

Model Type : External Drive Piezo Transducer

Description : 16mm x 16mm, 2.5mm height, 80dBA at 4KHz/3Vp-p/10cm,

- 15000pF +/- 30% at 100Hz, LCP, SMD, -40~+120°C,
- Tape & Reel packing, fulfil RoHS 2002/95/EG.

## SPECIFICATION

### 1. Electrical Data :

- 1-1 S.P.L.    : 80dB min. (3.0Vp-p Square Wave/10cm,4KHz)
- 1-2 Frequency Response  4000 Hz (see Fig. 6)
- 1-3 Capacitance   : 15000 pF +/- 30% at 100 Hz
- 1-4 Max. Input Voltage  : 25 Vp-p
- 1-5 Max. Current   : 1 mA

### 2. Housing :

- 2-1 Material  LCP (Pb Free version)
- 2-2 Color  : Ivory

### 3. Appearance :

- 3-1 There should be no remarkable stain, rust or flaw
- 3-2 Side emission hole without masking label
- 3-3 Surface Mount (SMD)

### 4. Temperature :

- 4-1 Operating Temperature  : -40 °C ~ +120 °C
- 4-2 Storage Temperature  : -40 °C ~ +120 °C

### 5. Dimension : See Fig.8 Mechanical Drawing

### 6. Weight : 1.0 g

## INSPECTION STANDARD

Item Tested	Standard	AQL	Level	Inspection by means of	Remark
No Sounding	Within the operating voltage	0.25	II	Ear	At each lowest, rated, highest operating voltage, there should be no sounding, harsh sound and remarkable sound decrease at rated frequency, sine wave.
Sound Output	More than min. 80dB at rated signal	0.65	II	Sound Pressure Level	Distance at measuring distance 10cm (see. Fig.1)
Current	Less than 1mA	0.65	I	Multimeter	(0.5 or 1.0 Class) input signal
Capacitance	15000pF +/- 30%	0.65	I	Multimeter	Measured at 100Hz
Outer Dimension (length x width)	16.0 x 16.0 +/- 0.3mm	1.5	S-3	Electronic Caliper	Measured at the maximum dimension (length x width)
Overall Height	2.5 +/- 0.3mm	1.5	S-3	Electronic Caliper	Measured at the maximum height of the main body only
State of solder	-----	1.0	II	Magnifying Glass	Soldered points and/or coil disposition should be proper, (Crossed coil wires should not be accepted).
Rust	-----	1.0	II	Visual	Any Rust should not be accepted
Stain	-----	1.5	II	Visual	It should be no remarkable Stain
Adhesion	-----	1.5	II	Visual	Adhesion should be made sufficiently and it should be no outflow of adhesive
Other Appearance	-----	1.5	II	Visual	-----

