OBO Pro.2	SPECIFICATIONS	MODEL NO OBO-45AL1
	PART NAME PAPER CONE SPEAKER	SHEET 1 OF 9

ALTERNATION HISTORY

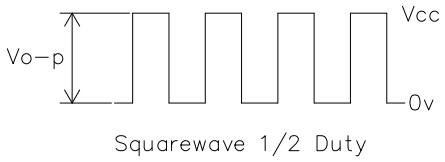
Marking	Date	EC NO.	REV.	Description	Page	PREPARE BY	APPROVE BY
※1	AUG..11,09	DG0910015	D	1.Conformity RoHS Directive (2002/95/EC) Requests. 2.Increase the Hole	9	王志偉	謝明福

REV.	DATE	PREPARED BY	CHECKED BY	APPROVED BY
D	AUG,11,09	王志偉	楊冉	謝明福

MODEL NO : OBO-45AL1

Features: Conformity Rosh Directive (2002/95/EC) Requests. ※1

1. General Specifications

	Items	Spec	Conditions
1.1	Rated Voltage	3.0 Vo-p	
1.2	Operating Voltage	2-4 Vo-p	
1.3	Resonant Frequency	2300Hz	
1.4	Sound Pressure Level	Min 83dB	Standard State,Standard Drive ciruit,Rate Voltage,Distance at 0.1m(A-weight)2300Hz Squarewave 1/2 Duty.
1.5	Average Current Consumption	Max 80mA	
1.6	Coil Resistance	16±3Ω	
1.7	Operating Temp. Range	-30℃~+70℃	SPL≧80dB at “1.4”
1.8	Storage Temp. Range	-40℃~+85℃	
1.9	Housing Material	LCP	
1.10	Weight	0.6g	

2. Standard test Conditions :

2.1 Standard State

Ordinary Temperature	15℃ to 35℃
Ordinary Humidity	25% to 85%
Ordinary air pressure	860 to 1060hPa

Ln case of doubtful juagment, the test is re-performed under Basic State.

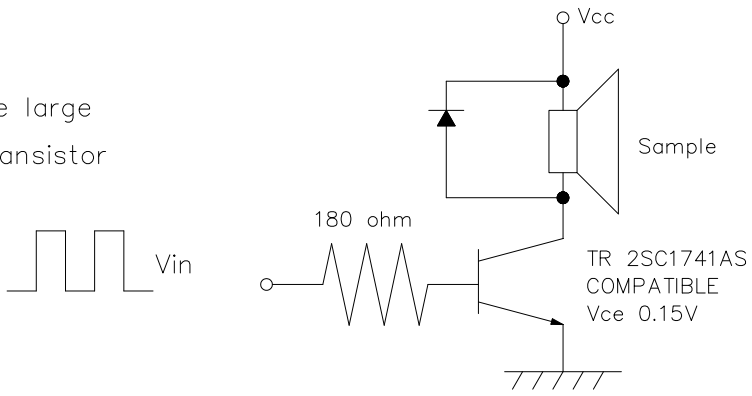
2.2 Basic State

Temperature	20±2℃
Humidity	60% to 70%
Ordinary air pressure	860 to 1060

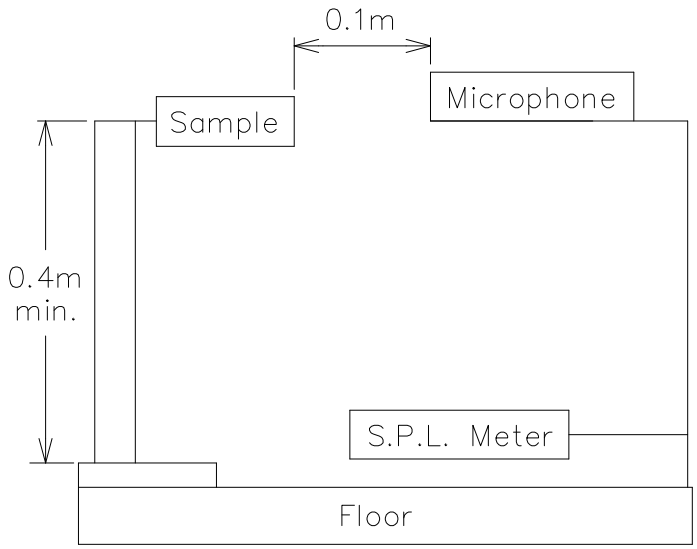
3. Test method :

3.1 Standard Drive Circuit

Signal amplitude should be large enough to saturate the transistor which drives the buzzer.



