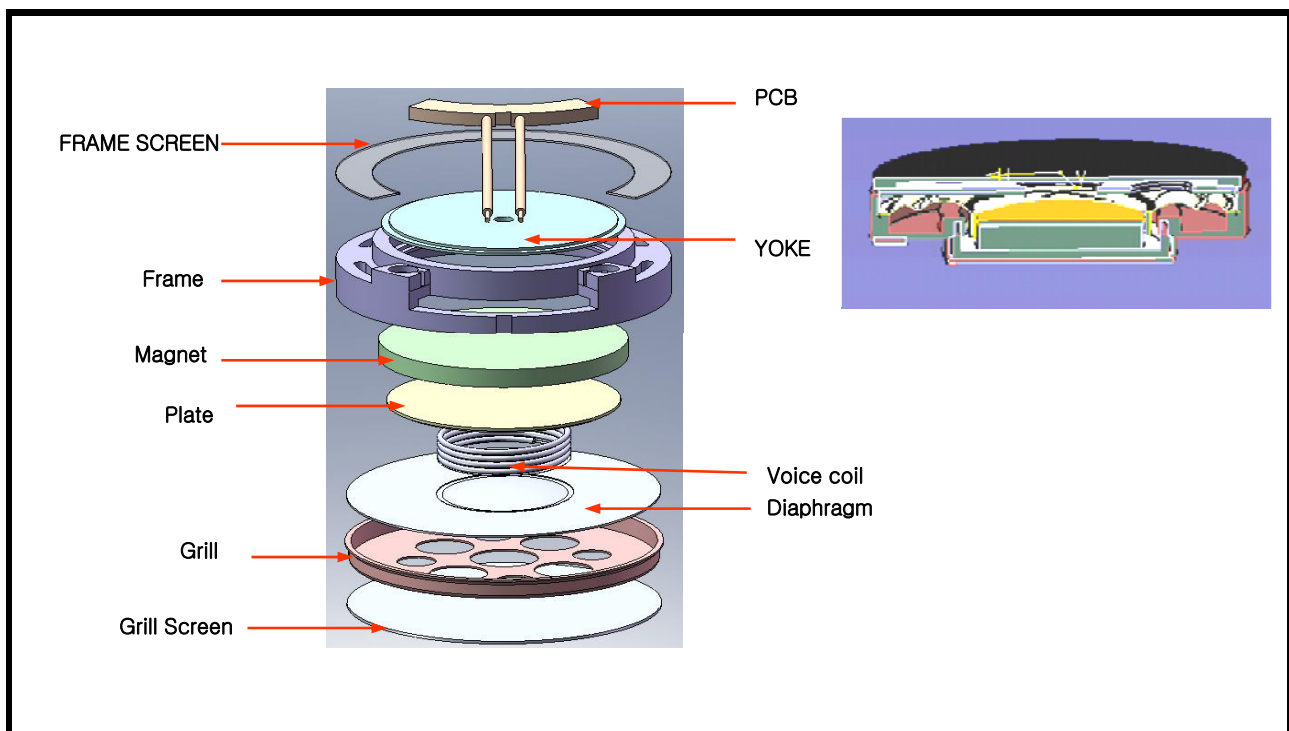
### 3.5 MODEL DCR : $6.8\Omega \sim 9.2\Omega$

### 3.6 FREQUENCY RANGE : Fo $\sim$ 20 kHz R10(1/3 oct)

### 3.7 BUZZ AND RATTLES : SPEAKER UNIT MUST BE FREE AUDIBLE NOISE AT (2.52)V rms SINE

WAVE BETWEEN Fo AND 20kHz FREQUENCY.

## 4.STRUCTURE OF MICRO SPEAKER



**5. GENERAL REQUIREMENTS**

5.1 WEIGH : APPR. 1.74g ± 0.3g

5.2 OPERATING TEMPERATURE RANGE : -40°C TO 85°C

5.3 STORAGE TEMPERATURE RANGE : Temperature : 20 ± 5°C, Humidity : 50 ± 5°C

**6. RECOMMEND STORAGE CONDITION**

6.1 상온(20~25°C)직사광선을 받지 않고 통풍이 되는 곳에서 관리 할 것.