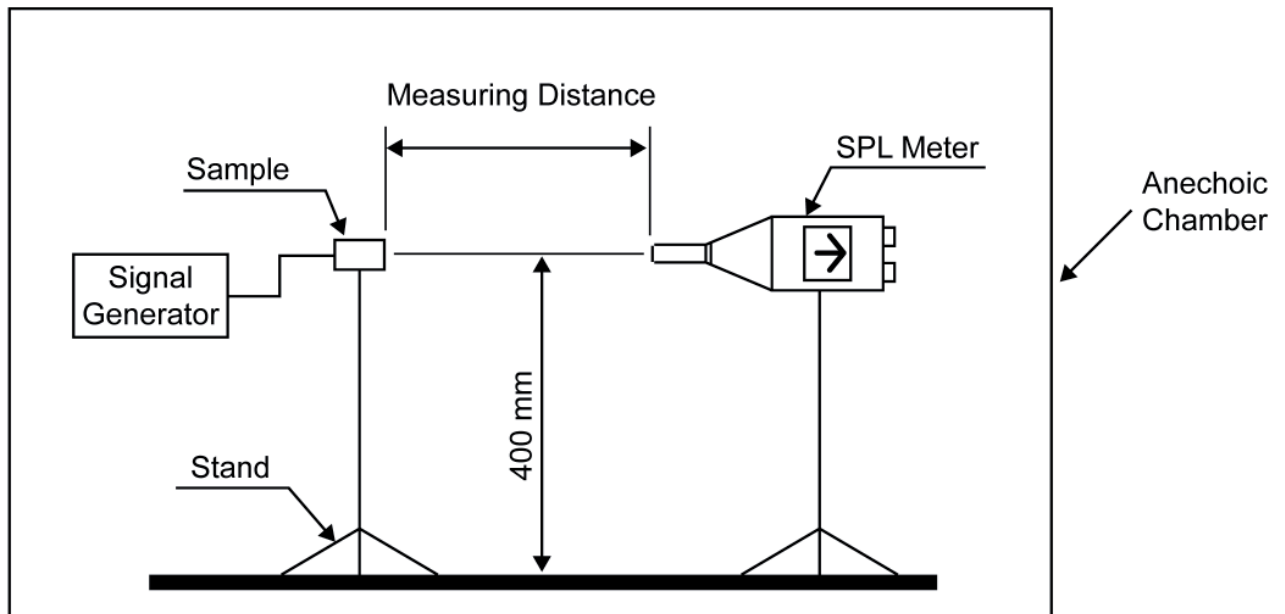
## RELIABILITY TEST

Testing Item	Method of the Test	Standard
Storage in high temp.	Storage in test box for 240 hours under the highest storage temperature then expose to the room temp. for 2 hours	All specifications must be satisfied after the test
Storage in low temp.	Storage in test box for 240 hours under the lowest storage temperature then expose to the room temp. for 2 hours	All specifications must be satisfied after the test
Life test in the room temp.	Operate the piezo transducer continuously for 1000 hours with applying at the rated signal	All specifications must be satisfied after the test
Temp. / Humidity Cycle Test	Make the test for 20 cycles without applying power as Fig.3 then expose to the room temp. for 2 hours	All specifications must be satisfied after the test
Vibration Test	Make the test for the directions of X, Y and Z as Fig.4 for 2 hours each(total 6 hours) to-and-fro sweep time(from 10 to 55 Hz and then 55 to 10) is 1 minute	All specifications must be satisfied after the test
Drop Test	Drop a piezo transducer naturally from the height of 700mm onto the surface of 10mm thick wooden board as Fig.5. Two directions : that is, upper and side of the buzzer are to be applied for this drop test.	All specifications must be satisfied after the test
Soldering Condition	(1) Recommendable Reflow Soldering. It is required that reflow soldering should be executed after heat of product goes down to normal. Operate the process twice as Fig.7. (2) Hand Soldering. Operate the process with 350°C within 10 sec.	All specifications must be satisfied after the test
Temp. Cycle Test	Make the test for 5 cycles without applying power as Fig.2 then expose to the room temp. for 2 hours	All specifications must be satisfied after the test

