

# APPROVAL SHEET



## FHD ELECTRONICS CORPORATION

CUSTOMER NAME : \_\_\_\_\_

COMMODITY : PIEZO TRANSDUCER

FHD PART NO. : T121230-P4000E-SA

CUSTOMER PART NO. : \_\_\_\_\_

REMARK : \_\_\_\_\_

Approved by	J.J.	Prepared by	HY Shen
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<b>Customer Approval</b>			
<b>Approved</b>		<b>Rejected</b>	

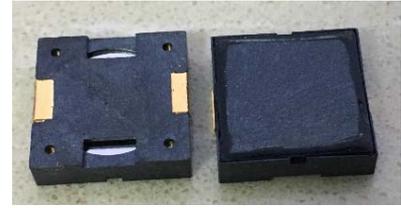
**1525 McCarthy Blvd, Suite 1000,**

**Milpitas, California 95035**

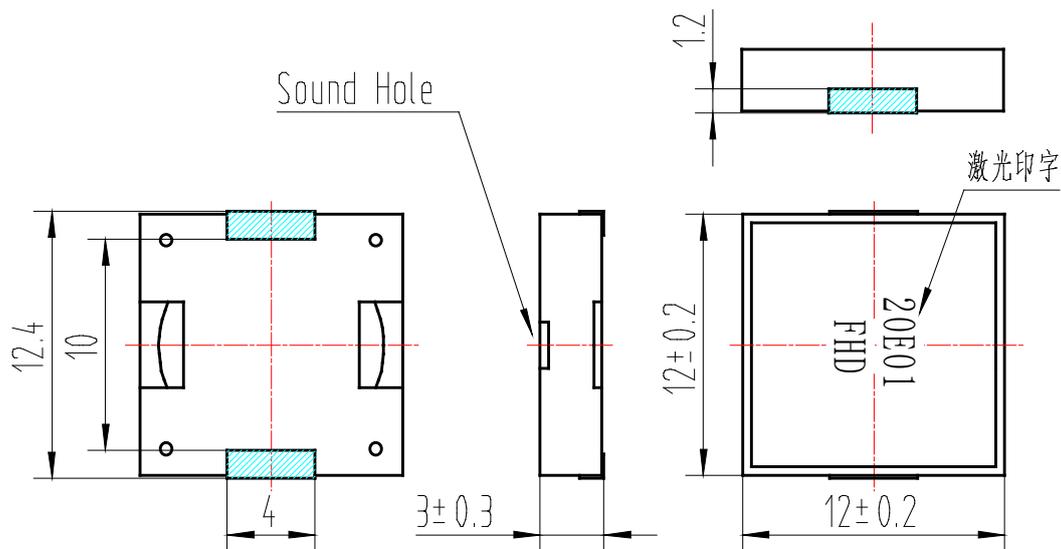
**Office: 408 457 9961 Fax: 408 457 7930**

**Email: [sales@fhdmfg.com](mailto:sales@fhdmfg.com) Website: [www.fhdmfg.com](http://www.fhdmfg.com)**



**A. PART NO.: T121230-P4000E-SA****B. SPECIFICATION**

No.	Item	Unit	Specification	Condition
1	Oscillation Frequency	KHz	4.0±0.5	square wave
2	Max Input Voltage	Vp-p	25 max	
3	Rated Voltage	Vp-p	3	
4	Rated Current	mA	MAX. 3	at 4KHz 50% duty Square Wave 3Vp-p
5	Sound Pressure Level	dB	MIN. 80 at 10cm	at 4KHz 50% duty Square Wave 3Vp-p
6	Operating Temperature	°C	-30 ~ +70	
7	Storage Temperature	°C	-40 ~ +85	
8	Dimension	mm	12 x 12 x H3.0	See appearance drawing
9	Weight (MAX)	gram	0.4	
10	Housing Material		LCP( Black )	
11	Environmental Protection Regulation		RoHS	