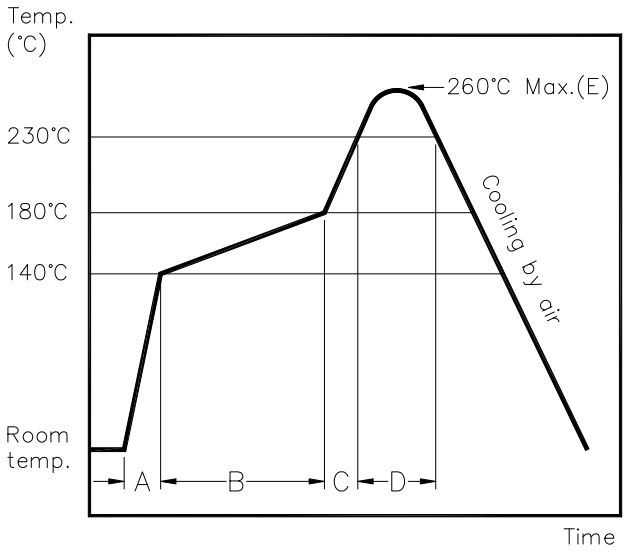
3.2 Standard Test Fixture



4. Soldering Condition : (※1)

4.1 Reflow Soldering

Recommendable reflow soldering condition is as follows.



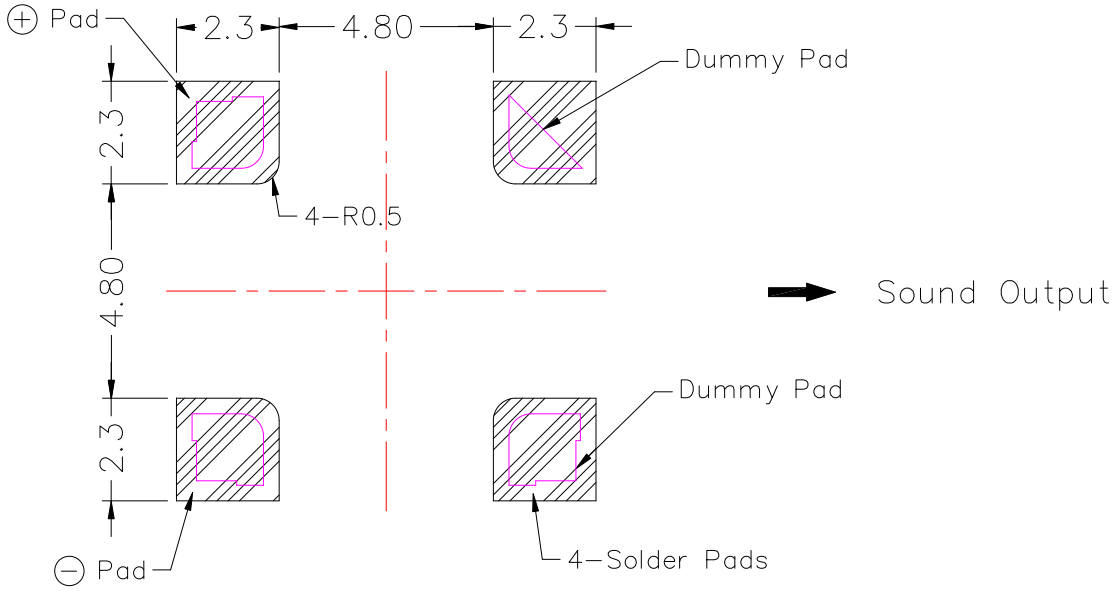
NO.	Items	Condition	Uint
A	Temp.rise gradient	1~4	℃/sec
B	Heating time	50~150	sec
	Heating temperature	140~180	℃
C	Temp.rise gradient	1~4	℃/sec
D	Time over 230℃	48 Max.	sec
E	Peak temperature	260℃ Max	℃
	Peak-temp.hold time	Momentary	sec
Soldering		2	times

Note :
lt is requested that second reflow solering should be executed after heat of product goes down to normal temperature.

