



**PART NUMBER:** CPE-165

**DESCRIPTION:** piezo audio transducer

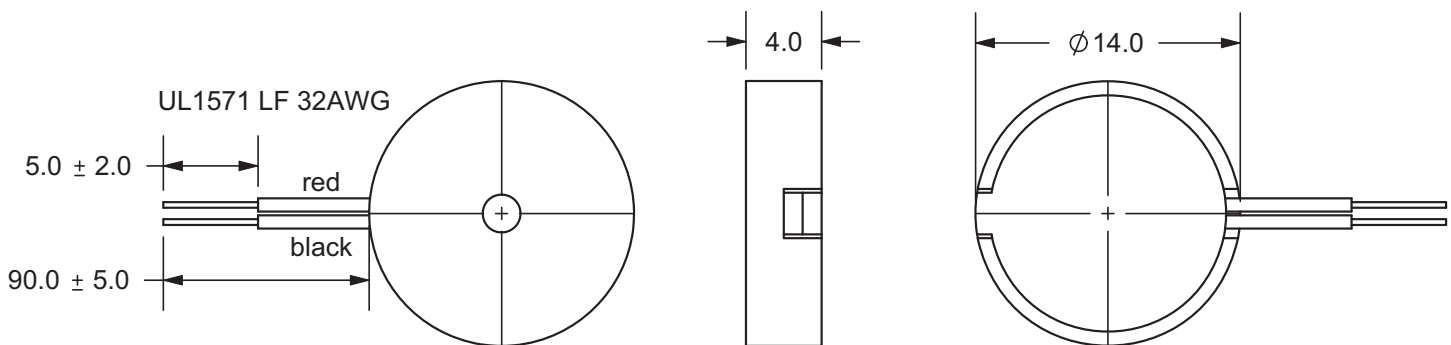
## SPECIFICATONS

operating voltage	30 Vp-p max.	
current consumption	11 mA max.	at 10 Vp-p, square wave, 4.8 KHz
sound pressure level	85 db min.	at 10 cm/10 Vp-p, square wave, 4.8 KHz
electrostatic capacity	15,000 $\pm$ 30%	at 1 KHz/1 V
operating temperature	-30 ~ +85° C	
storage temperature	-40 ~ +95° C	
dimensions	Ø14.0 x H4.0 mm	
weight	1.0 g max.	
material	ABS UL-94 1/16" HB high heat (black)	
terminal	wire type	
RoHS	yes	

