

APPROVAL SHEET



FHD ELECTRONICS CORPORATION

CUSTOMER NAME : _____

COMMODITY : PIEZO TRANSDUCER

FHD SERIAL NO. : BP9019S-40

FHD PART NO. : T090920-P4000E-S

REMARK : _____

Approved by	J.J.	Prepared by	HY Shen
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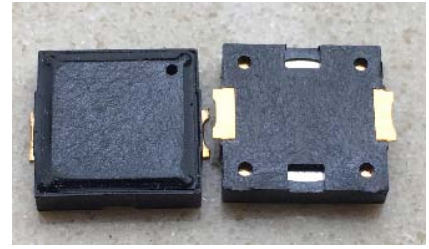
Customer Approval			
Approved		Rejected	

1525 McCarthy Blvd, Suite 1000,

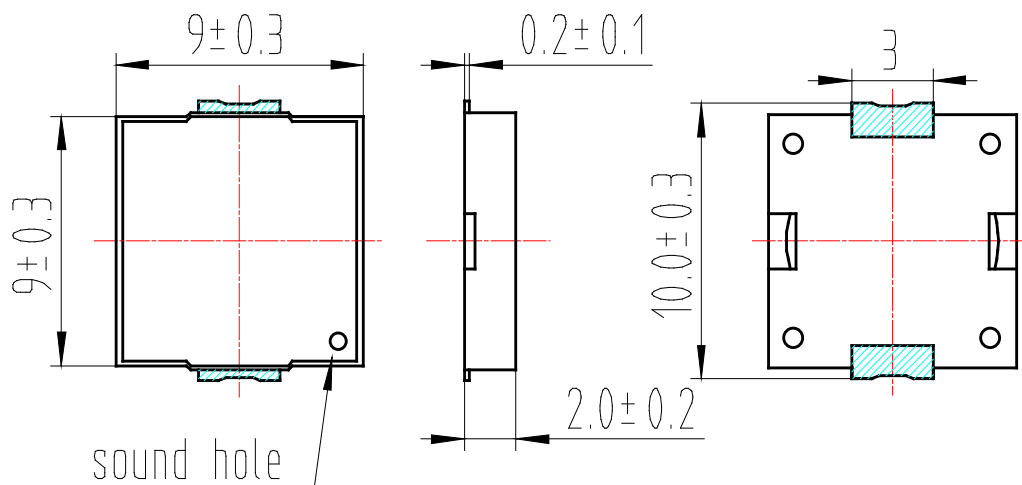
Milpitas, California 95035

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A. PART NO.: T090920-P4000E-S**B. SPECIFICATION**

No.	Item	Unit	Specification	Condition
1	Oscillation Frequency	KHz	4.0 ± 0.5	square wave
2	Max Input Voltage	Vp-p	20 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. 65 at 10cm	at 4KHz 50% duty Square Wave 3Vp-p
6	Capacitance	pF	$13000 \pm 30\%$	at 1KHz
7	Operating Temperature	°C	-30 ~ +70	
8	Storage Temperature	°C	-40 ~ +85	
9	Dimension	mm	9 x 9 x H2.0	See appearance drawing
10	Weight (MAX)	gram	0.2	
11	Housing Material		LCP(Black)	
12	Environmental Protection Regulation		RoHS	

