



# SPECIFICATION FOR PIEZO CERAMIC ELEMENT

TOTAL PAGE

08

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## FT-27T-6.3A1W050

Customer		Model Name	FT-27T-6.3A1W050
Customer P/N		Product No.	
Date	10 Dec. 08	Issue No.	BS/TEY01.267A
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Approval:

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- 2.Dimension
- 3."Pull off"force between silver and ceramic layer
- 4.Notice
- 5.Measuring Method
- 6.Reliability Test
- 7.Packing
- 8.History change record

Drawn by	Checked by	Approved by	Customer approved

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# FT-27T-6.3A1W050

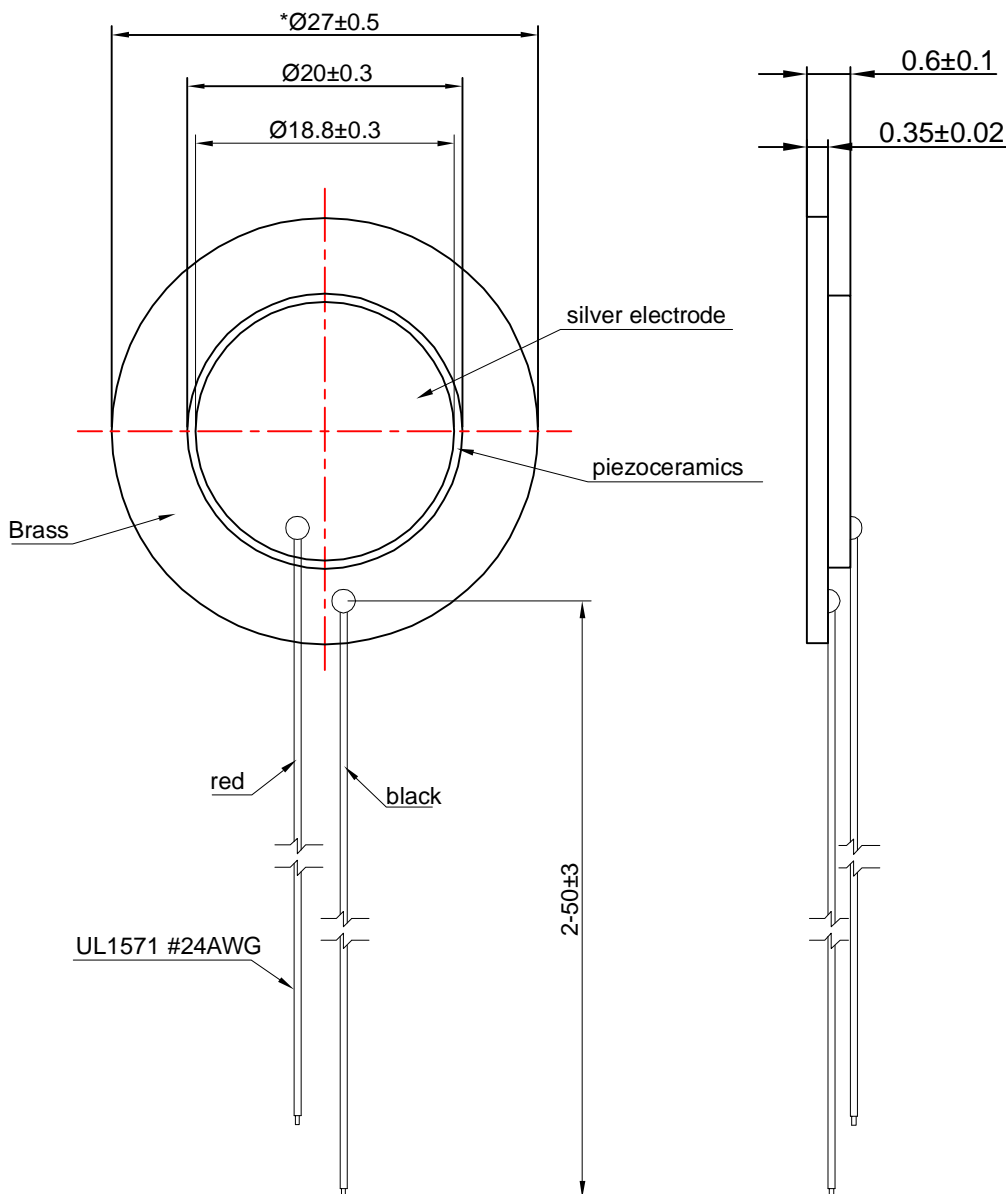
## 1.Electrical characteristics

No.	Item	Specification	Condition
1.	Resonant Frequency	6.3± 0.6KHz	The resonant frequency is suitable only for piezo element without wire
2.	Resonant Impedance	800ohm max	The resonant Impedance is suitable only for piezo element without wire
3.	Static Capacitance	C <sub>M-G</sub> :8.5± 30%nF	at 1KHz/1V
4.	Insulation Resistance	Min.200M ohm	The Insulation Resistance is suitable only for piezo element without wire
5.	Operating Voltage	3 - 30 Vp-p	
6.	"Pull off"force between silver and ceramic layer (horizontally)	20N min	See page 3 &3.2a
7.	"Pull off"force between silver and ceramic layer (vertically)	2.5N min	See page 3&3.2b
8.	Operating Temperature	-30...+60°C	
9.	Storage Temperature	-20...+70°C	
10.	Metallic supporter	Brass	

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				Checked by:	赵 峥		
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## 2.Dimension



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6	5	4	3	2	1		

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## 3."Pull off"force between silver and ceramic layer

Note:

3.1 Lead wire (UL 1571 #24AWG)to be soldered on the silver by handsoldering at  $300\pm 10^{\circ}\text{C}$  duration  $2\pm 0.5$  sec

3.2.a Pull force by houizontal direction is  $\geq 20\text{N}$

3.2.b Pull force by vertical direction is  $\geq 2.5\text{N}$

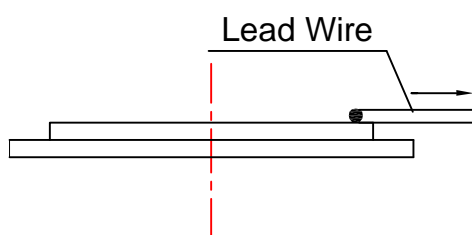


FIG.1 Direction of Lead Wire (horizontally)

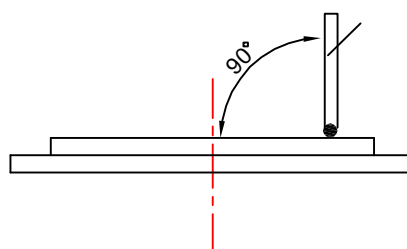


FIG.2 Direction of Lead Wire (vertically)

## 4. Notice

4.1 The products mustn't be washed

4.2 Storage Condition

The products should be stored in the room ,where the temperature/humidity is stable. And avoid such places where there are large temperature changes. Please store the products at the following conditions:

Temperature:  $-10$  to  $+40^{\circ}\text{C}$  Humidity: 15 to 85% R.H.

4.3 Expire Date on Storage

Expire date (Shelf life) of the products is six months after delivered under the conditions of a sealed and an unopened package. Please use the products within six months after delivered.

If you store the products for a long time (more than six months), use carefully because the products may be degraded in the solderability and/or rusty.Please confirm solderability and characteristics for the products regularly.

4.4 Notice on Product Storage

(1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced at quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.

(2) Please use the products immediately after the package is opened, because the characteristics may be reduced at quality, and/or be degraded in the solderability due to storage under the poor condition.

(3) Please do not drop the products to avoid cracking of ceramic element.

Date: 08/12/10

Drawn by: 汤浩君

Checked by: 赵 峰

Approved by: 李红元

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Piezo Ceramic Element

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## 5.Measuring Method

### 5.1.Resonant Frequency/Resonant Impedance

piezoelectric diaphragm shall be clamped at a node point as shown in following figure to be free from any mechanical stress,and measured its resonant frequency and resonant impedance by using YW2788 synthesis parameter test apparatus or equivalent

### 5.2.Capacitance:

An electrostatic capacity capacitance shall be measured at 120Hz by using LCR meter, such as DF2812A LCR numerical bridge or equivalent.the part shall be clamped at the node .

### 5.3.Insulation Resistance:

An insulation resistance shall be measured by using an insulation resistance meter,suach as DF2863 insulation resistance meter.

### 5.4.Measureing Condition:

Parts shall be measured under a condition(Temperature:+5°C to +35°C,Humidity:45 to 85% R.H.) unless the standard condition(Temperature:+25± 3°C,Humidity:60± 10%R.H.)is regulated to measure.

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## 6. Reliability test

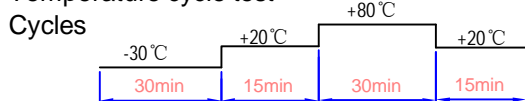
### 6.1 Life test at high temperature

Temperature +80°C  
Duration 96hrs

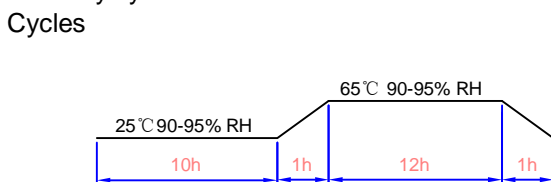
### 6.2 Life test at low temperature

Temperature -30°C  
Duration 96hrs

### 6.3 Temperature cycle test



### 6.4 Humidity cycle test



All these tests above should be measured after leaving normal temperature for 2hrs.