6.2 5단 이상 적재 하지 마십시오.

**7. HANDLE WITH CARE**

7.1 임의로 분해하지 마십시오.

7.2 열이나 무리한 충격, 습기나 철 가루 또는 부식성 가스가 많은 곳에 보관하지 마십시오.

**8.REGARDING THE CLEAR USAGE**

제품특성에 영향을 미칠 수 있으므로 세척제 사용을 금함.

**9.GUARANTEEE TERMINATION**

Temperature : 20± 5°C, Humidity :50± 5°C 조건하에 36 month

**10.RoHS**

10.1 RoHS (유해물질 사용 제한 지침) 적합 품

**11.MTTF(Mean Time To Failure)**

11.1 평균 고장 수명 120 hour

**12.CQP TEAM MEMBER CONTACT LIST**

Name	Area of responsibility	Direct line number	Mobile number
S.W.KANG	Material eng.	032-623-6111	010-6400-2008
J.H.SEO	Acoustic eng.	032-623-6112	011-9056-4176
H.S.KIM	Quality Team	032-623-6113	010-2271-1564
J.W.KIM	Domestic sales	032-623-6111	011-9868-2962

### 13.QUALIFICATION TESTS

- AFTER TEST

Measurement shall be done after 24 hours of conditioning at 20°C.

Sensitivity difference at 1kHz shall be within  $\pm 3\text{dB}$  from initial value after test.

- HIGH TEMPERATURE TEST(IEC 60268-5-25.1)

High temperature :  $+ 85^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Duration : 96 hours

- HUMIDITY TEST(IEC 60268-5-25.2)

Temperature :  $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Relative humidity : 95%

Duration : 88 hours

- LOW TEMPERATURE TEST (IEC 60268-5-25.1)

Low temperature :  $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Duration : 96 hours

- TEMPERATURE CYCLE TEST (IEC 60268-5-25.1)

Temperature :  $-40^{\circ}\text{C} \pm 2^{\circ}\text{C} \leftrightarrow + 85^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Duration : 45 min 45 min

Cycle : 27 cycles

- LOAD TEST (IEC 60268-5-17)

Input power : 0.8W(2.52v), EIA

Duration : 96 hours

- DROP TEST (Under the unit) (자체 규정)