4.2 Hand Soldering (※1)

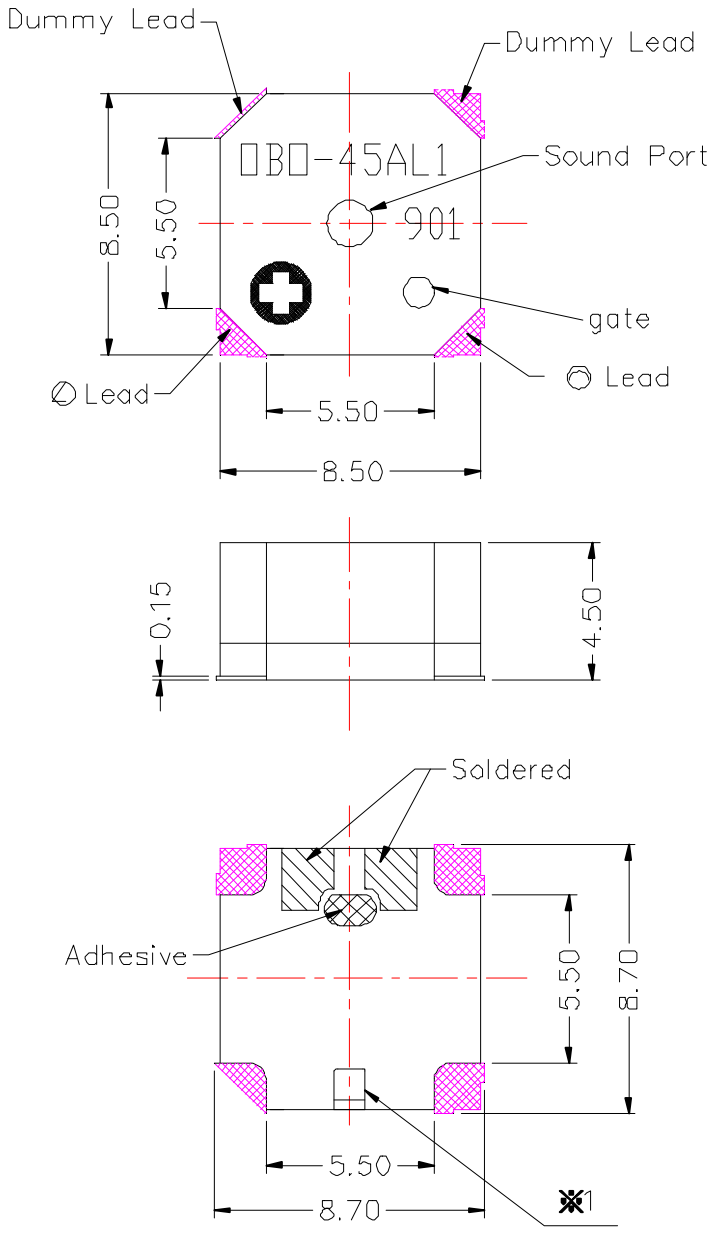
Soldering iron temperature 380℃ less than 3 second.

4.3 Soldering Pattern



5. Mechanical Layout and Dimensions:

Tolerance: ±0.2mm Uint: mm



Note : Meaning of Stamp Mark

901 : Production Lot No.

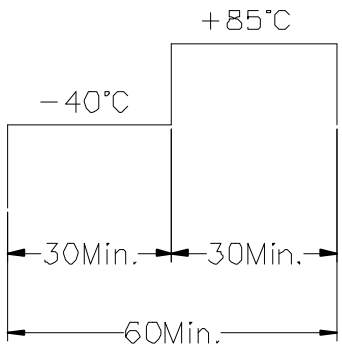
9 : Year 2009 (last 1 figures of the year)

