ULTRASONIC TRANSDUCER

SPECIFICATION

MODEL No. :　PC58S14A1

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MODEL No. : PC58S14A1	NIPPON CERAMIC CO.,LTD		

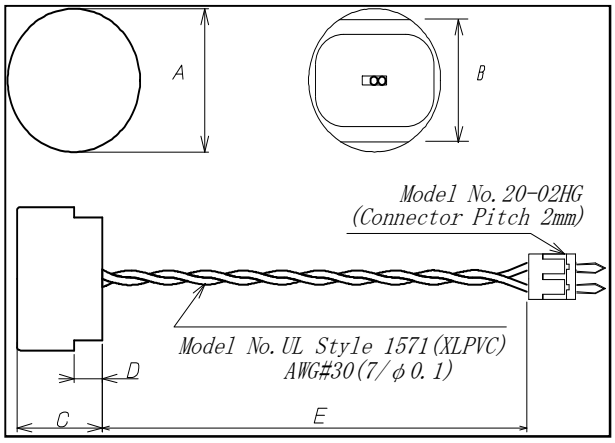
TITLE : TRANSDUCER SPECIFICATION

1.GENERAL

THESE SPECIFICATIONS DESCRIBE THE ULTRASONIC TRANSDUCERS

TYPE PC58S14A1

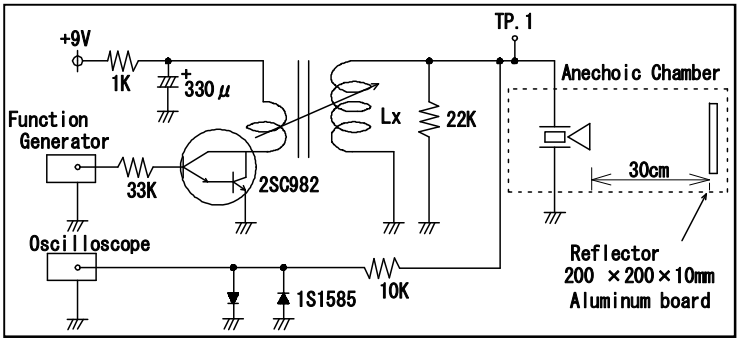
2.DIMENSION OUTLINE



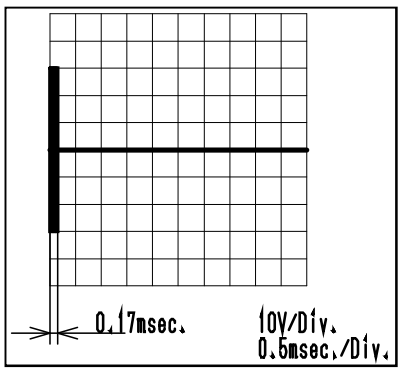
A: φ14.0±0.2
B: 12±0.2
C: 9.0±0.2
D: 3.0±0.2
E: 37±7

(Unit : mm)

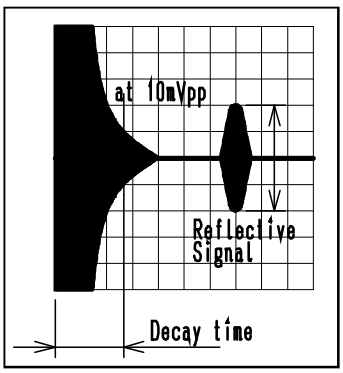
3.TEST CIRCUIT



TEST CONDITIONS··· 58kHz Sine wave, Pulse width : 0.17msec.(10 pulse)
Interval : 10msec., Driving voltage : 60Vp-p



at TP.1



Oscilloscope

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4.CHARACTERISTICS

25±3℃　50±10%R.H.

TYPE	PC58S14A1
Recommended drive Frequency	58.0 [kHz]
Reflective Sensitivity	1.0 [mVp-p] Min.
Decay Time at 10mVpp	1.1[msec.] Max.
Beam pattern (-6dB angle of Reflective Sensitivity)	80 degree × 34 degree(typical)
Max.input voltage	160Vp-p (Sine wave 58kHz, Pulse width 0.8msec., Interval 60msec.)
Capacitance at 1kHz	1350 pF ± 20%

5. ENVIRONMENTAL CHARACTERISTIC

5-1 Temperature charactriscs

The variation of the Reflective Sensitivity is within 10 dB compared with initial figures in the temperature range at -40 to +85℃

5-2 Humidity test

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions
Temperature: 60±3℃
humidity: RH 90 to 95% time: 1000 hours

5-3 High temperature test

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions
Temperature: +85±2℃ , 1000 hours

5-4 Low temperature test

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions
Temperature: -40±2℃ , 1000 hours

5-5 Heat cycle tests

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions.
Temperature: +85±3℃ 30 minutes -30±3℃ 30 minutes / cycle
Cycle: 1000 cycle
*Sensor is short circuit during 5-5 tests

5-6 Shock tests

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions
Acceleration : sine 100G
Direction : 3 directions
Shock times : 3 times / direction

5-7 Vibration test

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions
Amplitude : 1.5 mm
Direction : 3 directions
Time: 2 hours / direction
Vibration frequency : 10 to 55Hz
Sweep period : 1 min.

5-8 Drop tests

The variation of the Reflective Sensitivity is within 3 dB compared with initial figures at 25℃ in 24 hours after following test conditions.
Hight: 1 meter onto concrete floor
Times: 3 times

5-9 Lead Strength

To pull longitudinally 1.0 kgf min.

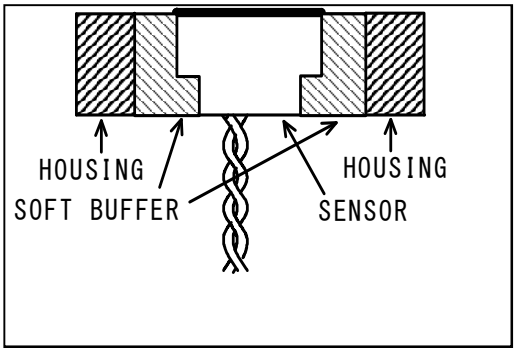
※ NOTES

1. DESIGN RESTRICTIONS/PRECAUTIONS

・This sensor is designed for use in air. Do not use this sensor in fluid.

・In case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.

・In case where this sensor is to be hold in housing, use soft buffer between sensor and housing. The front part of this sensor vibrates in large.



If this part is hold, its characteristics will vary. The top must be free to vibrate.

2. USAGE RESTRICTIONS/PRECAUTIONS

・Do not apply stress on wire lead like a pull, spin or pressure.

3. WARRANTY

・Period

Warranty period is one year after delivery.

・Scope

Defective sensors attributable to manufacturer's responsibility shall be replaced for free, during the warranty period.
However, following cases are out of the scope.

A. Unsuitable handling or mis-use by user.
B. Modification or repair by user.
C. Any other cases not responsible for manufacturer such as natural calamity, accident,etc.

This scope covers only replacement.
Any loss derived from failure or malfunction of the sensor,or cost to replace is excluded from this warranty scope.