Height : 1.5M

Cycle : 24cycles

Drop face : iron plate

### 14.OUTGOING INSPECTION

14.1 겉모양 : 치명불량 : KS Q ISO 2859-1 보통 1회 G-II C = 0

중 불량 : KS Q ISO 2859-1 보통 1회 G-II C = 0

경 불량 : KS Q ISO 2859-1 보통 1회 G-II AQL = 0.65

14.2 치수 : 체크검사 : n=20, C = 0

14.3 성능 : 치명불량 : KS Q ISO 2859-1 보통 1회 G-II C = 0

중 불량 : KS Q ISO 2859-1 보통 1회 G-II C = 0

14.4 분해검사 : 체크검사 n=5, C = 0

예) 겉모양 : 치명불량 : FRAME 깨짐 , GRILL 찌그러짐 등등

중 불량: WIRE 탈피부 끊어짐 등등

경 불량: FRAME 인두 터치 자국 등등

성능 : 치명불량: 제품 Dead(무음) 등등

중 불량: 락카 FRAME HOLE 막힘 등등

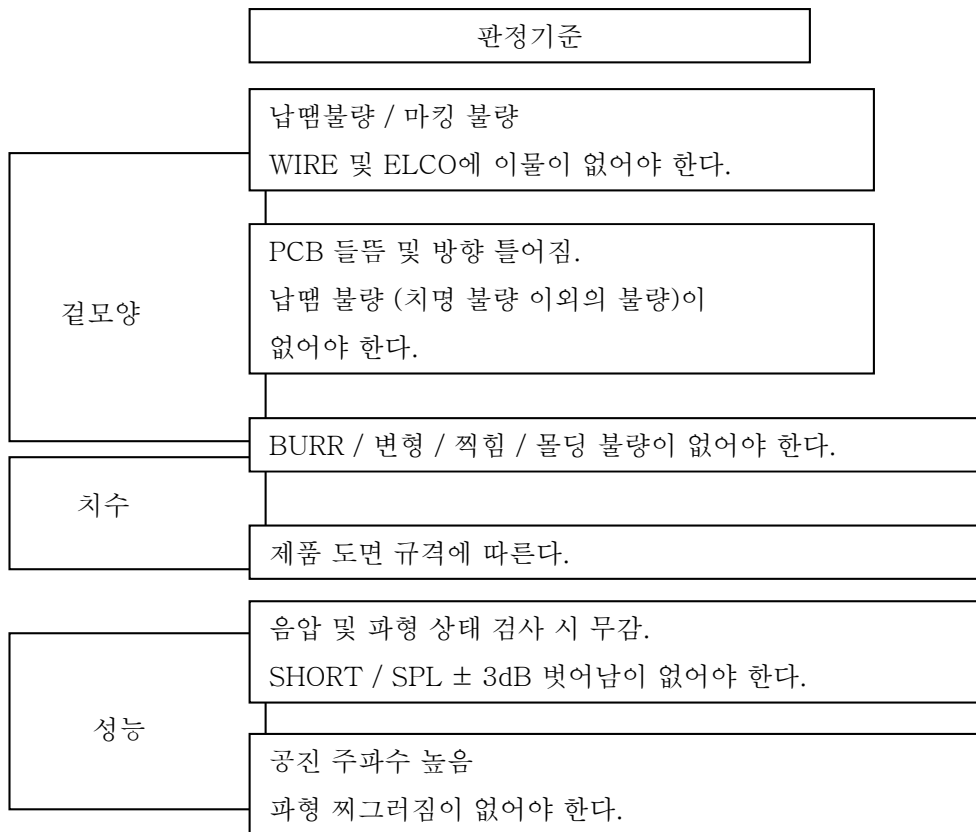
15. TEST AND INSPECTION METHOD.

- 15.1 겉모양 : 파손/이물/납땜상태/P.C.B 들뜸/ 마킹 상태/P.C.B 평탄도 확인 기타 외관 상태 확인
- 15.2 치수 : 제품 도면에 작성된 측정 부위를 측정.
- 15.3 성능 : 음압, 소비전류, 파형상태 확인