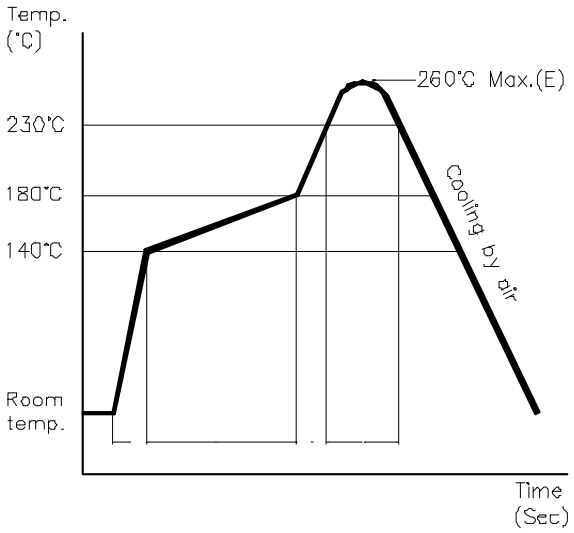
01 : week (01 ~55)

OBO-45AL1 : Model No.

⊕ : Polarity indentification mark

6. Reliability test :

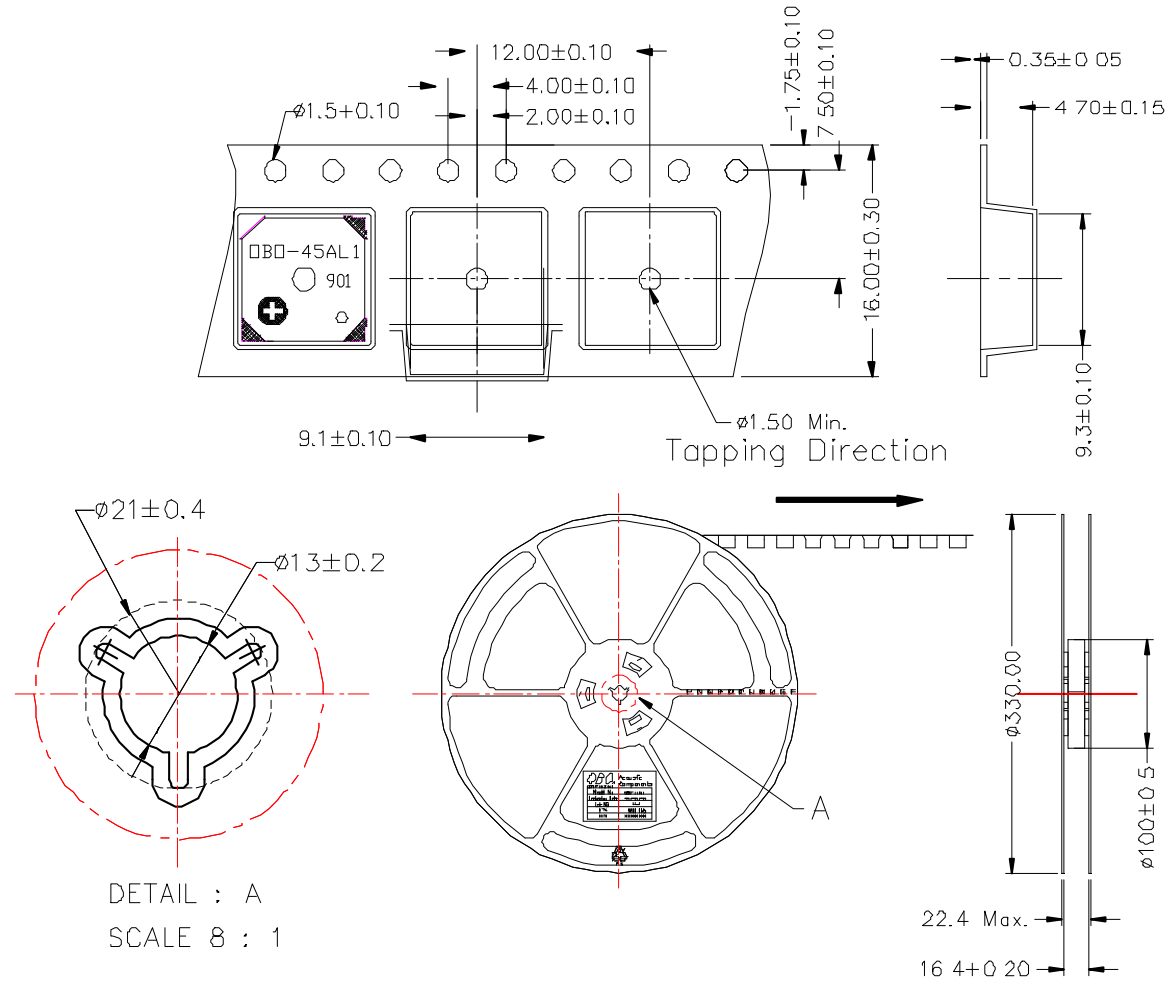
NO.	Items	Test Conditions	Evaluation Criteria
6.1	High Temp. Storage	The part shall be capable of withstanding a storage temperature of +85°C for 240 hours.	After the test the part shall meet specifications without any degradation in appearance and performance except SPL. SPL shall be 80dB or more.
6.2	Low Temp. Storage	The part shall be capable of withstanding a storage temperature of −40°C for 240 hours.	
6.3	Thermal Shock	The part shall be subjected to 50 cycle. One cycle shall consist of : transfer time : 10 minutes 	
6.4	Humidity Test	The part shall be subjected to +60°C, 90% RH for 240 hours, and expose to room temperature for 6 hours.	
6.5	Vibration	10 − 55 − 10Hz, Sinewave Sweep 15 min. X,Y,Z 3 Direction 2 hours each, Total 6 hours.	
6.6	Drop test	Drop on hard wood board of 5cm. thick, any direction, 10 times, at the height of 150cm	

