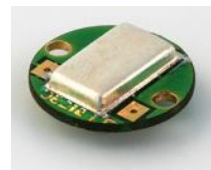


## LD173C Bone Microphone

Vibration (osteo) microphone for helmets



### DESCRIPTION

The LD173C is a piezoelectric sensor designed for single-axis vibration measurement. Measured value is acceleration in base axis direction. The sensor is designed for measurement of acoustically invoked vibrations in communication frequency band of audible spectrum. The shape is custom tailored for using as a sensor in osteo-communication system.

Parameter <sup>1</sup>	Unit	Min	Typ	Max	Remark
Sensitivity at 160 Hz	$\mu\text{A}/\text{ms}^{-2}$		0,4		
	$\text{mV}/\text{ms}^{-2}$		2		Testing circuit Fig. 4 (5k6 load)
	$\text{mV}/\text{g}$		20		against 1V/g
	dB		-34		
Transverse sensitivity	%			5	at 50 Hz
Frequency range (min.)	Hz	20 - 5000			$\pm 3$ dB. See characteristic on Fig. 2
Temperature range	$^{\circ}\text{C}$	-40		+85	
Shock resistivity	$\text{ms}^{-2}$	1000			100 pulses 10 us in three directions
Magnetic field sensitivity	$\text{ms}^{-2}/\text{T}$				at 0,03T and 50 Hz
Transient temperature sensitivity	$\text{ms}^{-2}/\text{K}$				
Acoustic pressure sensitivity	$\text{ms}^{-2}/\text{Pa}$				
Mass	g				
Seismic mass	g	0.15			
Sensing element		Piezoceramic			
Sensor design		flexure			
Bias current	$\mu\text{A}$			50	
Power voltage	V	1.3		15	See characteristics on Fig.5
Output impedance	$\square$		4900		Testing circuit Fig. 4 (5k6 load)

<sup>1</sup> Parameters are obtained in accordance with relevant parts of ISO5347 or ISO 16063 standards.