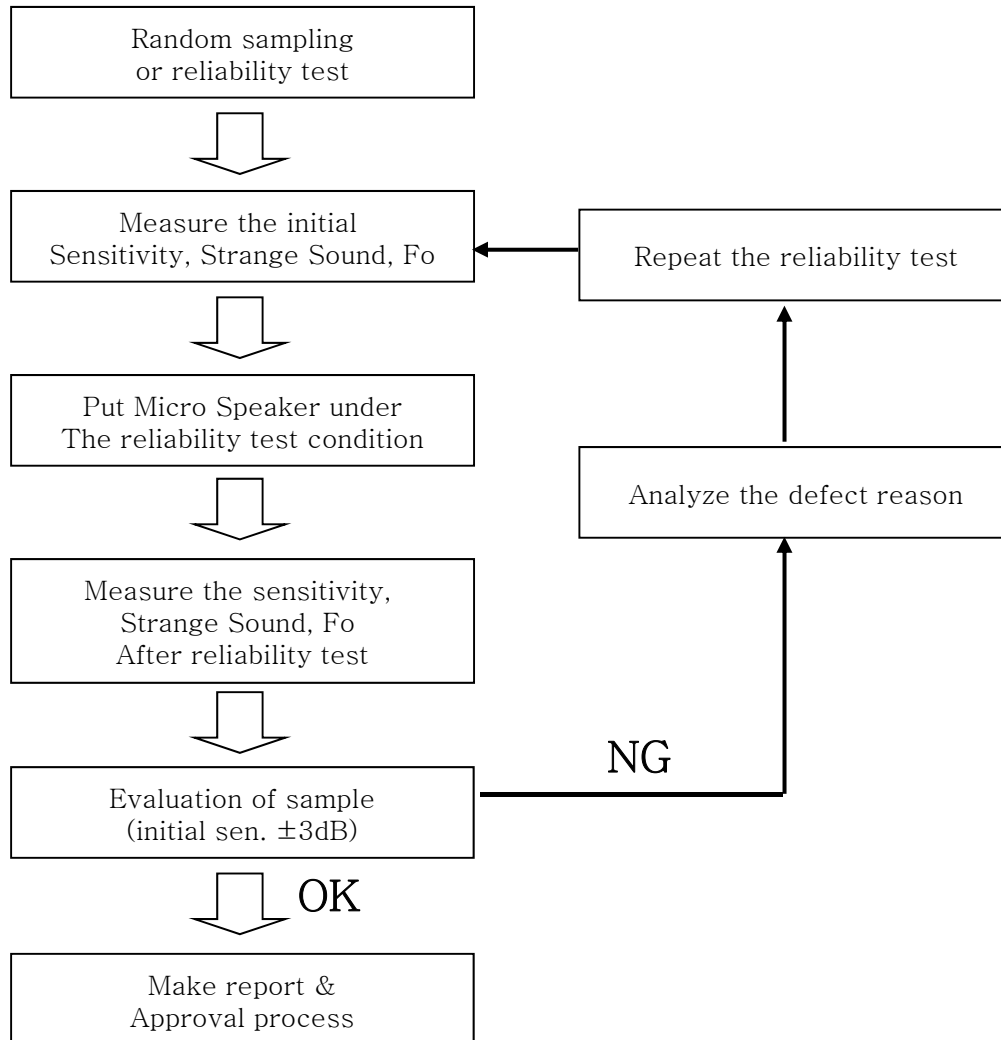
16. SOLER TYPE(MAKER)

- 16.1 PB-FREE : SR-34 SUPER(HSE02)

