

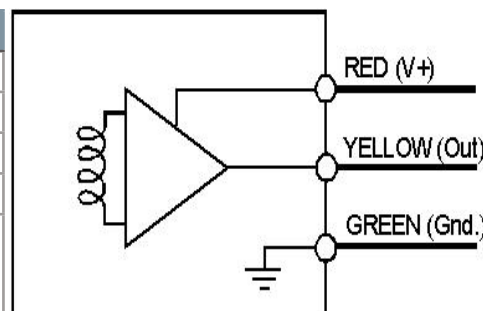
## Description

Amplified inductive pick-up coil for use in hearing instruments. The coil has a solid gold colored coating for excellent environmental protection and extra protection against mechanical stress. The integrated pre-amplifier features a high EMI suppression and a higher-order low frequency roll off for LF noise (50/60 Hz) attenuation. The output stage is equivalent to the one found in Sonion microphones with CMOS ICs (e.g. 6000, 96/9700 and 1M000 series), and allows direct switching between microphone and coil. The response curve is flat which ensures good matching of the telecoil and microphone response.

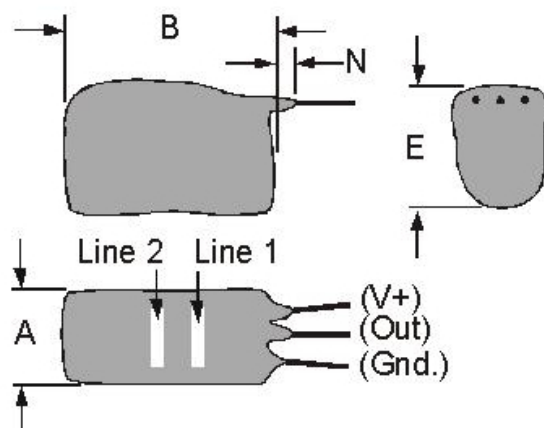


## Absolute maximum ratings

Parameters	Symbol	Min	Max	Unit
Supply voltage	Vdd	0.9	3.6	VDC
Operating temperature	Tw	-10	50	°C
Storage temperature	Ts	-40	80	°C
ESD protection level	Vesd	3		kV
ESD protection level: Class 2 according to MIL-STD-750D, test method 1020.2. Apply protection in accordance with IEC 61340-5-1 and 61340-5-2.				



## Product drawing - Dimensions in mm [inch]



## Mechanical data

Dimensions	in mm	in inch
Dimension A max.	1.9	0.075
Dimension B max.	4.9	0.193
Dimension E max.	2.8	0.110
Dimension N max.	2	0.079

### Color code

Line 1	White
Line 2	White

## Lead wires

Parameters	Supply lead (V+)	Signal lead (Out)	Ground lead (Gnd)
Diameter in mm	0.16	0.16	0.16
Plating	Silver	Silver	Silver
Color	Red	Yellow	Green
Length in mm *	30 ± 1	30 ± 1	30 ± 1
Strip/tin free end	None	None	None

\* Length measured from flange

## Assembly notes

None

Sonion reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible. Receivers series of this type can produce very high sound pressure levels. When such receivers are applied in hearing instruments or other communications equipment special attention should be paid to this capacity in order to prevent possible hearing damage.

## Specifications

Measuring conditions (unless stated otherwise): supply voltage = 1 VDC, frequency = 1 kHz, temperature = 23°C (73.4°F), H = 0.1 A/m and load = 10 pF/200 kOhm. All parameters were measured according their specific MQP.

