



Part No: CEP-1173

Description: piezo audio transducer

Date: 6/25/2007

Unit: mm

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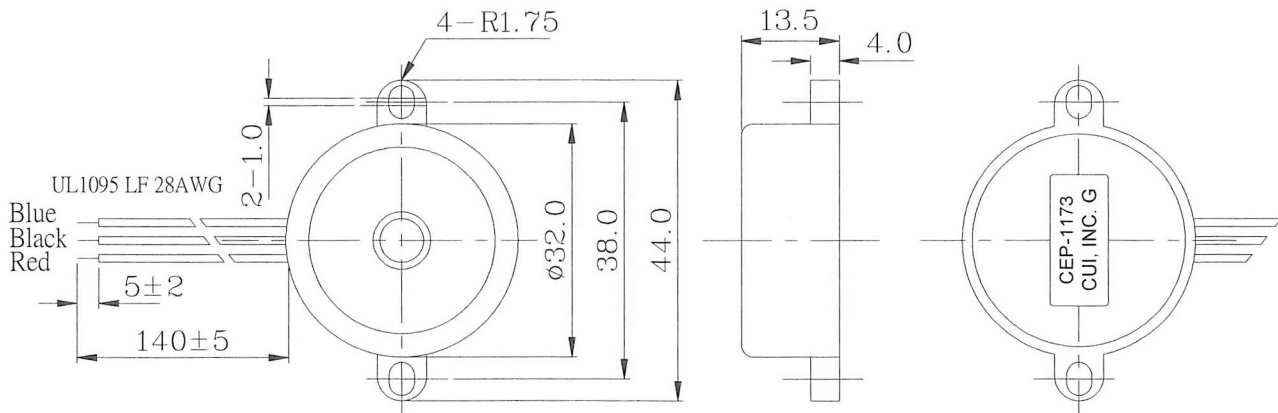


### Specifications

Resonant frequency	3.3 KHz $\pm$ 0.5	
Operating voltage	3 ~ 28 V dc	
Current consumption	7 mA max.	at 12 V dc
Sound pressure level	82 db min.	at 30 cm / 12 V dc
Rated voltage	12 V dc	
Tone	Continuous	
Operating temperature	-30 ~ +80° C	
Storage temperature	-40 ~ +95° C	
Dimensions	$\phi$ 32.0 x H13.5 mm	
Weight	7.4 g max.	
Material	ABS UL-94 1/16" HB (Black)	
Terminal	Wire type	
RoHS	yes	