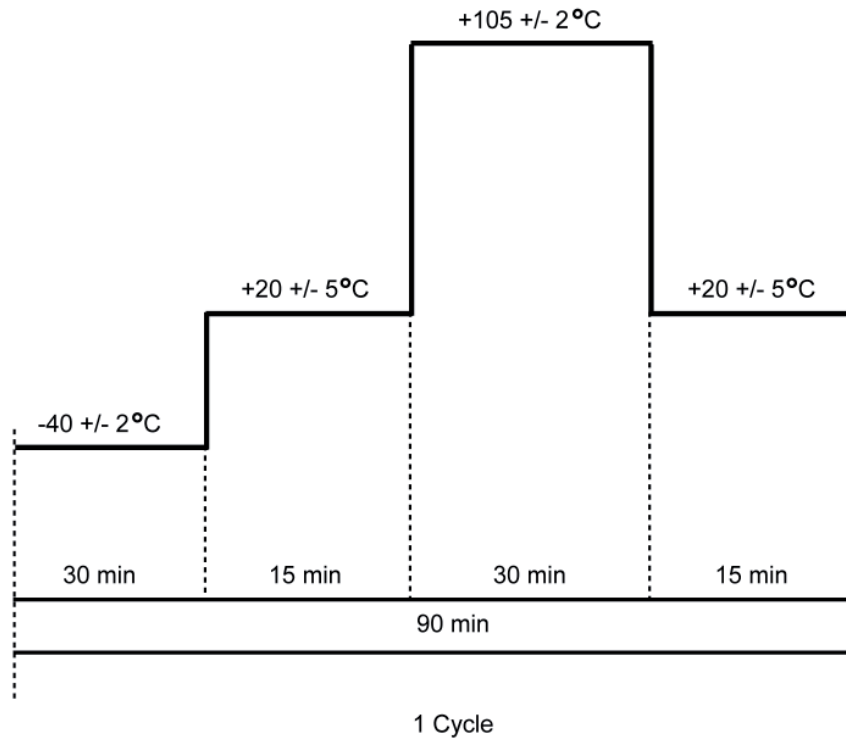
## INSTRUMENT LIST

Instrument Name	Brand / Model
Sound Level Meter	Bruel & Kjaer 2230
Audio Calibrator	Bruel & Kjaer 4231
Acoustic Chamber	Bruel & Kjaer 4232
Frequency Generator	Wavetek
XY - Recorder	Sunlight
Multimeter	Fluke

