PIEZO ULTRASONIC SENSOR SPECIFICATIONS

■**MODEL**：T/R55.5-15.5E279Z-L19-01

■**ELECTRICAL SPECIFICATION:**

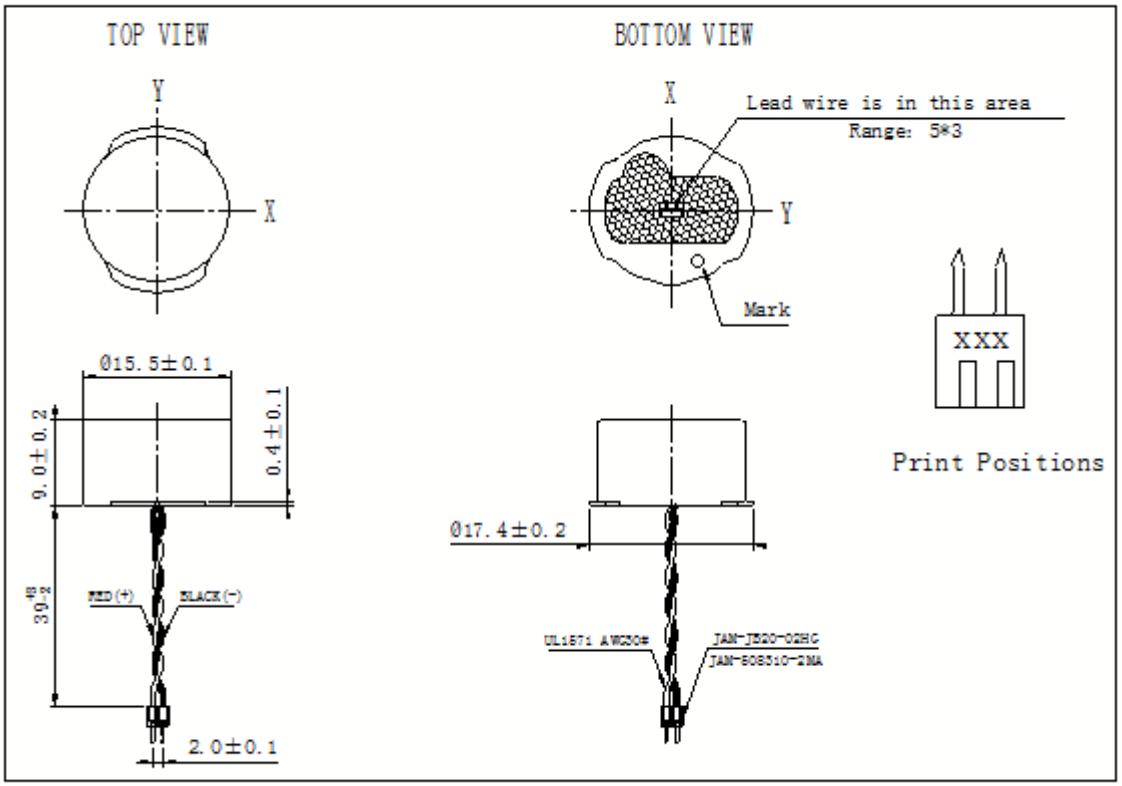
No.	Items	Specification	Note
1	Resonant Frequency 谐振频率	55.5±1.0 KHz	By impedance analyzer 4294
2	Overall Sensitivity 灵敏度	480-1000μS	With CY00523-UPA-55.5Ktester, Distance to obstacle: 1 meter ,
3	Ring time 余振	≤2.20 mS at +25℃	With CY00523-UPA-55.5Ktester, Defined as output pulse width
		≤2.60 mS at -40 to+ 85℃	
4	X-axle direction angle X 轴方向角	90±15 (Typical)	-6dB angle of overall sensitivity
5	Y-axle direction angle Y 轴方向角	45±10 (Typical)	-6dB angle of overall sensitivity
6	静电容量 Capacitance (pF)	1300±20% pF	At1kHz ,25±3℃
7	MAX. Input Voltage 最大输入电压	160 Vp-p at -40 to +25℃	(55.5KHz) Pulse number 20, interval 80ms
		120 Vp-p at +25 to +85℃	
8	Operating temperature 工作温度	-40 ℃～+85 ℃	--------
9	Storage temperature 贮存温度	-40 ℃～+85 ℃	--------
10	Insulation Resistance 绝缘阻抗	100M ohm min.	At 100V D.C
11	Mean Time To Failure 平均无故障时间	50000H	Normal room temperature

