

**PART NUMBER:** CPE-165

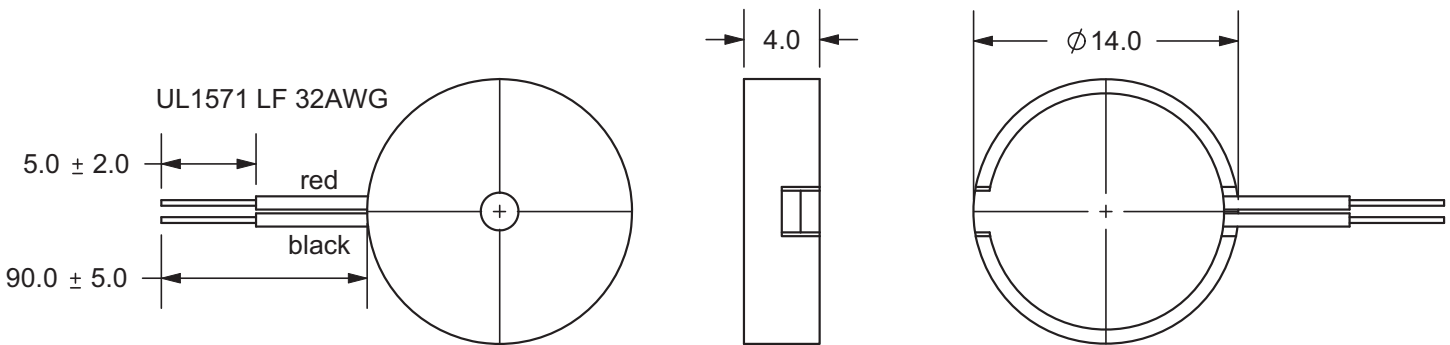
**DESCRIPTION:** piezo audio transducer

**SPECIFICATONS**

operating voltage	30 Vp-p max.	
current consumption	11 mA max.	at 10 Vp-p, sqare wave, 4.8 KHz
sound pressure level	85 db min.	at 10 cm/10 Vp-p, sqare wave, 4.8 KHz
electrostatic capacity	15,000 ± 30%	at 1 KHz/1 V
operating temperature	-30 ~ +85° C	
storage temprature	-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**