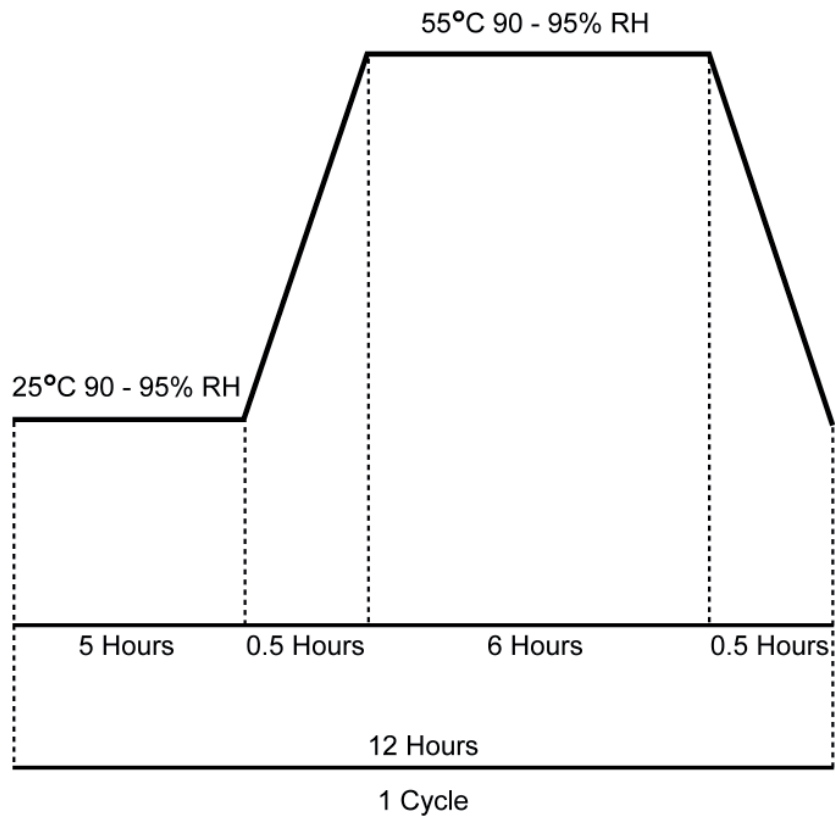
**Fig.1 Measuring Method**



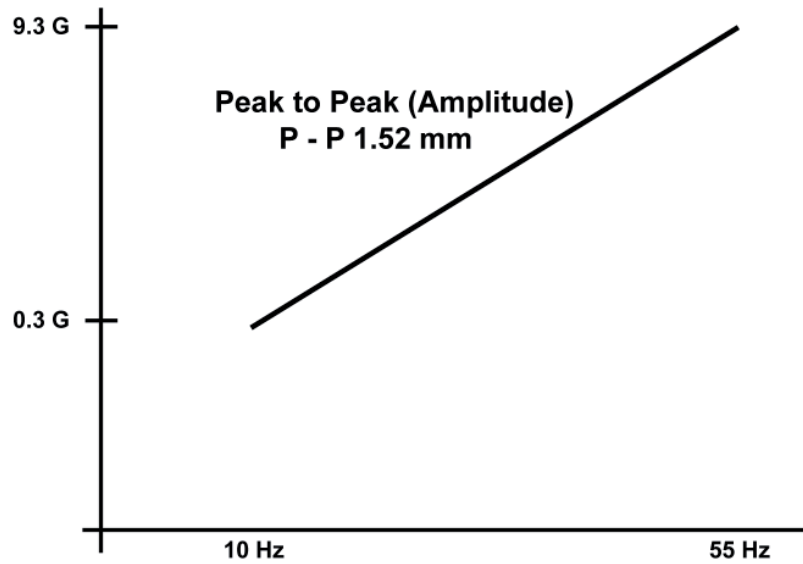
**Fig.2 Temperature Cycle Test**



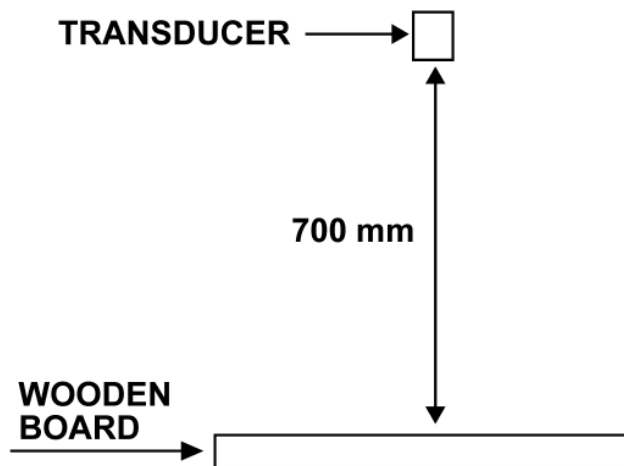