Testing environment: T=25±3℃, H=45~75%R.H

■**MECHANICAL CHARACTERISTICS:**

LEAD STRENGTH: To pull longitudinally 4.9kgf min

APPEARANCE AND DIMENSIONS:



NOTE: I: Paint thickness:15±5μm;

II: All materials are ROHS,But Piezo is releas.

■Decay Time Echo Sensitivity Test

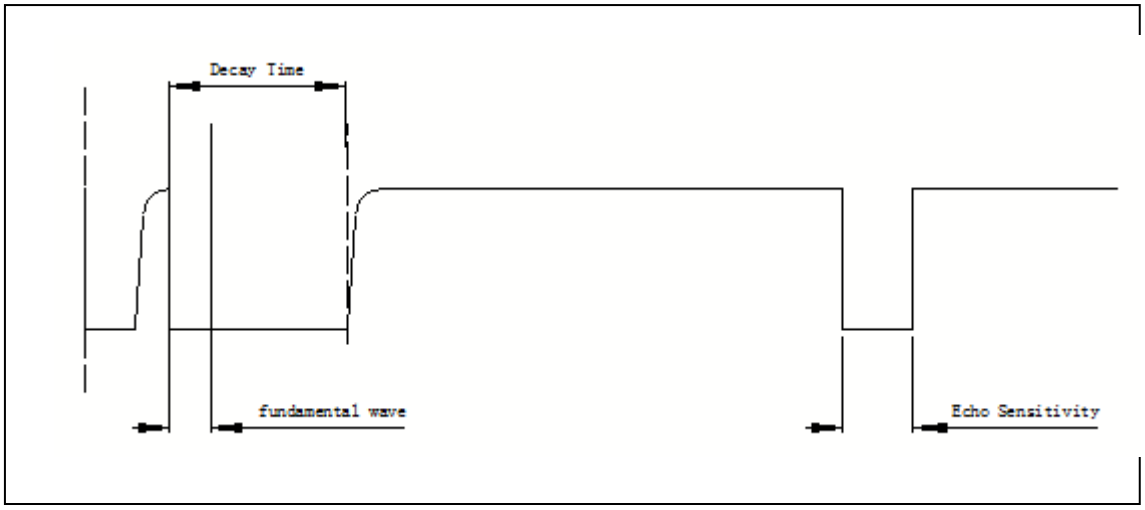
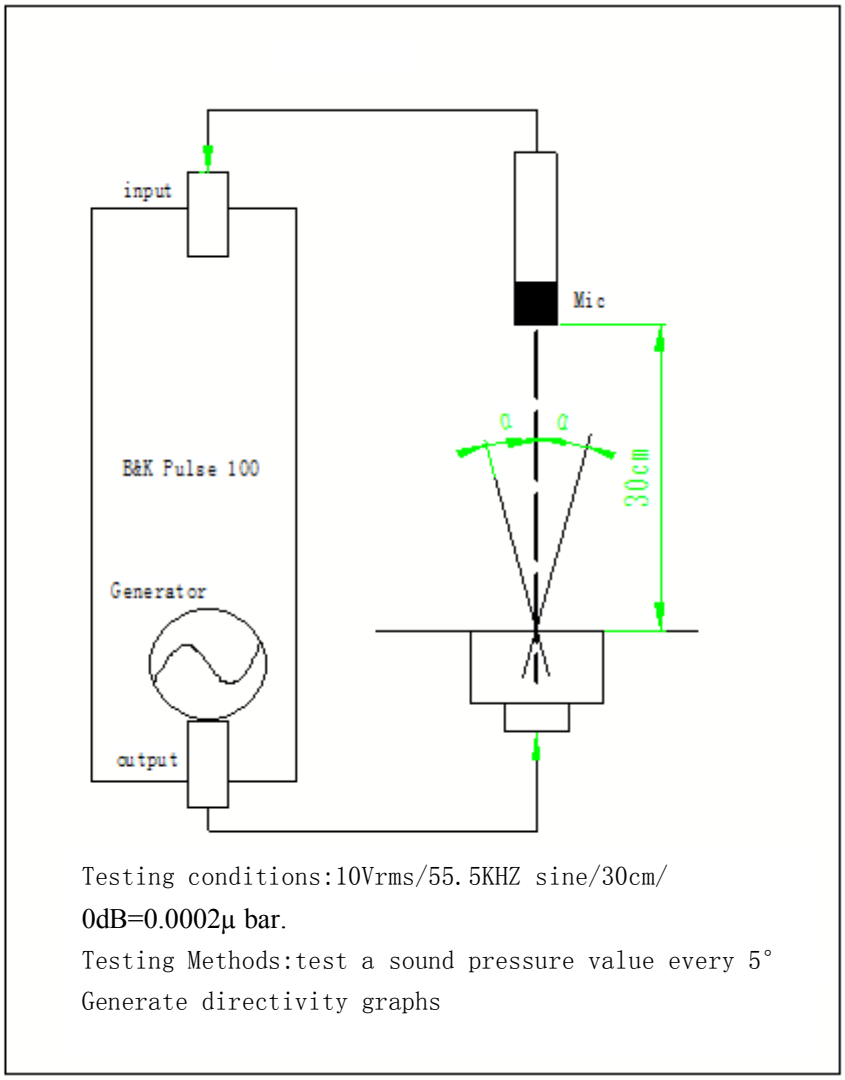