17. PASS/REJECT STANDARD



18. RELIABILITY MEASUREMENT FLOW



-Sample size

10pcs for each test

- Measurement item

Sensitivity, Strange Sound, Fo

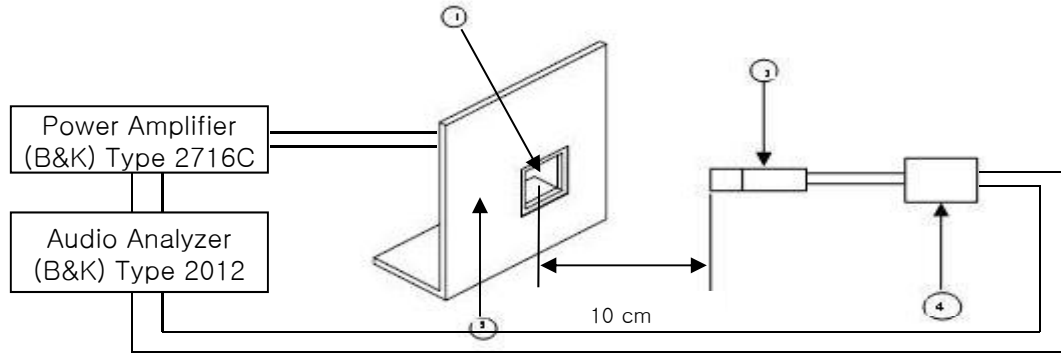
-Measurement item

After test, High temperature test, Humidity test, Vibration test,

Low temperature test, Temperature cycle test, Load test, Drop test



19. ELECTRICAL CHARACTERISTICS MEASUREMENT



1	Dynamic Speaker	SG-178B9
2	Standard Baffle Box	52cm x 56cm
3	Microphone	B & K 4191
4	Analyzer	B & K 2012

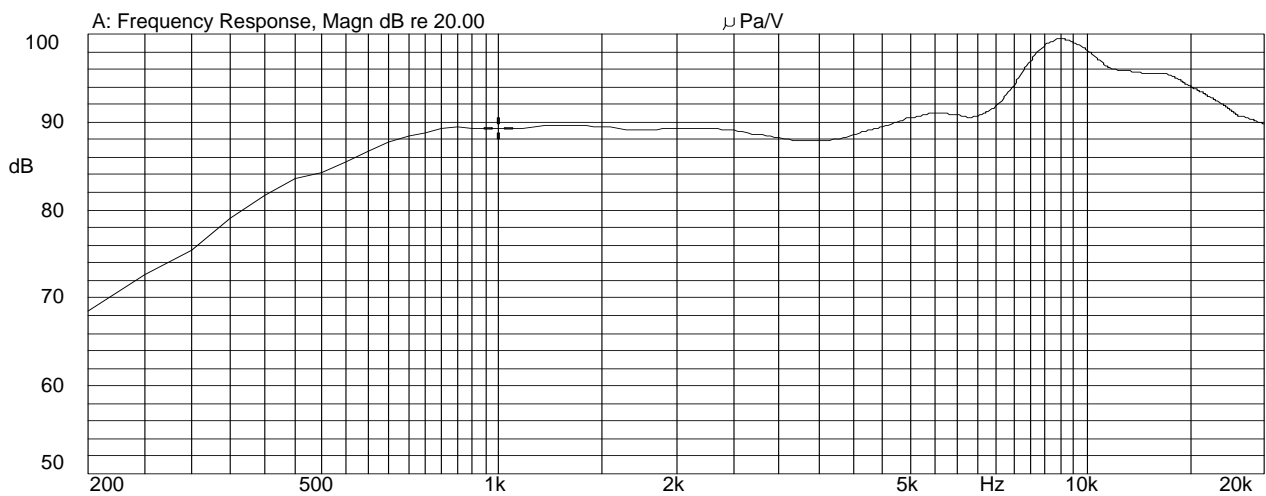
대기 조건 (IEC K60268-1)