Parameters		Symbol	Min	Typ	Max	Unit	Comments
Supply voltage		Vdd	0.9	1	1.5	VDC	
Supply current		Idd	40	55	90	μA	Vdd: 0.9 V-1.5 V
DC output voltage		Vo	450	580	800	mV	Vdd: 0.9 V-1.5 V
Output impedance		Zout	1700	3000	4500	Ohm	Vdd: 0.9 V-1.5 V
Sensitivity	@ 200 Hz	S200	-72.5	-70	-67.5	dB re. 1V/0.1Am <sup>-1</sup>	
	@ 1 Khz	S1k	-56.5	-54.5	-52.5		
	@ 5 kHz	S5k	-55	-52.5	-50		
Sensitivity	@ 200 Hz	S200	-75	-72.5	-70	dB re. 1V/0.1Am <sup>-1</sup>	10 kOhm load
	@ 1 kHz	S1k	-59	-57	-55		
	@ 5 kHz	S5k	-57.5	-55	-52.5		
1st High pass cutoff frequency		F1	175	217	270	Hz	
2nd High pass cutoff frequency		F2	0.85	1.05	1.3	kHz	S@5 kHz - 3 dB
1st Low pass cutoff frequency		F3	15.8	19.8	24	kHz	S@5 kHz - 3 dB
Equivalent input noise <sup>1</sup>		Ni		34.5	37	dB MFL *	0.1-10 kHz (Awgt)
Maximum input signal <sup>2</sup>		Mi		92.5		dB MFL *	THD < 1%
Dynamic range		DR		-58		dB	
Total harmonic distortion		THD		0.3	1	%	Vo = 10 mV rms
Power supply rejection <sup>3</sup>		PSR	16	20		dB	0.1-10 Khz
Equivalent EMI noise **	@ 0.9 GHz	Nemi0.9			46	dB MFL *	SMI255, E=75 V/m
	@ 1.9 GHz	Nemi1.9			43	dB MFL*	SMI255, E=50 V/m
50Hz suppression re. 2 kHz level		dB		50		dB	

### Notes:

\* 0 dB MFL (Magnetic Field Level) - 0 dB SPL (70 dB SPL- 100 mA/m is the typical conversation level)  
 0 dB MFL - 31.6 μA/m = Hr. Hi [MFL] = Vo [dB re 1V] - S [dB re 1V/Am<sup>-1</sup>] - Hr [dB re 1Am<sup>-1</sup>] =  
 Vo [dB re 1V] - S [dB re 1V/0.1Am<sup>-1</sup>] + 70

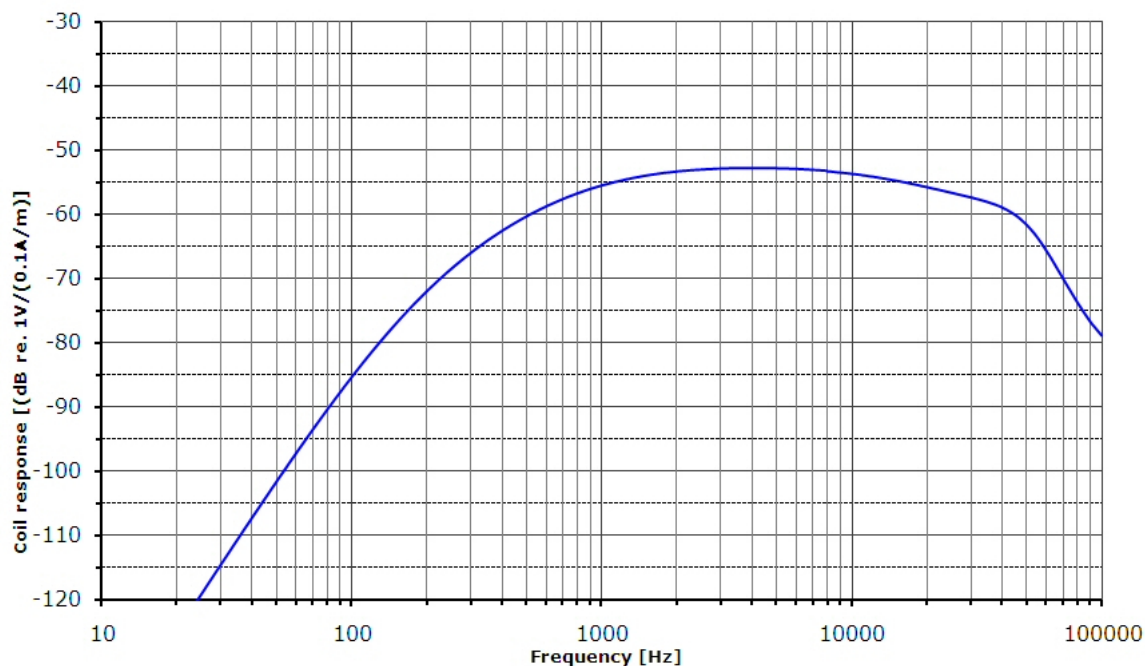
\*\* EMI noise measured in GTEM cell according variant of SMI255. Telecoil soldered with 10 mm effective lead wire length to a shielded hearing aid which is connected acoustically to measurement setup