## APPEARANCE DRAWING

tolerance:  $\pm 0.5$

units: mm

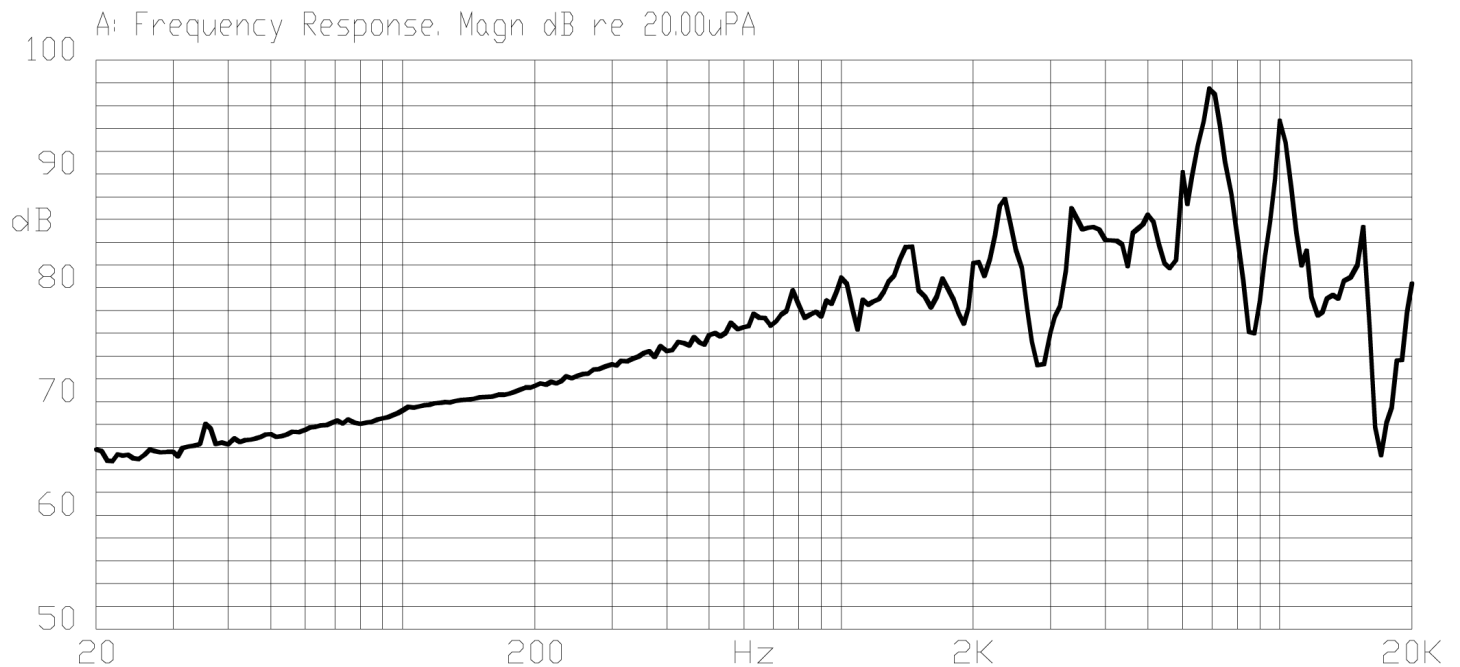




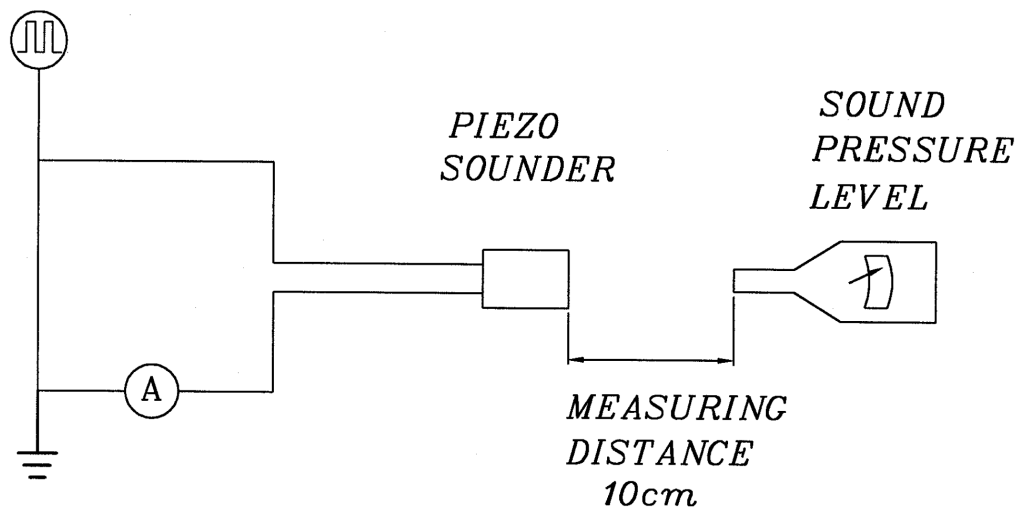
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## FREQUENCY RESPONSE CURVE