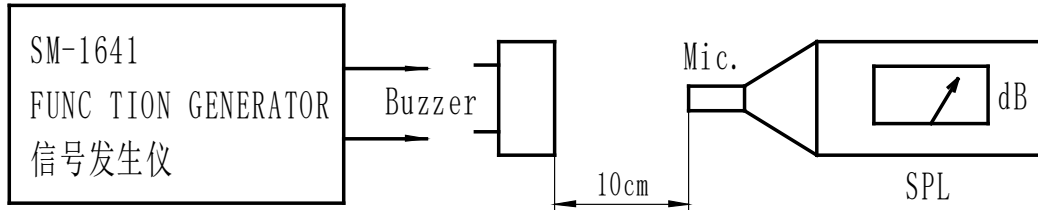
C. APPEARANCE DRAWING

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

*Terminal plate: 2 soldering pads, Gold plating Brass

D. TEST METHOD

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



测试示意图

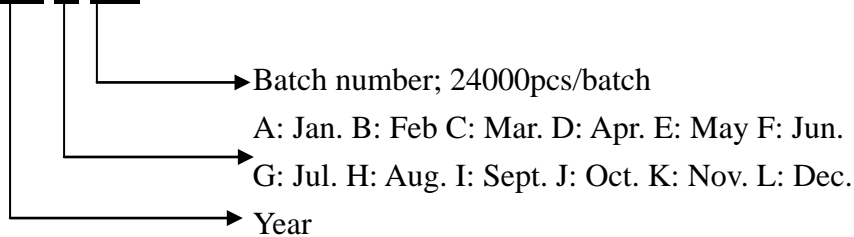
E. TYPICAL FREQUENCY RESPONSE CURVE



3Vp-p 50% duty Square wave,10cm

F. LOT NUMBER NOMINATION

XX X XX



G. RELIABILITY TEST

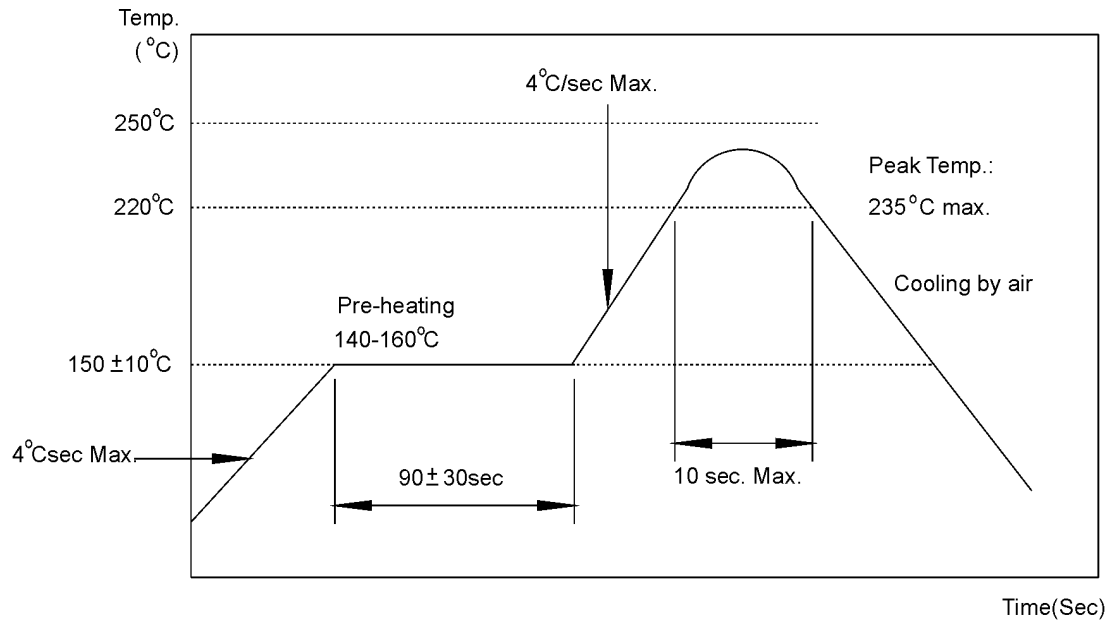
NO	ITEM	TESTING CONDITION	VARIANCE AFTER TEST
1	Ordinary Temperature Life Test	The part shall be subjected to 96 hours at 25±10°C. Input rated voltage, resonant frequency, 1/2 duty square wave.	All specifications must be satisfied after the test.
2	High Temperature Test	The part shall be capable of withstanding a storage temperature is -85°C for 96 hours	
3	Low Temperature Test	The part shall be capable of withstanding a storage temperature is -40°C for 96 hours	
4	Humidity Test	40±3°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	Temperature Shock Test	Temperature:60°C /1hour→ 25°C/3hours→-20°C/1h 25°C/3hours (1cycle) Total cycle: 10 cycles	
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.	
8	Reflow Test	Use recommendable reflow soldering condition (as shown in H) (1) No abnormality should be found after reflow (2) Good soldering to meet soldering requirements	