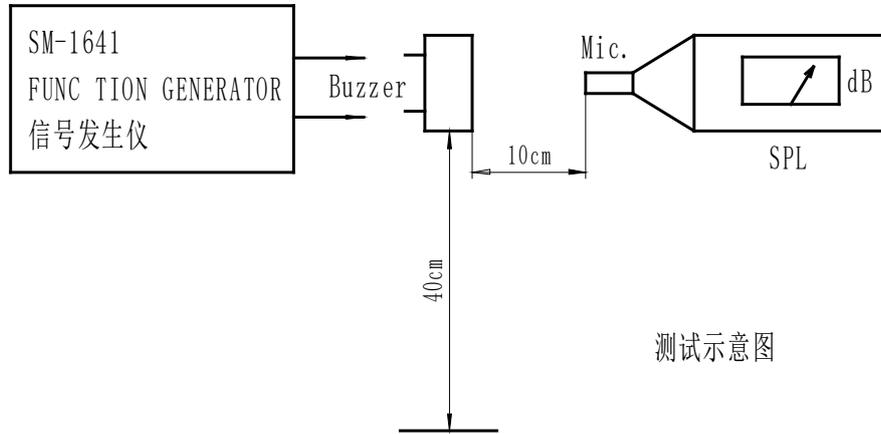
**C. APPEARANCE DRAWING**

\*Unit: mm; Tolerance: ±0.3mm Except Specified

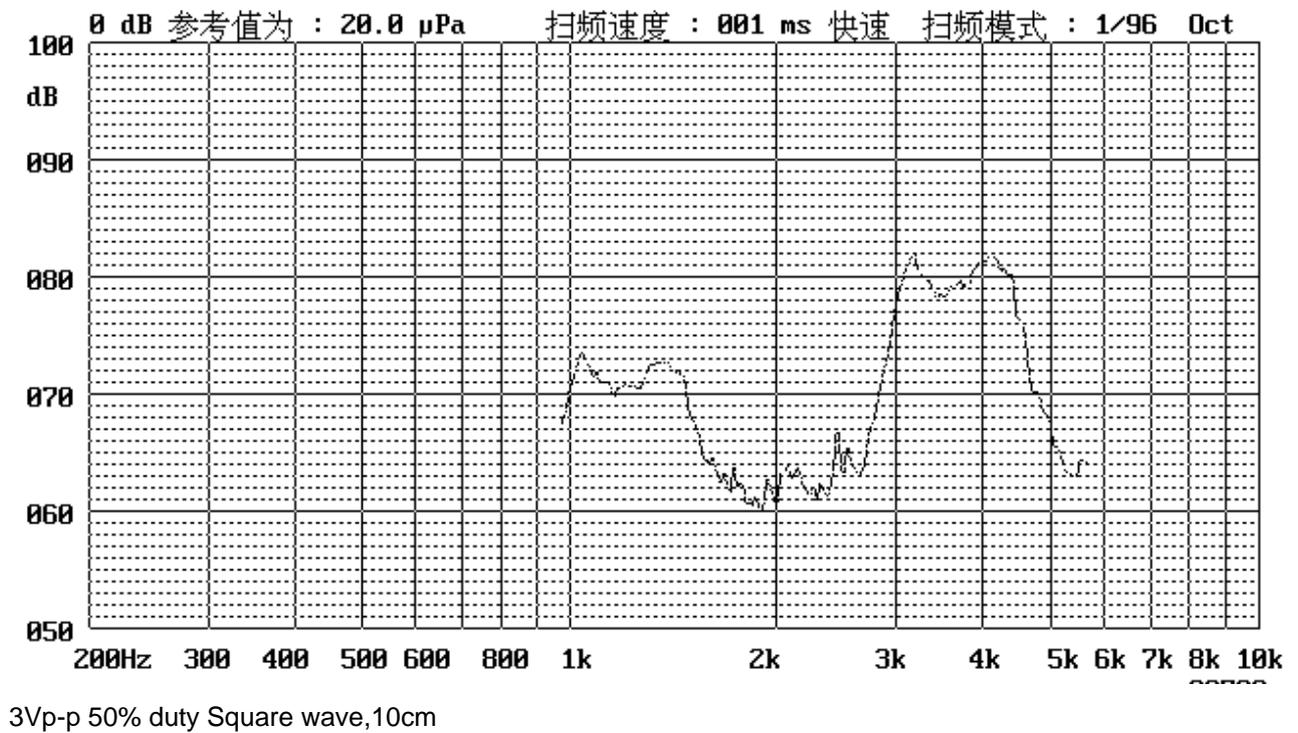
\*Terminal plate: 2 soldering pads, Gold plating Brass