### 6.5 Vibration Test

Vibration Frequency 10~55Hz  
Amplitude 1.53mm  
Direction 3(x.y&z)  
Duration 2hrs each direction (total 6 hrs)

### 6.6 Drop test

Height 100cm  
(to 10mm thickness woodenboard)  
Direction 3(x.y&z)

### 6.7 Solderability Test

Soldering Temperature 255°C  
Duration 3 sec

### 6.8 Accelerated Life Test (ALT)

#### Thermal Cycling :

Thermal Cycling consists of temperature ramping components for 30 minutes in the Testing oven from -20°C to 70°C. The components are then exposed for 1 hour at The extremes and the cycle is repeated for a total of 15 cycles..

#### Thermal Soak:

Thermal soak consists of exposing a powered unit to 70°C and 85% relative humidity for 45 days.

Notice: All specifications must be satisfied in this condition.

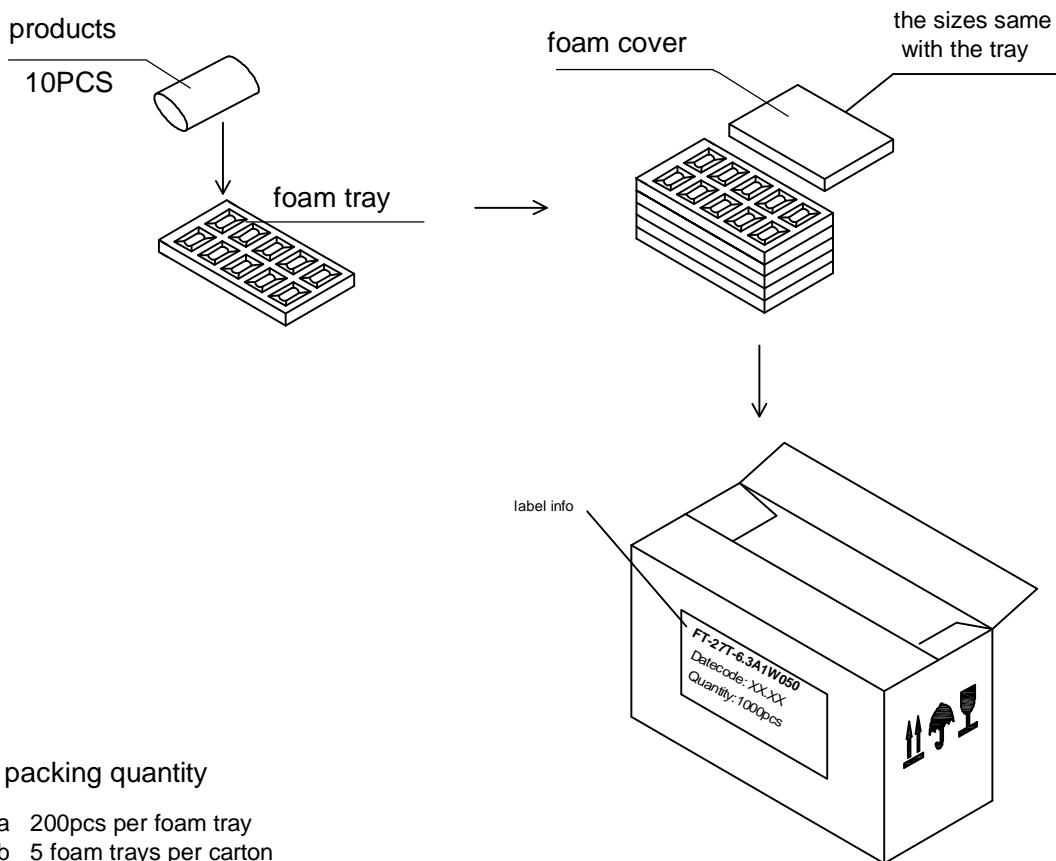
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## 7.Packing

### 7.1Packing Drawing



### 7.2 packing quantity

- 7.2-a 200pcs per foam tray
- 7.2-b 5 foam trays per carton
- 7.2-c Total 1000pcs per carton.
- 7.2-d Transducers shall be packaged in suitable low-sulfur, air tight stacking containers to prevent oxidation of the metal disc. corrosion of the silver electrode. And damage during shipment and storage. Cartons shall be stackable to four feet high without damage to transducers.

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## 8. History change record

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