FIG.1

■指向性测试（DIRECTIVITY TEST）



Testing conditions:10Vrms/55.5KHZ sine/30cm/

0dB=0.0002μ bar.

Testing Methods:test a sound pressure value every 5°

Generate directivity graphs

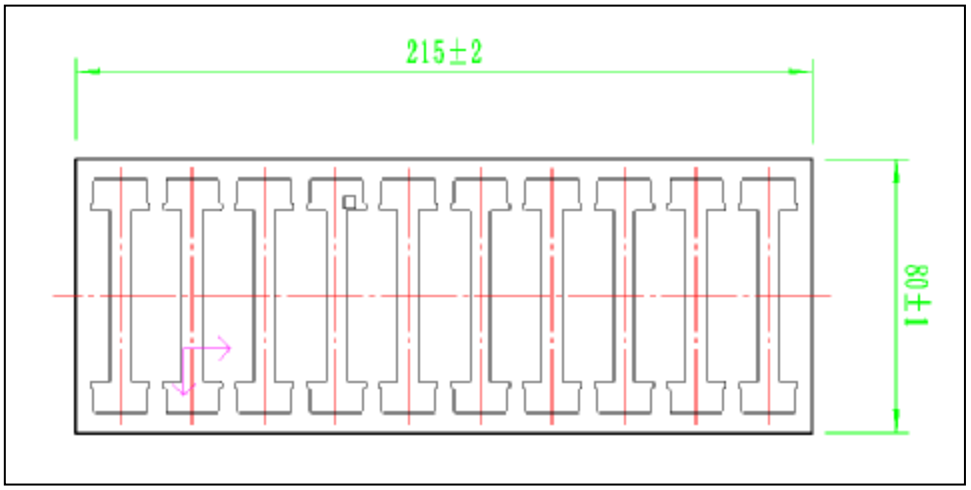
FIG.2

■环境测试（ENVIRONMENTAL TEST）

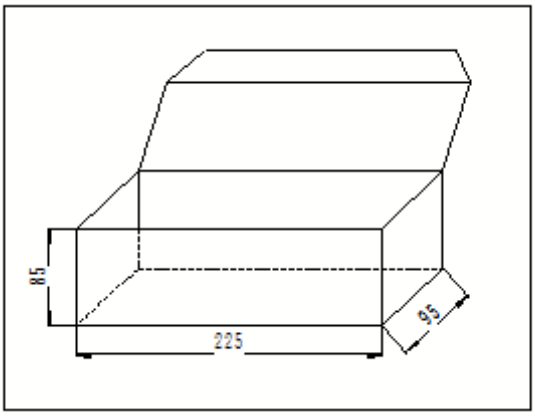
No.	Testing items	Testing Methods	Criteria
1	Shock Test	Acceleration:980m/s2(100G);Direction: 3directions; Shock time:3times/directions	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
2	Drop Test	Height:1meter onto concrete floor;Times:3times	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
3	Vibration Test	Vibration frequency: 10Hz to 55Hz;Amplitude1.5mm ; SweepPeriod: 1 minute; Direction:3directions;Time:3hous/direction.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
4	Pull strength	2.45N of force.。	There should be no substantial damage
5	High-temp. storage	Temperature:+85± 3℃ ;time: 1000h & followed normalization period at 25℃ for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
6	Low-temp. storage	Temperature: -40±3℃;time: 1000h, & followed by a normalization period at 25℃for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
7	Humidity resistance	Temperature: +85±3℃, Humidity:85% R.H;time:1000h, & followed by a normalization period at 25℃for 24h.。	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
8	Temp. shock	Temperature: -40℃ ± 3℃ for 0.5h, within 5 min up to +85℃±3 for 0.5h, cycles:1000cycless & followed by a normalization period at 25℃for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
9	High-Temp Chamber Test	Temperature:+85± 3℃ ;Voltage less than 140Vp-p,pulse number 20,interval 80ms, at 55.5±0.5KHwork for 118h & followed by a normalization period at 25℃for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
10	Low-Temp Chamber Test	Temperature:+85±3℃;Voltage less than 140Vp-p,pulse number 20,interval 80ms, at 55.5±0.5KHwork for 118h & followed by a normalization period at 25℃for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤