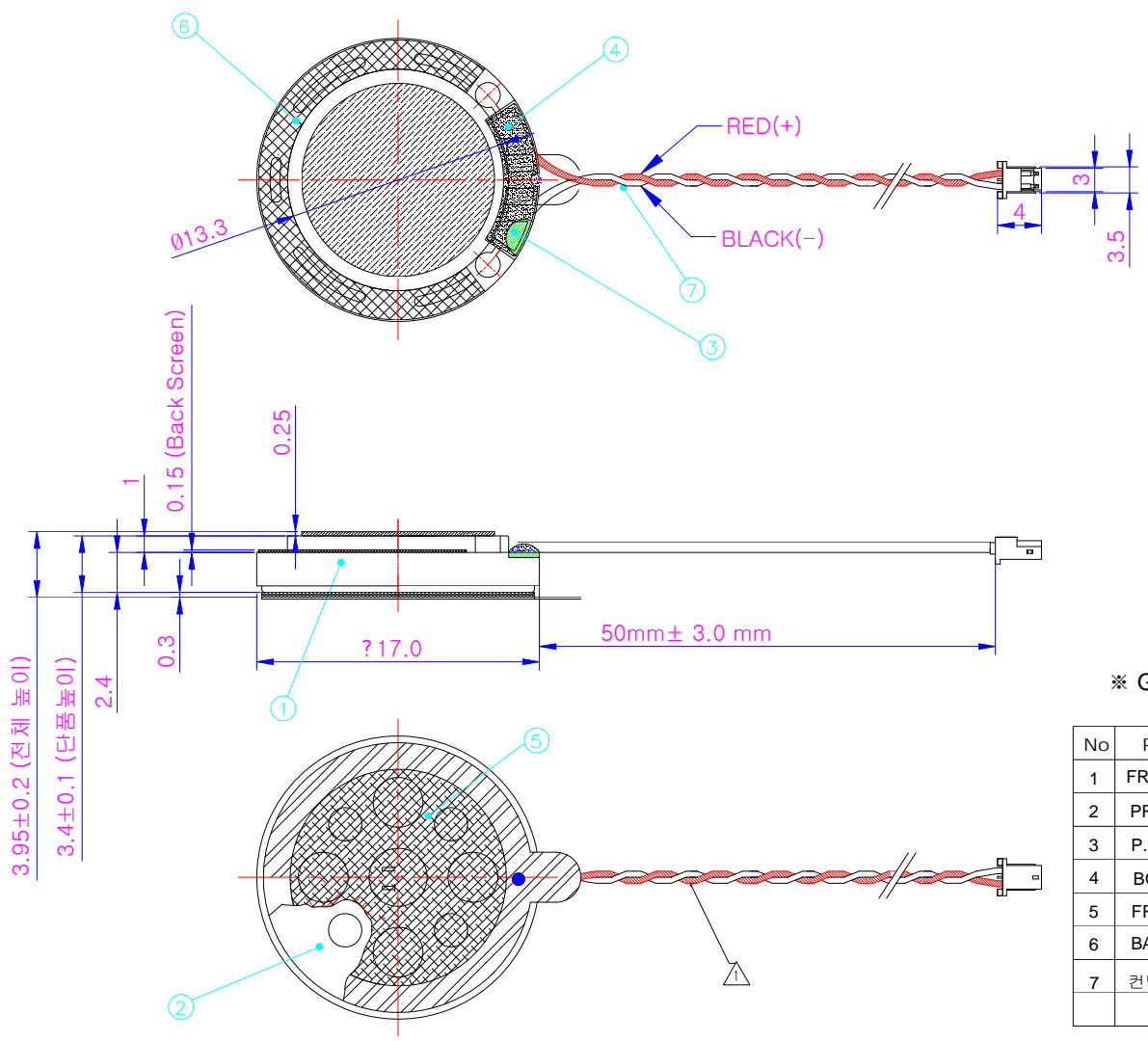
온도: 15°C ~ 35°C

상대 습도: 25% ~ 75%

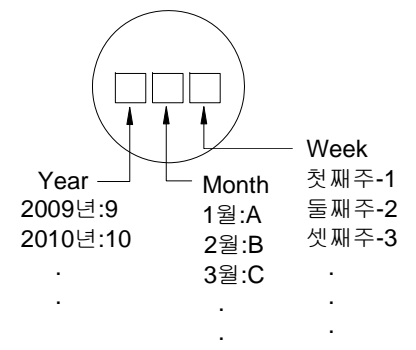
대기압: 86kPa ~ 106kPa (860mbar ~ 1060mbar)

