

## FEET110 (Rev. 1.0)

**Applications:**

\* 15K/20K/30K ultrasonic power supply on mask machine

**Operating & Storage Condition :**

\* Operating Temp. : -55 to +125 °C

\* Storage Temp. : -25 to +35 °C

\* Storage Life Time : 12 Months @25 °C , RH 70%

**Test Equipment :**

\* Wayne kerr 3260B/G LCR Meter

\* Wayne kerr 3265B Bias Current Source

\* CH9053

**Standard Atmospheric Conditions :**

Ambient Temp : 20+/-15 °C

Relative Humidity : 65+/-20%

**Product Identification**

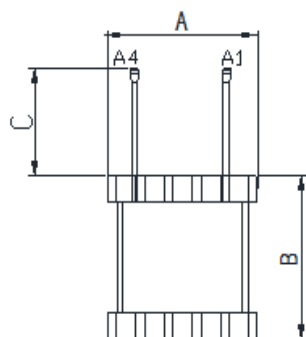
**FEET**      **110**      -      **133**      **K**  
1                  2                  3                  4

1. Product Code

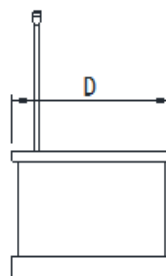
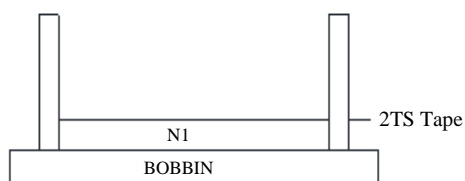
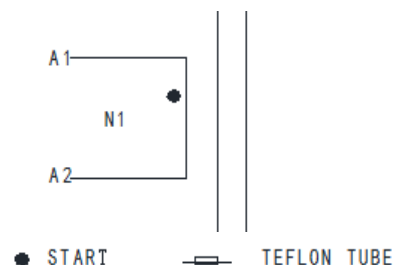
2. Size Code

3. Inductance

4. Tolerance

**Dimension: [ mm ]****Front View**

A:75(MAX)    B:82(MAX)    C:280 ± 15    D:86(MAX)

**Side View****Winding Construct****Schematics****Electrical Characteristics**

P/N	Inductance @1KHz/ 0.3V (uH)	Wire No.	Turns
FEET110-133K	Pin (A1-A2)	#21	210 TS
	1100 min		

SN	Test Item	Test Method	Standard	Samples ( pcs )
1	Thermal Shock 冷热冲击测试	Temperature: - 40 ℃ / +85 ℃ kept stabilized for 30 minutes; Cycle: 100 cycles (power off)	No appearance deformation Inductance deviation within $\pm 5\%$	30
2	Humidity Resistance 防潮性能测试	Humidity: 90% - 95% RH; Temperature: $40 \pm 2$ ℃      Time: $500 \pm 12$ hours	No appearance deformation Inductance deviation within $\pm 5\%$	30
3	High Temperature 耐热测试	Temperature: $105 \pm 2$ ℃      Time: $500 \pm 12$ hours	No appearance deformation Inductance deviation within $\pm 5\%$	30
4	Low Temperature 耐寒测试	Temperature: - 40 $\pm 2$ ℃      Time: $500 \pm 12$ hours	No appearance deformation Inductance deviation within $\pm 5\%$	30
5	Temperature and Humidity Cycle 温/湿度循环测试	Temperature      Humidity      Time 25 ℃ $\pm 2$ ℃      90% - 95% RH      3.0 hours 55 ℃ $\pm 2$ ℃      95% - 96% RH      5.0 hours 25 ℃ $\pm 2$ ℃      90% - 95% RH      3.0 hours Cycle: 100 cycles	No appearance deformation Inductance deviation within $\pm 5\%$	30
6	Tin Dipping Resistance    浸锡耐 热性测试	Soldering Temp.: $260 \pm 5$ ℃ Time: $3 \pm 1$ sec. Cycle: 3 cycles.	No appearance deformation Inductance deviation within $\pm 5\%$	30
7	Iron Heating Resistance 烙铁焊耐热性测试	Soldering Temp.: $350 \pm 5$ ℃ Time: $3 \pm 1$ sec.	No appearance deformation Inductance deviation within $\pm 5\%$	30
8	Withstanding Voltage 耐压测试	100 VDC/ 1 minute, between core & winding	No dielectric breakdown	30
9	Rated Current 额定电流测试	Temperature: $25 \pm 3$ ℃; Time: 10 minutes      Load: rated current	Inductance and Temp. Rise variation within spec.	30
10	Terminal Strength 端子强度测试	Pulling terminals Time: 60 sec. at 10N force	No terminal detachment No appearance deformation Inductance deviation within $\pm 3\%$	30
11	Vibration 振动测试	Frequency: 10Hz-55Hz      Amplitude: 1.5mm Direction: X,Y,Z      Time: 2 hours each Product: after packing	No appearance deformation Inductance deviation within $\pm 3\%$	30
12	Dropping 跌落测试	Freely dropped down;      Height: 1m ; Direction: 1 angle ridge; 3 surfaces. Product: after packing	No appearance deformation Inductance deviation within $\pm 3\%$	30