**Fig.3 Temp. / Humidity Cycle Test**



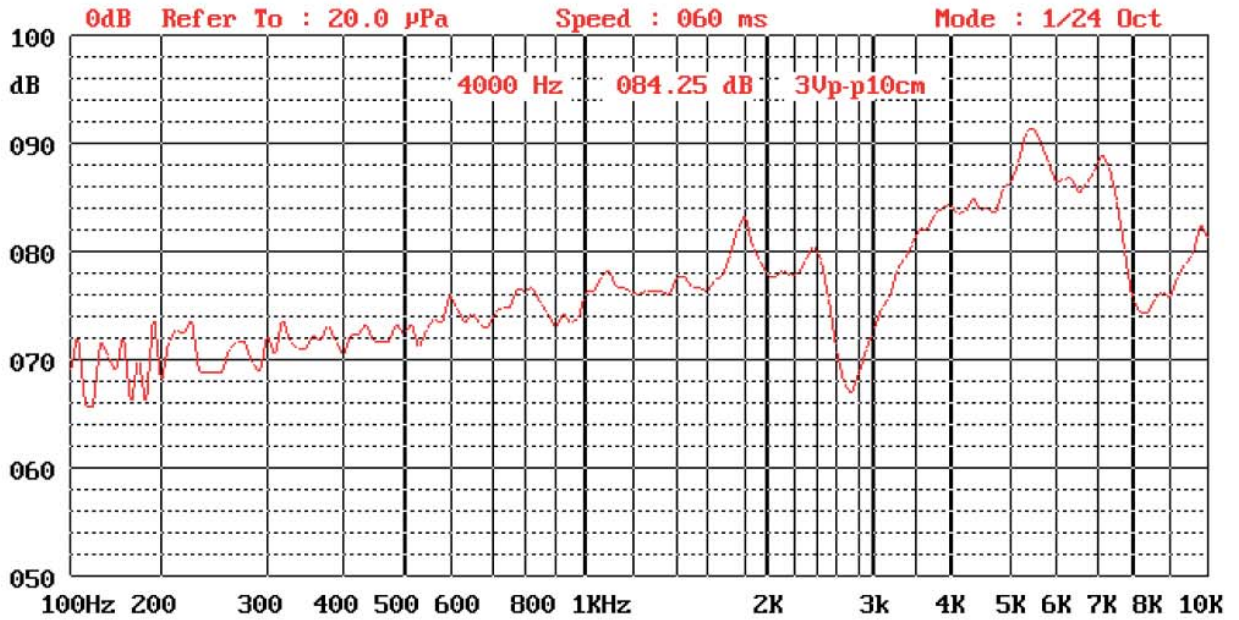
*Fig.4 Vibration Test*



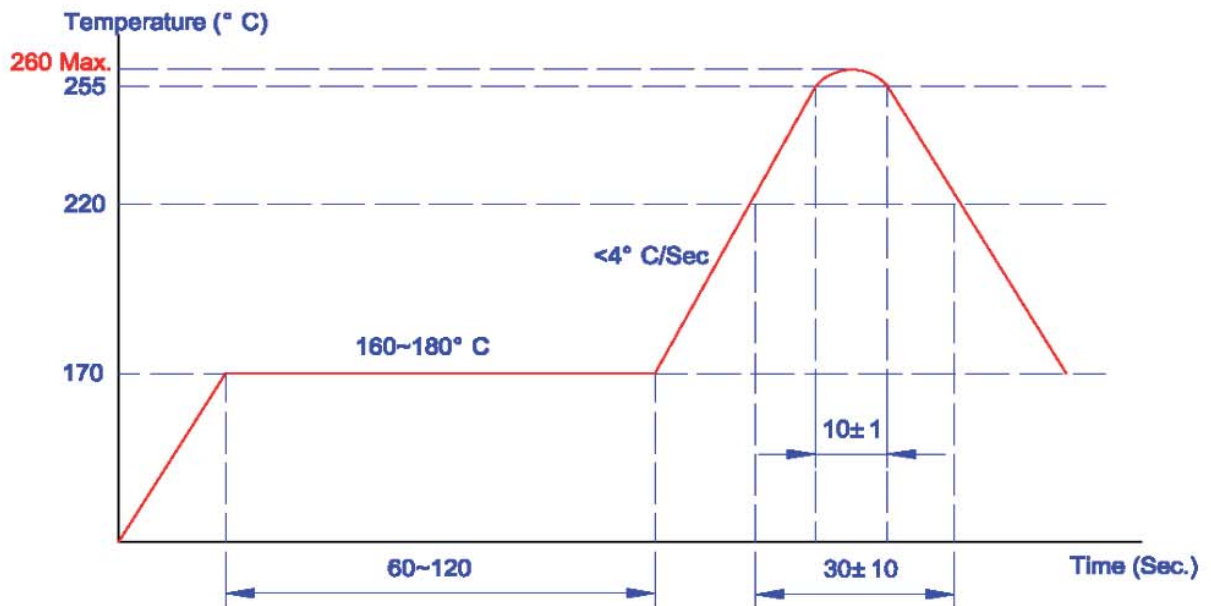
*Fig.5 Drop Test*



**Fig.6 Typical Frequency Response Curve**

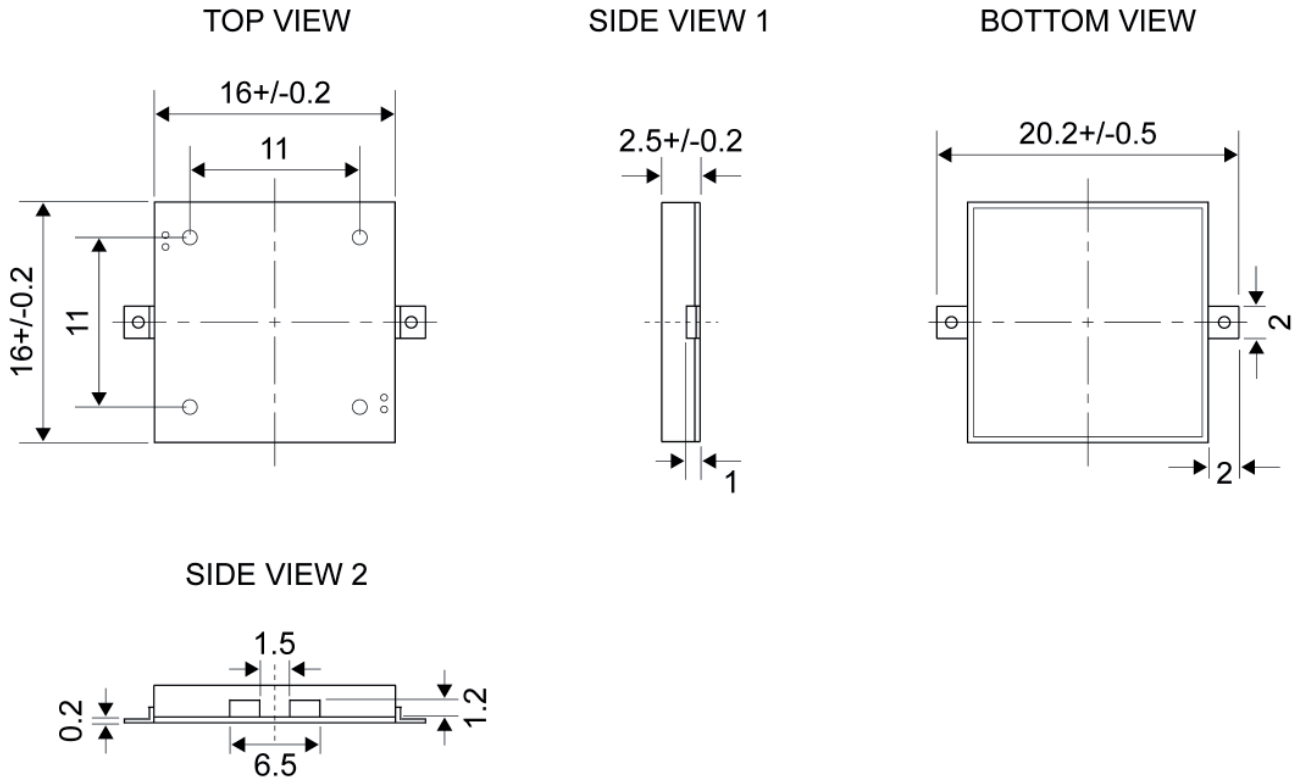