### D. TEST METHOD

Standard Measurement Conditions: Temperature:25±2°C Humidity:45-65%

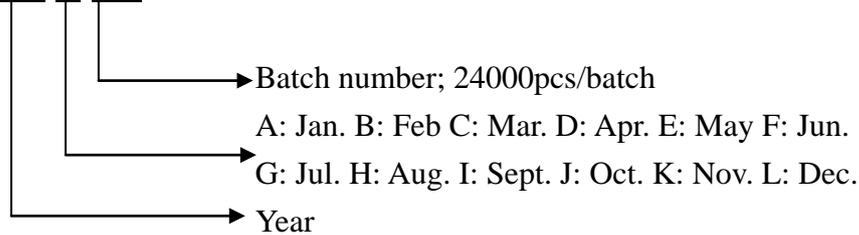


### E. TYPICAL FREQUENCY RESPONSE CURVE



## F. LOT NUMBER NOMINATION

XX X XX



## G. RELIABILITY TEST

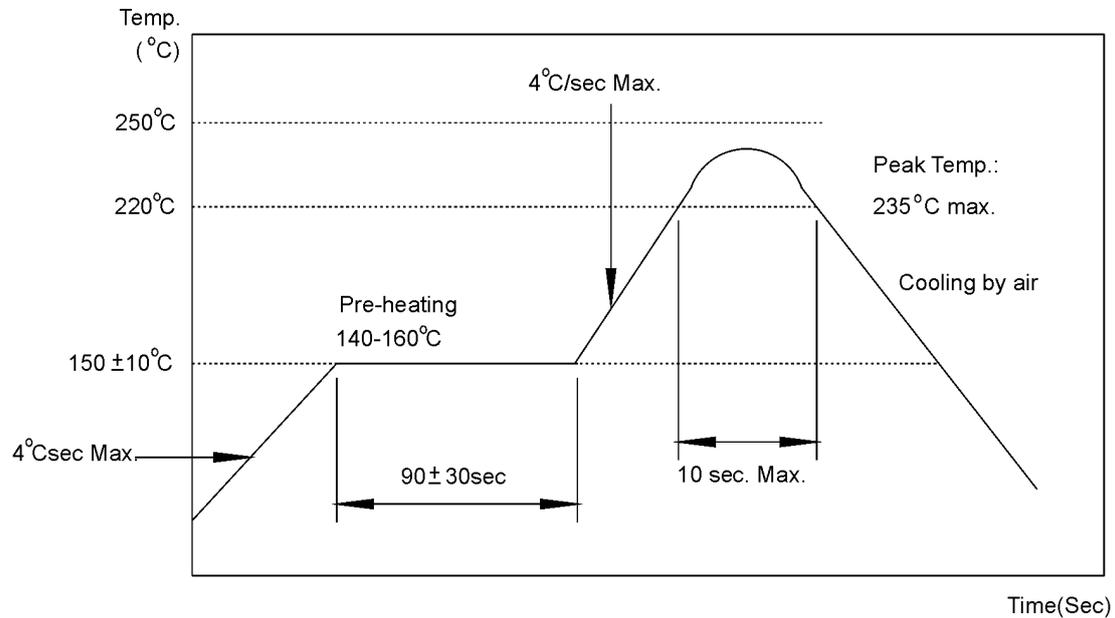
NO	ITEM	TESTING CONDITION	VARIANCE AFTER TEST
1	High Temperature Storage Life	The part shall be capable of withstanding a storage temperature is +85°C for 96 hours	All specifications must be satisfied after the test.
2	Low Temperature Storage Life	The part shall be capable of withstanding a storage temperature is -40°C for 96 hours	
3	Temperature Cycle	Total 10 cycles, Temperature:60°C /1hour→ 25°C/3hours→-20°C/1hour→ 25°C/3hours (1cycle)	
4	Humidity Test	40±2°C, 90~95% RH, 48 hours and expose to room temperature for 6 hours	
5	Vibration Test	Vibration:1000cycles /min. Amplitude:1.5mm, Duration: 1 hour in each 3 axes	
6	Shock	Sounder shall be measured after being applied shock (980m/s <sup>2</sup> ) for each three mutually perpendicular directions to each of 3 times by half sine wave.	
7	Drop Test	Dropped naturally from 750mm height onto the surface of 5mm thick wooden board. 2 directions-upper and side of the part are to be applied.	

**Warranty:** For a period of one year from date of manufacture under normal operations.

## H. RECOMMENDED TEMP. PROFILE FOR REFLOW OVEN (Fig.1)

### 1. Reflow soldering

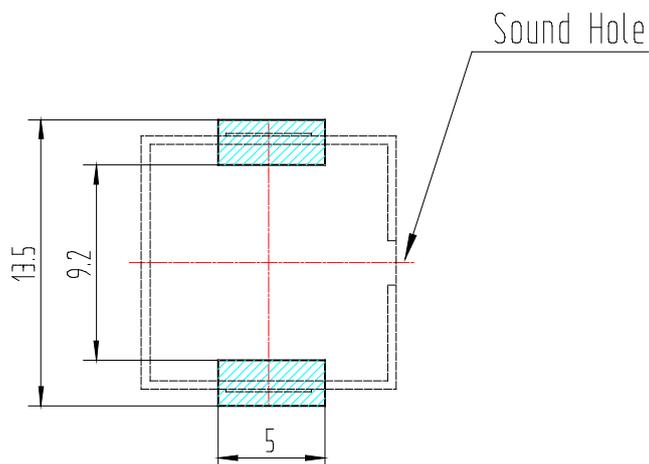
Recommendable reflow soldering condition is as follows.



### Note:

- (1) In automated mounting of the SMD sound transducers on PCB, any bending, expanding and pulling forces or shocks against the SMD sound transducers shall be kept minimum to prevent them from electrical failures and mechanical damages of the devices.
- (2) In the reflow soldering, too high soldering temperatures and too large temperature gradient such as rapid heating or cooling may cause electrical failures and mechanical damages of the devices.

### 2. Soldering Pattern



# I. PACKING INFORMATION