**Remark:** Before/after reliability test for above each item, must carry out visual inspection and/or measure crucial dimension inspection if needed. If confirmation of defects is required, use visual aids or equipment such as 10X magnifying glass, microscope etc. to check.

## Cleaning

- ◆ Refrain from cleaning coils. Ultrasonic cleaning may cause broken products. If it is a must, kindly refer to the following advice or consult with our company.

When cleaning the PC board after the inductors are all mounted, select the appropriate cleaning solution according to the type of flux used and purpose of the cleaning (e.g. to remove soldering flux or other materials from the production process.)
- ◆ Cleaning conditions should be determined after verifying through a test run, the cleaning process does not affect the inductor's characteristics.
- ◆ The use of inappropriate solutions can cause foreign substances such as flux residue to adhere to the inductor, resulting in a degradation of the inductor's electrical properties, especially insulation resistance.
- ◆ Inappropriate cleaning conditions (insufficient or excessive cleaning) may detrimentally affect the performance of the inductors.
  - \* In the case of ultrasonic cleaning, too much power output can cause excessive vibration of the PC board which may lead to the cracking of the inductor or the soldered portion, or decrease the terminal electrodes' strength. Thus the following conditions shall be checked.
    - Ultrasonic output below 20W
    - Ultrasonic frequency below 40KHz
    - Ultrasonic washing period 5 minutes or less

## Handling

- ◆ Keep the product away from all magnets and magnetic objects.
- ◆ Breakaway PC boards (splitting along perforations)
  1. When splitting the PC board after mounting product, care should be taken not to give any stresses of deflection or twisting to the board.
  2. Board separation should not be done manually, but by using the appropriate devices.
- ◆ Mechanical considerations

Please do not give the product any excessive mechanical shocks and power in transportation.
- ◆ Pick-up pressure

Damage and a characteristic can vary with an excessive shock or stress. Please don't push to add any pressure to a winding part.
- ◆ Packing- Please avoid accumulation of a packing box as much as possible.

## Storage

- ◆ To maintain the solderability of terminal electrodes and to keep the packaging material in good condition, care must be taken to control temperature and humidity in the storage area. Humidity should especially be kept as low as possible.
- ◆ Recommended conditions
  - Ambient temperature Below 40℃
  - Humidity Below 70% RH
- ◆ The ambient temperature must be kept below 40℃. Even under ideal storage conditions inductor electrode solderability decreases as time passes, so inductors should be used within 6 months from the time of delivery.
- ◆ In case of storage over 6 months, solderability shall be checked before actual usage.
- ◆ The packaging material should be kept where no chlorine or sulfur exists in the air.
- ◆ Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/ packaging materials may take place.