**Fig.7 Reflow Soldering Condition**





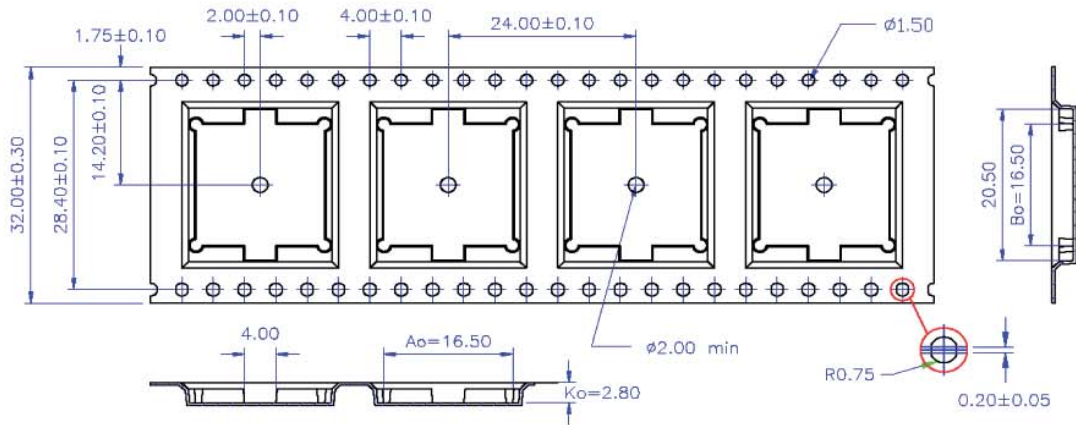
**Fig.8 Mechanical Drawing**



Dimension are in mm  
 Unspecified Tolerance are  $\pm 0.3$ mm

# PACKING DETAILS

## Tape



## Reel