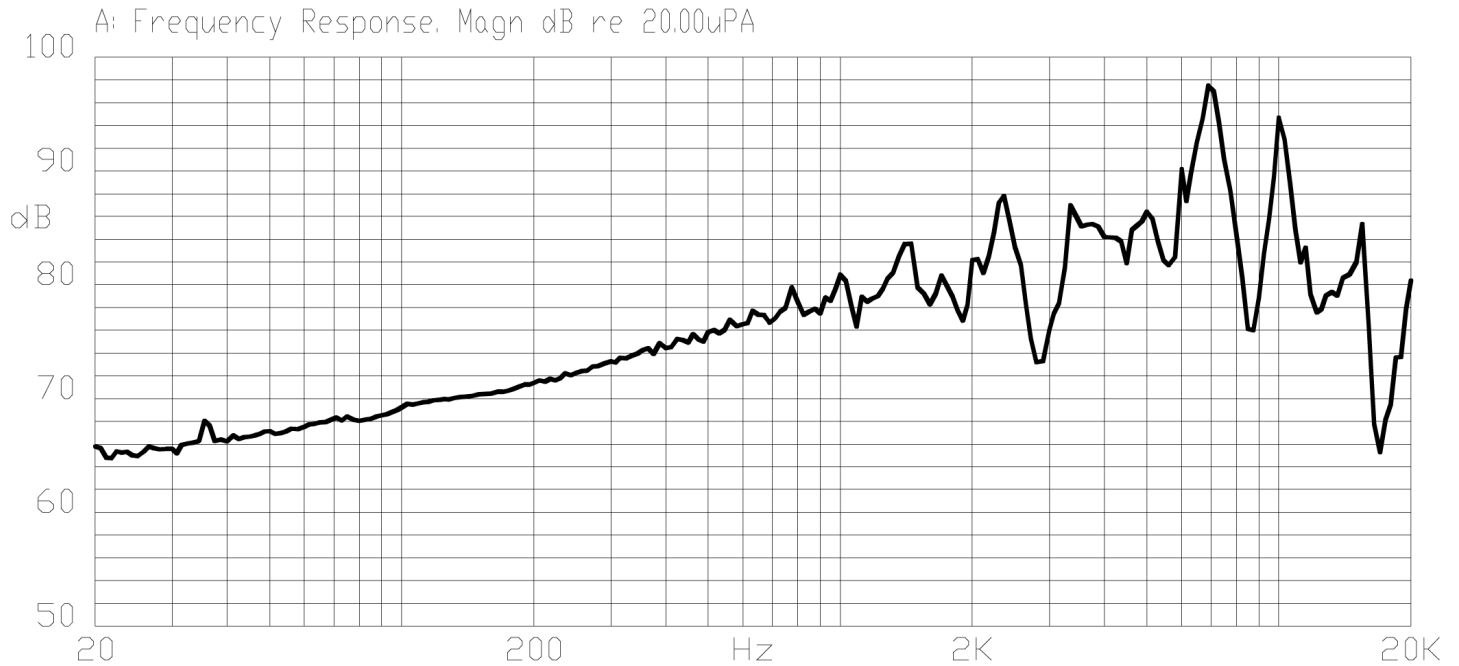
tolerance: ±0.5  
units: mm



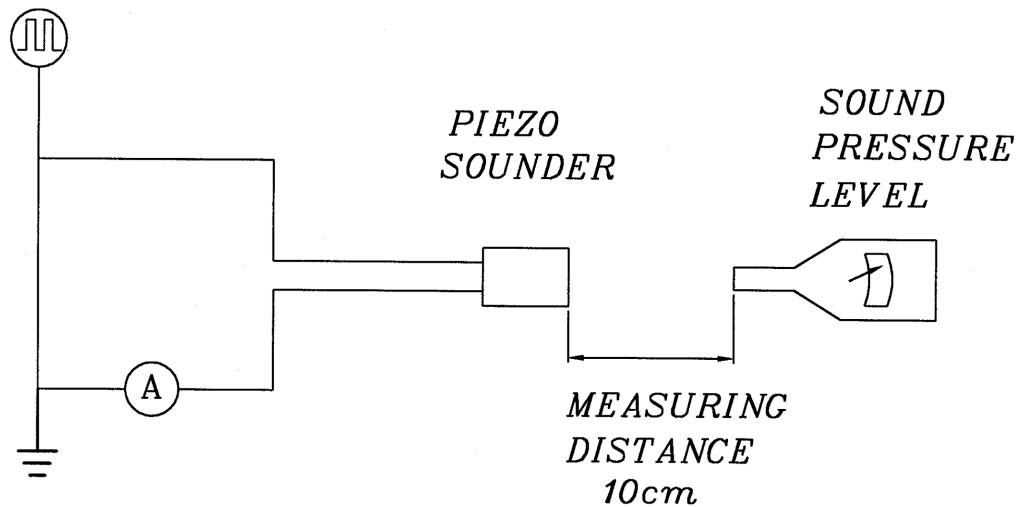
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### FREQUENCY RESPONSE CURVE



### 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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**MECHANICAL CHARACTERISTICS**

item	test condition	evaluation standard
solderability	Stripped wires are immersed in rosin for 5 seconds and then immersed in solder bath of 270 ±5°C for 3 ±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 ±5°C for 3 ±0.5 seconds or 260 ±5°C for 10 ±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 ±10% of the initial measurements. The SPL should be within ±10dB 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°C for 240 hours.	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.
low temp. test	After being placed in a chamber at -40°C for 240 hours.	
humidity test	After being placed in a chamber at +40°C and 90±5% relative humidity for 240 hours.	
temp. cycle test	The part shall be subjected to 5 cycles. One cycle will consist of:	

The diagram illustrates a temperature cycle over a 3-hour period. It starts at -40°C for 0.5 hours, ramps up to +25°C in 0.5 hours, dwells at +25°C for 0.25 hours, ramps up to +95°C in 0.5 hours, dwells at +95°C for 0.5 hours, ramps down to +25°C in 0.5 hours, and dwells at +25°C for 0.25 hours. The total duration is 3 hours.