## MEASUREMENT METHOD



S.P.L. Measuring Circuit

Input Signal: 10 Vp-p, 4.8 KHz, square wave

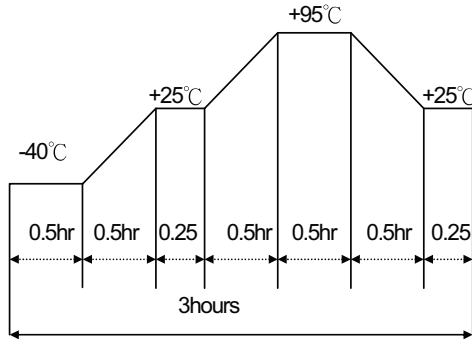
Mic: RION S.P.L. meter UC30 or equivalent

S.G.: Hewlett Packard 33120A function generator or equivalent

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item	test condition	evaluation standard
solderability	Stripped wires are immersed in rosin for 5 seconds and then immersed in solder bath of $270 \pm 5^{\circ}\text{C}$ for $3 \pm 1$ seconds.	90% min. of the lead terminals will be wet with solder (except the edge of the terminal).
soldering heat resistance	Stripped wires are immersed up to 1.5mm from buzzer's body in solder bath of $300 \pm 5^{\circ}\text{C}$ for $3 \pm 0.5$ seconds or $260 \pm 5^{\circ}\text{C}$ for $10 \pm 1$ seconds.	No interference in operation.
lead wire pull strength	The pull force shall be applied to lead wire: Horizontal 3.0N Vertical 2.0N	No damage or cutting off.
vibration	The buzzer shall be measured after applying a vibration amplitude of 1.5 mm with 10 to 55 Hz band of vibration frequency to each of the 3 perpendicular directions for 2 hours.	The value of oscillation frequency/current consumption should be $\pm 10\%$ of the initial measurements. The SPL should be within $\pm 10\text{dB}$ compared with the initial measurement.
drop test	The part will be dropped from a height of 75 cm onto a 40 mm thick wooden board 3 times in 3 axes (X, Y, Z) for a total of 9 drops.	
bottom covering pull force	The pull force of 3.0N shall be applied to bottom covering on the vertical direction.	No damage or cutting off.

**ENVIRONMENT TEST**

item	test condition	evaluation standard
high temp. test	After being placed in a chamber at $+95^{\circ}\text{C}$ for 240 hours.	The buzzer will be measured after being placed at $+25^{\circ}\text{C}$ for 4 hours. The value of the oscillation frequency/current consumption should be $\pm 10\%$ compared to the initial measurements. The SPL should be within $\pm 10\text{dB}$ compared to the initial measurements.
low temp. test	After being placed in a chamber at $-40^{\circ}\text{C}$ for 240 hours.	
humidity test	After being placed in a chamber at $+40^{\circ}\text{C}$ and $90 \pm 5\%$ relative humidity for 240 hours.	
temp. cycle test	The part shall be subjected to 5 cycles. One cycle will consist of:  	

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item	test condition	evaluation standard
operating (life test)	<p>1. Continuous life test: The part will be subjected to 48 hours of continuous operation at +70°C with rated voltage applied.</p> <p>2. Intermittent life test: A duty cycle of 1 minute on, 1 minutes off, a minimum of 5,000 times at room temp (+25 ±2°C) with rated voltage applied.</p>	<p>The buzzer will be measured after being placed at +25°C for 4 hours. The value of the oscillation frequency/current consumption should be ±10% compared to the initial measurements. The SPL should be within ±10dB compared to the initial measurements.</p>