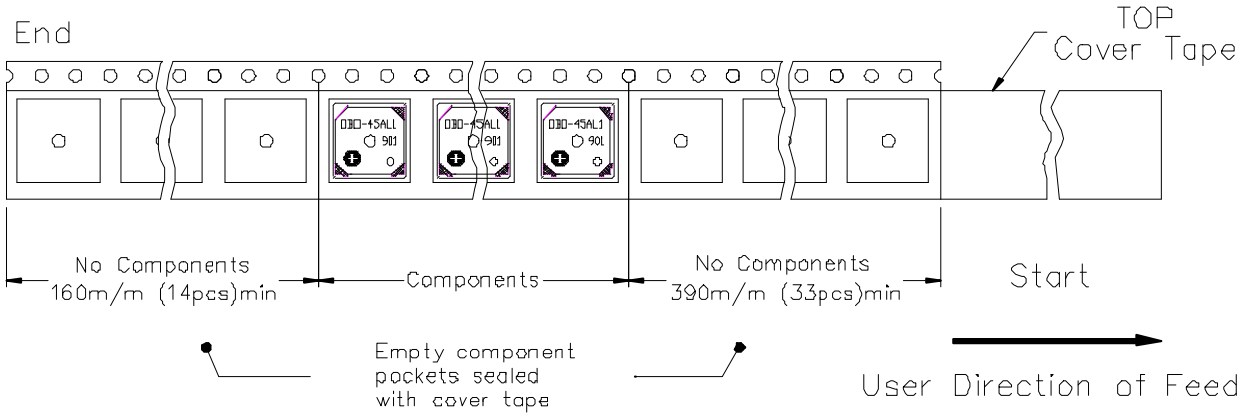
NO.	Items	Test Conditions	Evaluation Criteria
6.7	Ordinary Temp. life	The part shall be subiected to 240 hours at 25±10℃. Input 3.0Vp-p Squarewave 1/2duty 2700Hz	
6.8	High Temp. life	The part shall be subiected to 240 hours at +70℃. Input 3.0Vp-p Squarewave 1/2duty 2700Hz	
6.9	Low Temp. life	The part shall be subiected to 240 hours at -30℃. Input 3.0Vp-p Squarewave 1/2duty 2700Hz	
6.10	(※1) Reflow		a. No abnormality should be found after the test b. Good soldering to meet soldering requirements

Notes :

As this product is not protected from foreign material entering, please make sure that that any foreign materials (e.g. magnetic powder, washing solvent, flux, corrosive gas) do not enter this product in your production processes The functional degradation (e.g. SPL down) may occur if foreign material enter it.