11	High-Temp and High-Humidity Work Test	Temperature:+85±3℃, Humidity:85% R.H, Voltage less than 140Vp-p, pulse number 20,interval 80ms,at 55.5±0.5KHwork for 375h & followed by a normalization period at 25℃for 24h.	The variation of the echo sensitivity at 55.5kHz within 40% compared with initial figures at 25degC Decay Time≤

■PACK:

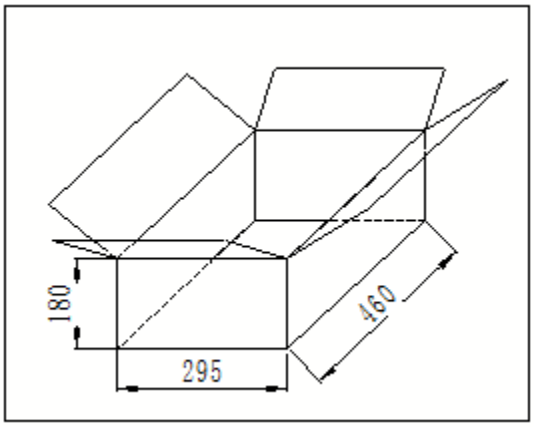
1、 PACKING TRAY:20pcs a tray



2、PACKING CASE:5 trays a case,total of 100pcs



3、PACKING BOX:12 cases a box,total of 1200pcs



■ NOTE:

1. DESIGN RESTRICTION/PRECAUTIONS
   - This sensor is designed for use in air environment. Do not use it in liquid.
   - In the case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.
   - In the case where this sensor is to be hold in housing, use soft buffer between sensor and housing. The front convex part of this sensor vibrates in large extension. If this part is hold, its characteristics will vary. The top must be free to vibrate.

2. USAGE RESTRICTION/PRECAUTIONS:
   - To prevent sensor malfunctions, operational failure or any deterioration of its characteristics, do not use this sensor in the following, or similar conditions.
     a) In strong shock or vibration.
     b) In high temperature and humidity for a long time.
     c) In corrosive gases or sea breeze.
     d) In an atmosphere of organic solvents.
     e) In dirty and dusty environments that may contaminate the sensor front.
     f) Over specified allowable input voltage(Vp-p)
   - Do not solder adding stress on outer lead, also do not apply stress like spin or pressure just after soldering.

In case you form the leads, support the root firmly.

Revision history

文件修订记录 File revision history			
修订时间 Revsion time	修订版本 Version of revision	内部 ECR 编号 The number of ECR	修订内容 Contents of revision
2017/11/15	A1	/	The first revision