<sup>1</sup> A-weighted input referred noise voltage

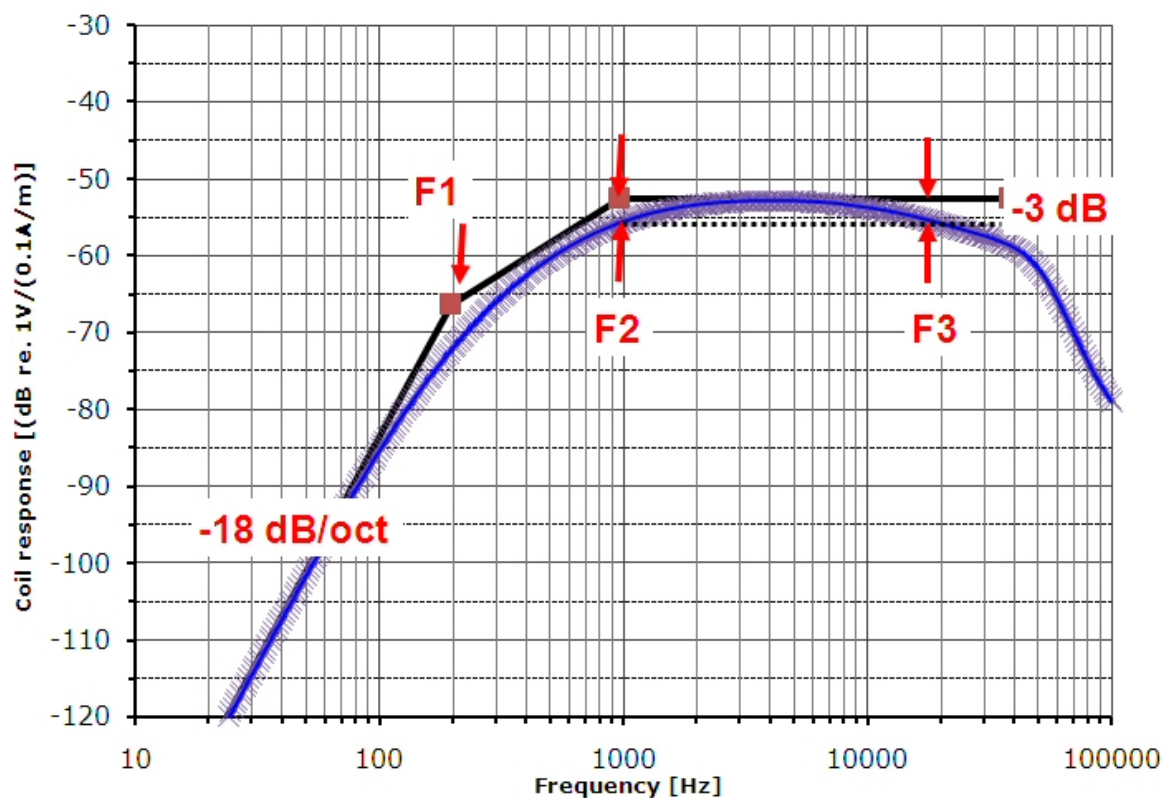
<sup>2</sup> With maximum THD of 1%

<sup>3</sup> Power supply rejection (PSR) is expressed as the maximum of inverse function of the small-signal voltage gain from the positive power supply line to the output of the amplifier in the frequency range 0.1-10kHz

## Typical response curve



## Cutoff frequency



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