7.Packing


12.00±0.10
4.00±0.10
2.00±0.10
ø1.5+0.10
1.75±0.10
7.50±0.10
16.00±0.30
9.1±0.10
ø1.50 Min.
Tapping Direction
0.35±0.05
4.70±0.15
9.3±0.10
ø21±0.4
ø13±0.2
DETAIL : A
SCALE 8 : 1
A
ø330.00
ø100±0.5
22.4 Max.
16.4+0.20


End
TOP
Cover Tape
No Components
160m/m (14pcs)min
Components
No Components
390m/m (33pcs)min
Start
Empty component
pockets sealed
with cover tape
User Direction of Feed

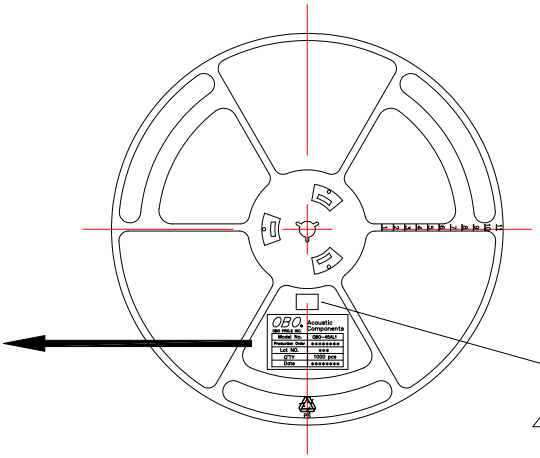
OBO Pro.2	SPECIFICATIONS	MODEL NO OBO-45AL1
	PART NAME PAPER CONE SPEAKER	SHEET 9 OF 9

Lebel content

OBO® Acoustic Components

OBO PRO.2 INC.

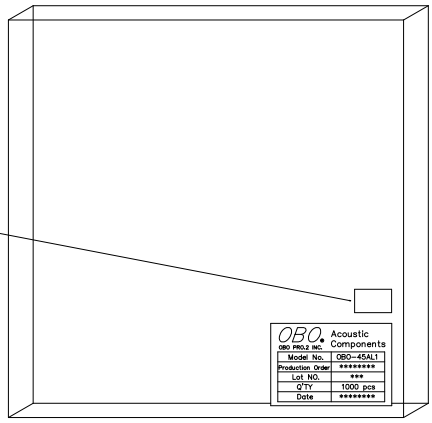
Model No.	OBO-45AL1
Production Order	********
Lot NO.	***
Q'TY	1000 pcs
Date	********



(※1)

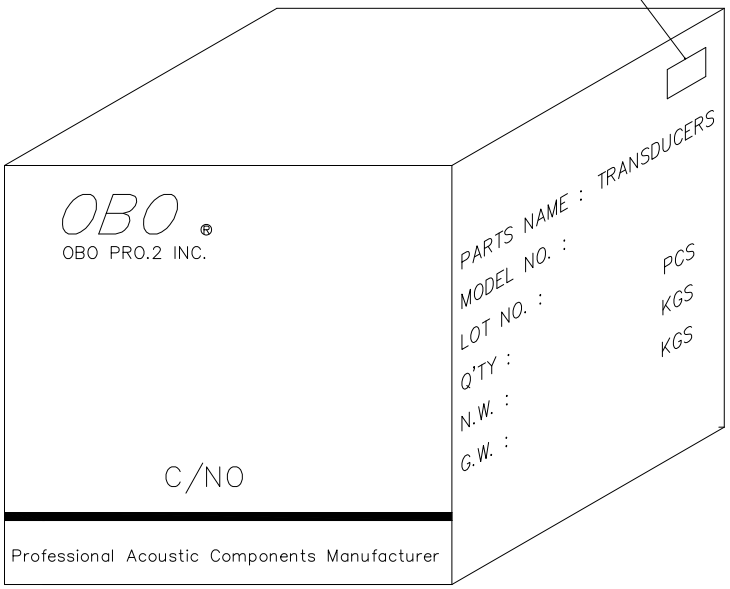
RoHS Tape

Inside box



RoHS Tape (※1)

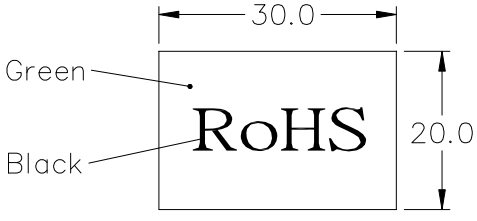
Carton



1 Reel / Inside box (33.3*2.4*33.5)

10 Inside box (10000pcs) / Carton (34.5*26.5*35.3)

(※1)



RoHS Tape (30*20 mm)