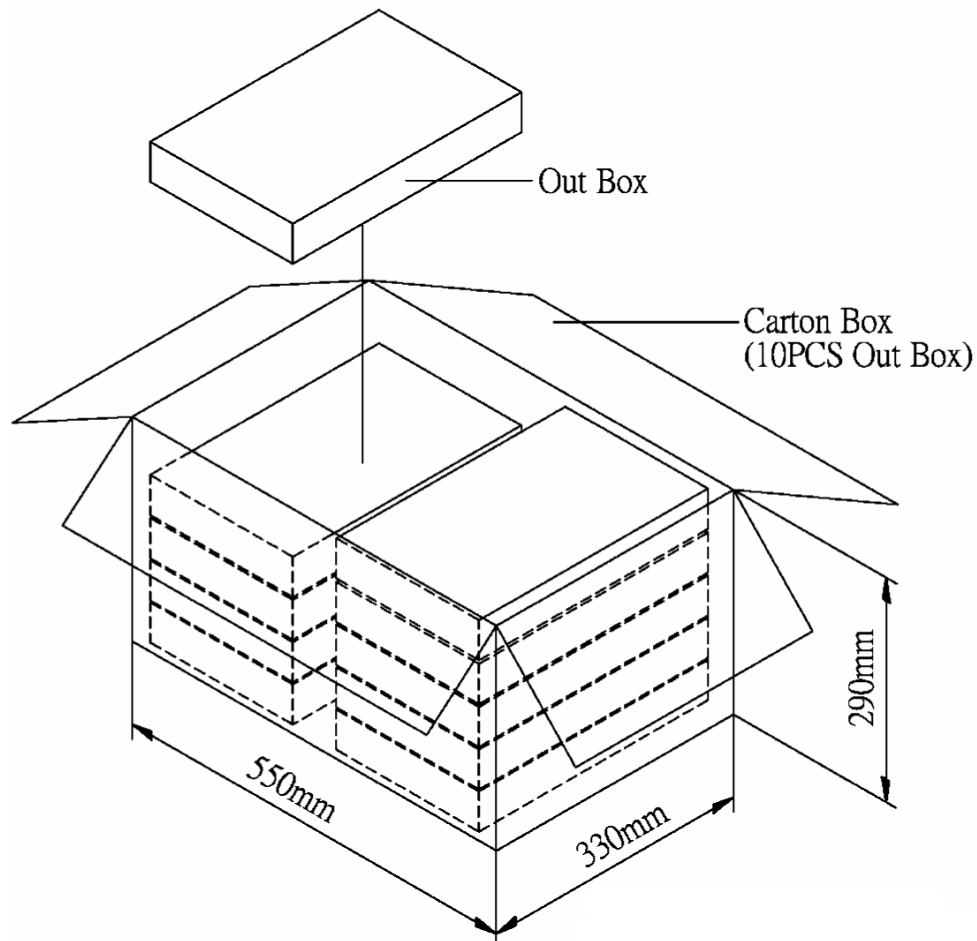
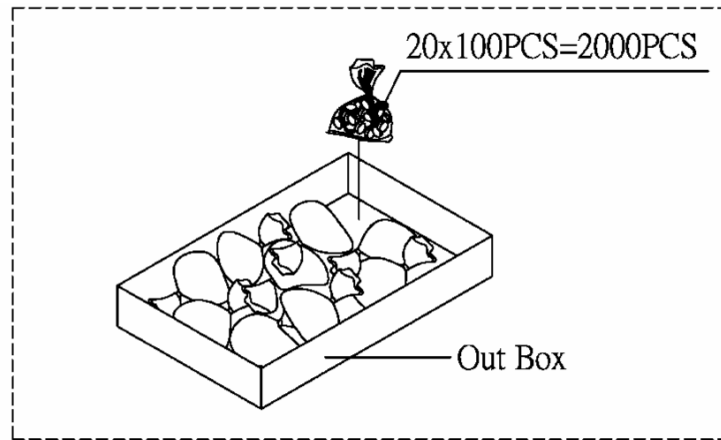
**TEST CONDITIONS**

standard test condition	a) temperature: +5 ~ +35°C	b) humidity: 45 - 85%	c) pressure: 860-1060 mbar
judgement test condition	a) temperature: +25 ±2°C	b) humidity: 60 - 70%	c) pressure: 860-1060 mbar

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## PACKAGING



Out Box	310mmx248mmx49mm	1x2000PCS=2000PCS
Carton Box	550mmx330mmx290mm	2000PCSx10=20000PCS