### Appearance Drawing

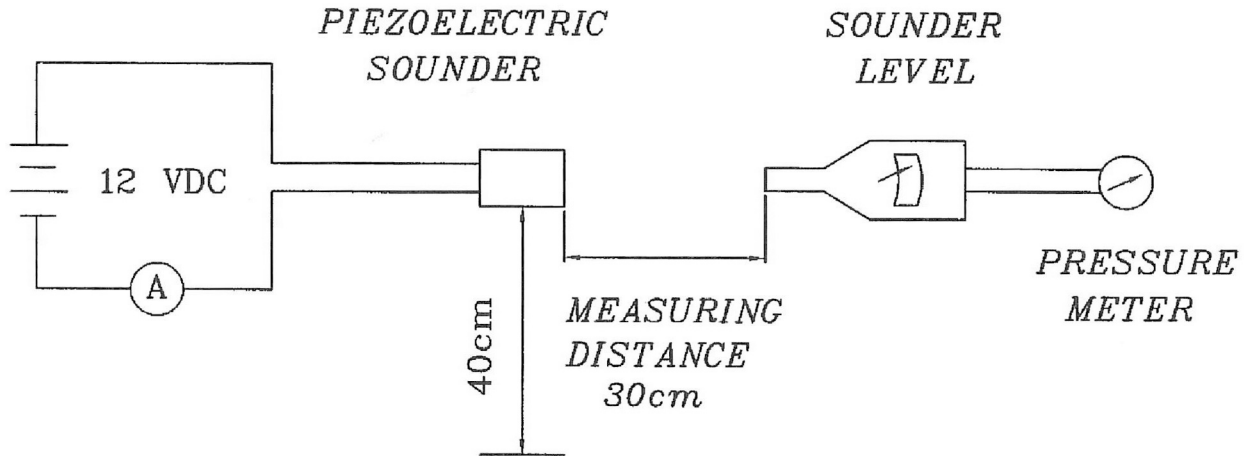
Tolerance:  $\pm$ 0.5



red wire ---M  
 blue wire ---F  
 black wire ---G

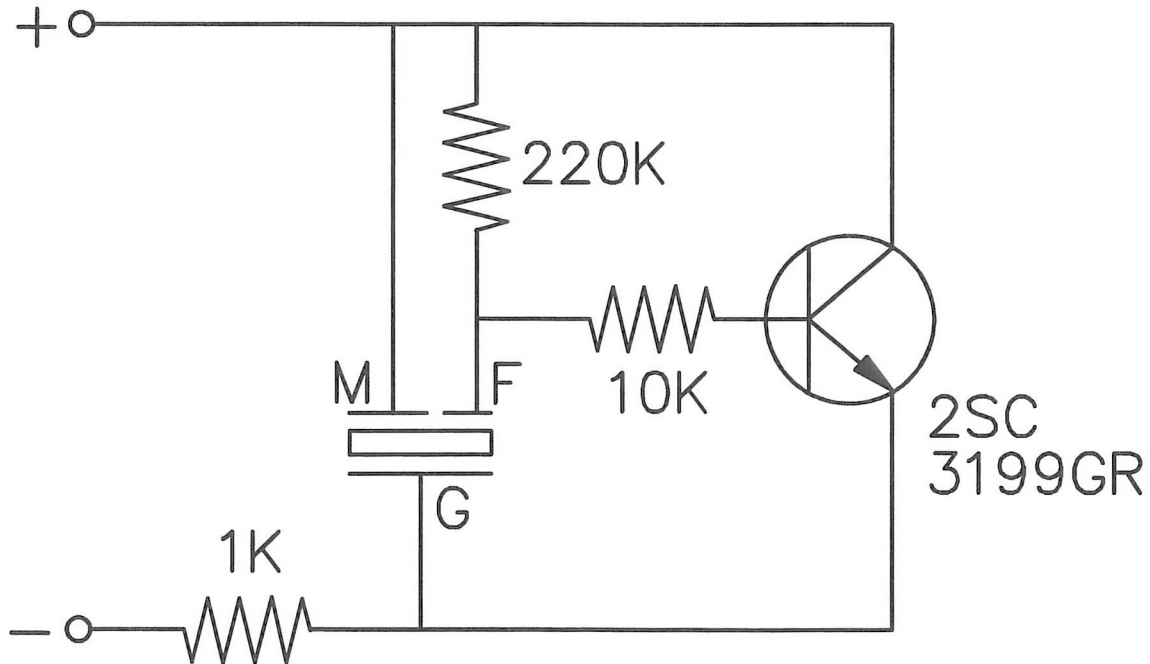
### Measurement Method

#### 1. S.P.L. Measuring Circuit



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

#### 2. The current consumption and the sound pressure level are measured by using the recommend driving circuit shown as below





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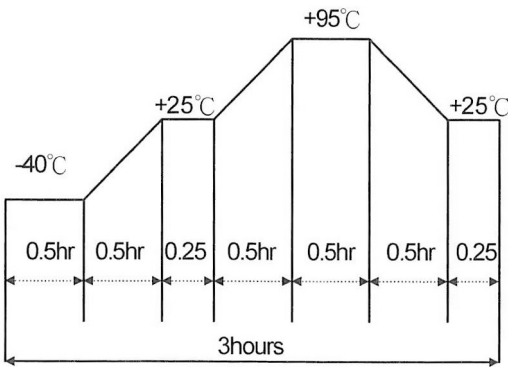
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**Mechanical Characteristics**

Item	Test Condition	Evaluation Standard
Solderability (Connector excepted)	Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in a solder bath of +270 ±5°C for 3 ±0.5 seconds.	90% min. of the stripped wires will be wet with solder. (Except the edge of the terminal)
Terminal Mechanical Strength	The pull force should be applied to the double lead wire: Horizontal 3.0N (0.306kg) for 30 seconds Vertical 2.0N (0.204kg) for 30 seconds	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.	

**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:  	



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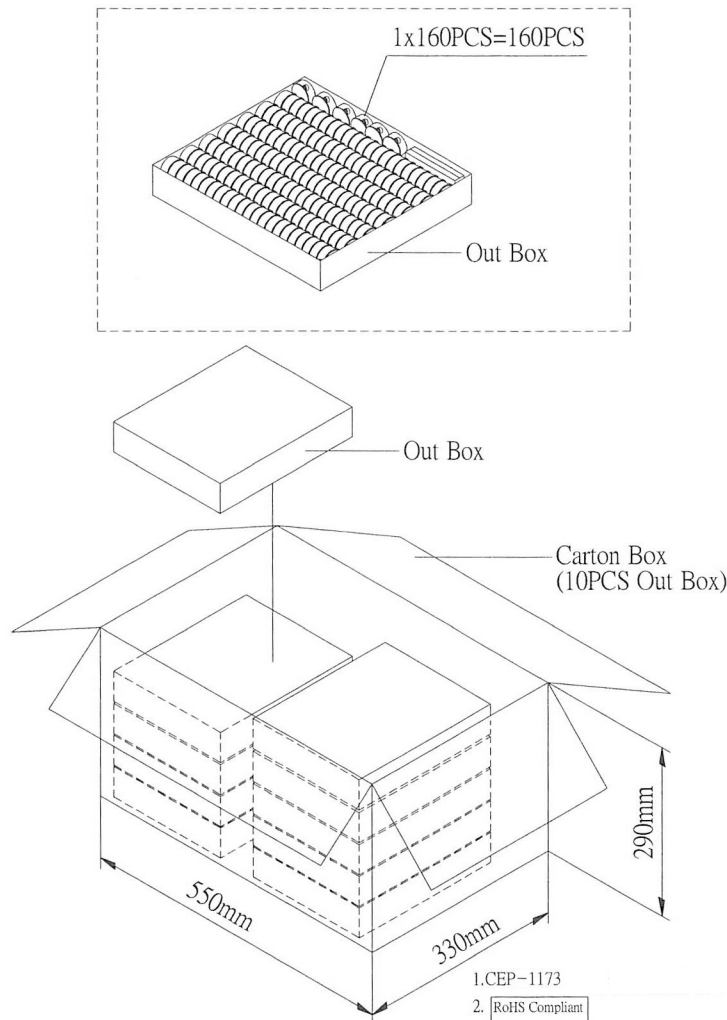
### Reliability Test

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 +65°C with rated voltage applied.</p> <p>2. Intermittent life test: A duty cycle of 1 minute on, 1 minute 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

### Packaging



Out Box	310mmx248mmx49mm	1x160PCS=160PCS
Carton Box	550mmx330mmx290mm	160PCSx10=1,600PCS