20. CHARACTERISTICS GRAPH (MICRO SPEAKER)





MARKING STAMP



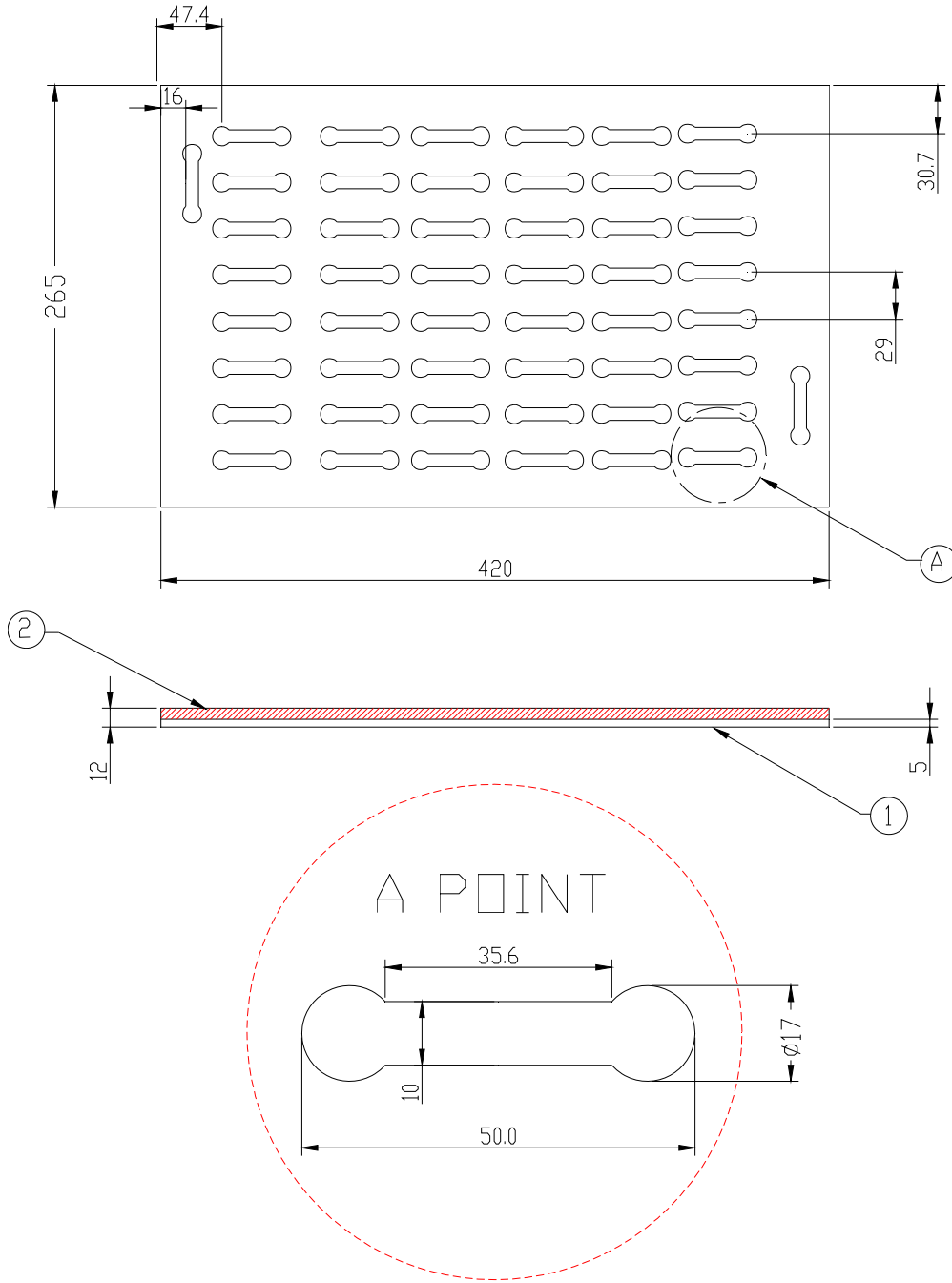
※ GENERAL TOLERANCE (mm) : ± 0.50

No	PART NAME	Q.TY	MATERIAL
1	FRAME	1EA	PBT GLASS 30%
2	PROTECTOR	1EA	SUS 304 1/2H (0.15T)
3	P.C.B	1EA	EPOXY FR-4
4	BOND	-	ADHESIVE FOR PROTECT
5	FRONT SCREEN	1EA	Filter : #230, TAPE : SK806
6	BACK SCREEN	1EA	Filter : #2B, TAPE : SK806B 전고0.3T 양면
7	컨넥터 WIRE	1EA	모렉스