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

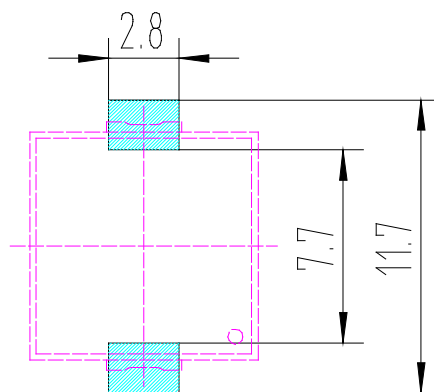
Recommendable reflow soldering condition is as follows.



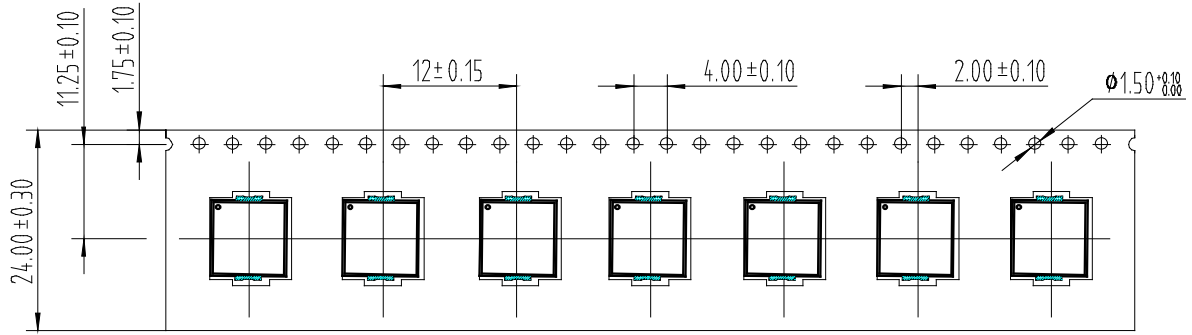
Note:

- (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.

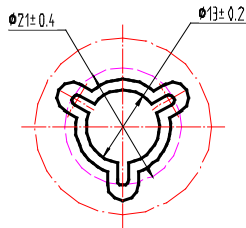
2. Soldering Pattern



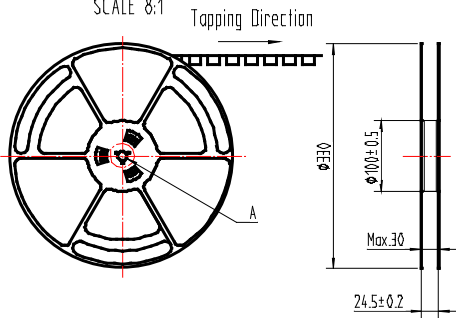
I. PACKING INFORMATION



Tapping Direction

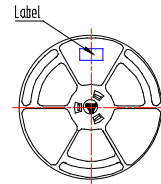


DETAIL: A
SCALE: 8:1

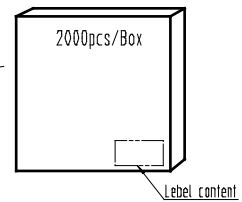
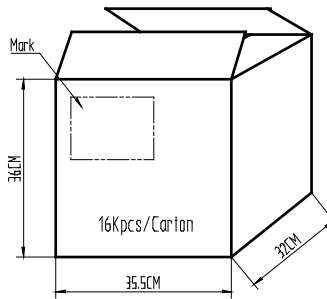


Label

P/N:
Model No.:BP9019S-40
Qty.: 2000pcs
Lot No.: XXXX



Inside box



1 Reel/Inside box
(34*34*3.2 CM)