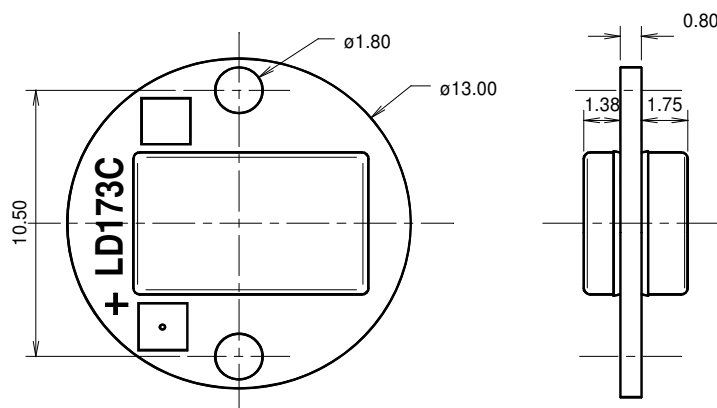


Fig. 1 LD173C Dimensions

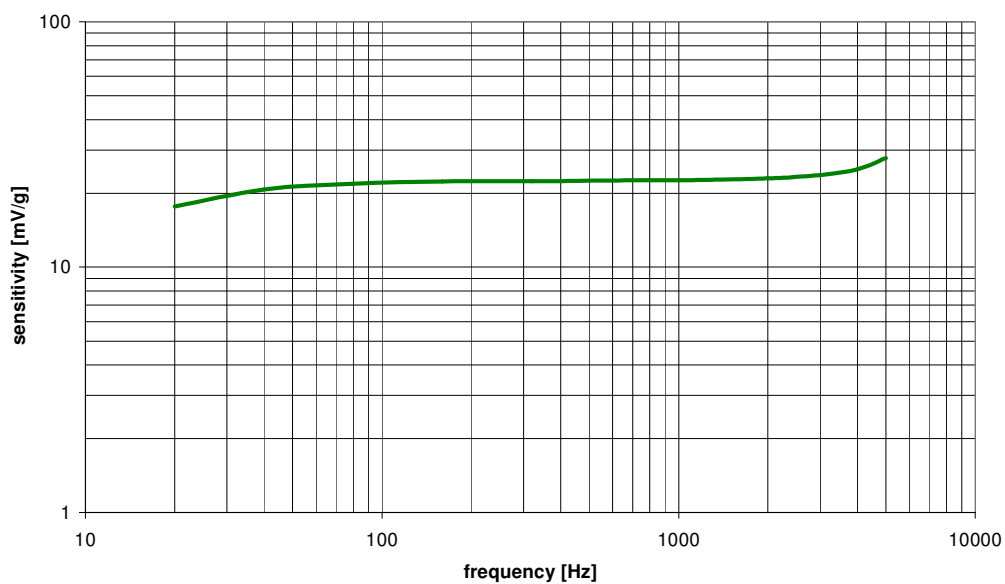


Fig. 2 Frequency characteristic of LD173C sensor

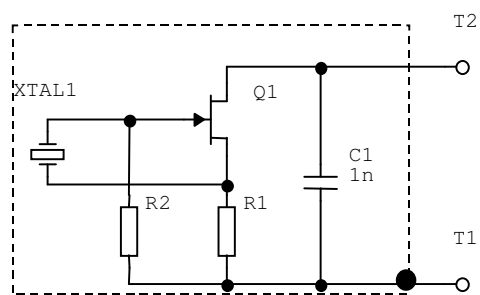


Fig. 3 Sensor schematics

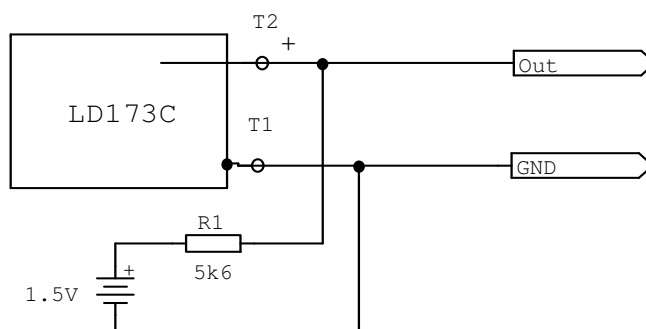


Fig. 4 Recommended connection, testing circuit

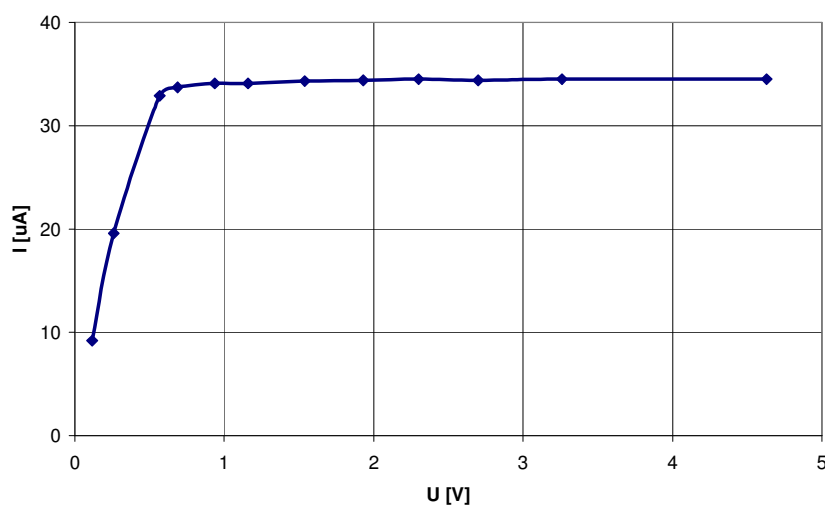


Fig. 5 DC output characteristic