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**RELIABILITY TEST**

<b>item</b>	<b>test condition</b>	<b>evaluation standard</b>
operating (life test)	1. Continuous life test: The part will be subjected to 48 hours of continuous operation at +70°C with rated voltage applied.  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.	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.

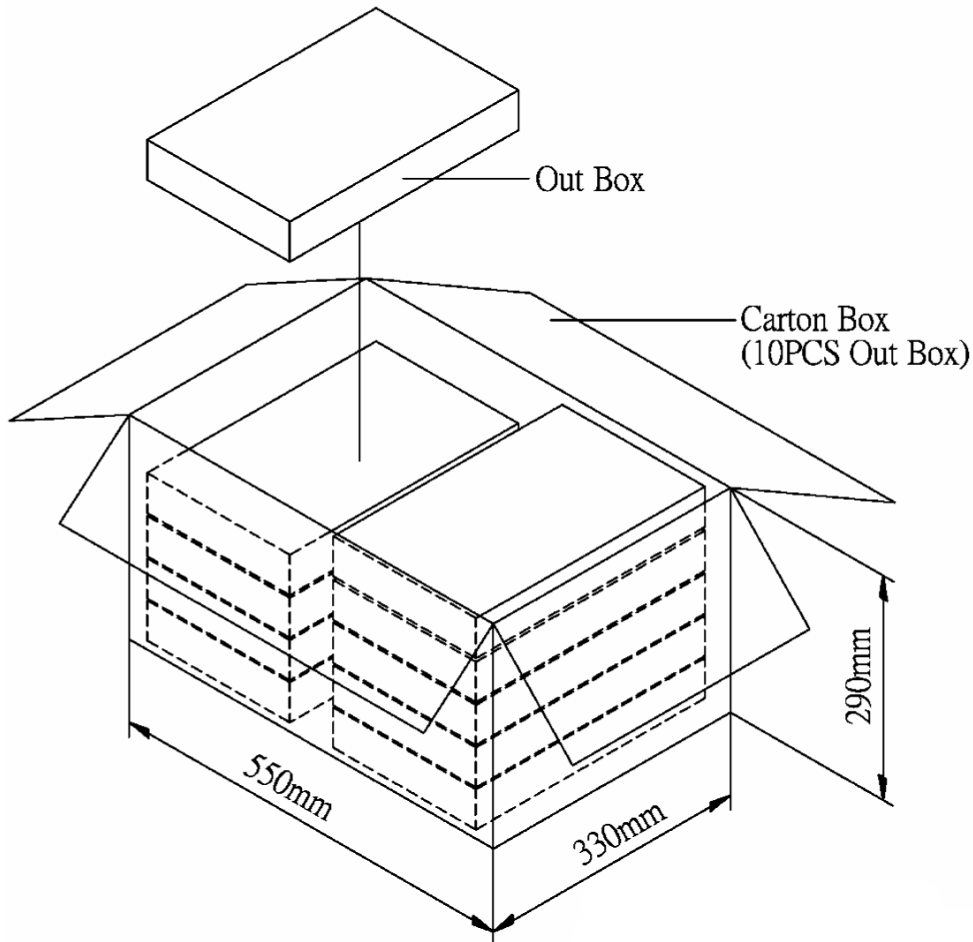
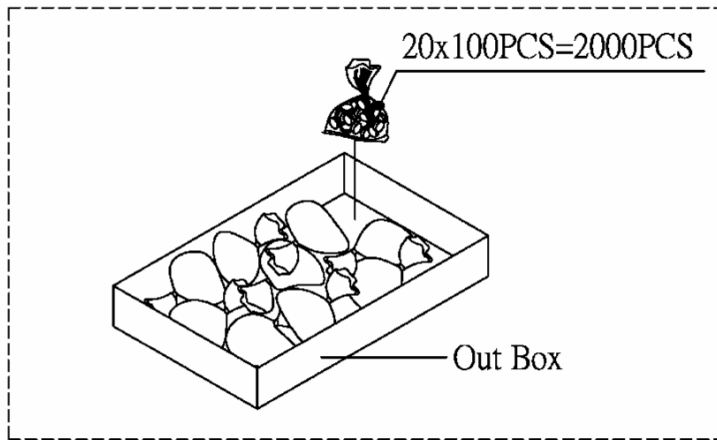
**TEST CONDITIONS**

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