△	WIRE TWIST 및 공차 치수 변경	11.12.21		
Rev	NOTE	Date	Drawn	Appd.by

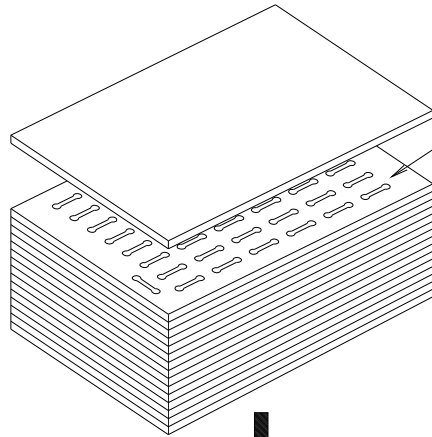
DRAWN	CHECKED	APPROVED	업체명	☉
내부결재완료			제품명	SG-178B9
UNIT	mm	SCALE	1/1	날 짜
				2009-11-19

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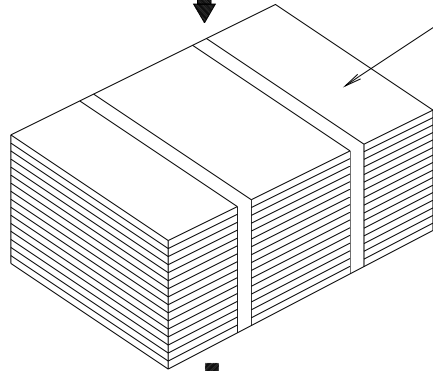
					②	PE	1			
					①	PVC	1			
REVISION	DATE	NOTE	SIGN	APPD.BY	NO.	PART NAME	Q'TY	MATERIAL	TREATMENT	REMARK
SCALE	:	DESD.BY	CHE.D.BY	APPD.BY	DATE	2012-07-22			⊕	
TOLERANCE					MODEL NO.	SG-178B12				
UNIT		최경수	김영학	강신원	TITLE	PAD				
					DRAWING NO.	PAD-178B12-100				

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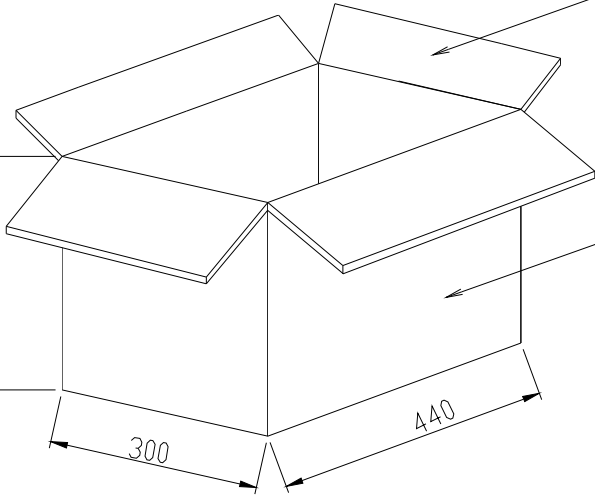
1

NO	QTY	MATERIAL	TOTALG
①	IPAD ⇒ 100 PCS	SKSB(SW)	10Kg
②	1BOX ⇒ 20 PAD	P.E,SKSB(SW)	
③	1BOX ⇒ 1,500PCS	SK3SK(DW-1)	
④	원산지 표기	Korea, China	



2

Attention Handling Precautions  
 1. Load prohibitions of 5 only above.  
 2. Be care for impact.  
 3. Load direction attention.  
 4. Protect from moisture.



3

4

라벨 표기 방법

CODE NO	-
MODEL	SG-178B9
Q'TY	1,500EA
USER	-
DATE	-

REVISION	DATE	NOTE	SIGN	APPD.BY	NO.	PART NAME	Q'TY	MATERIAL	TREATMENT	REMARK
1										
SCALE	1 : 1	DESD.BY	CHE.D.BY	APPD.BY	DATE	2009-12-09				
TOLERANCE					MODEL NO.	SG-178B9				
UNIT	mm	최경수	김영학	강신원	TITLE	BOX				
					DRAWING NO.	BOX-178B9-100				