

Data Sheet

Description

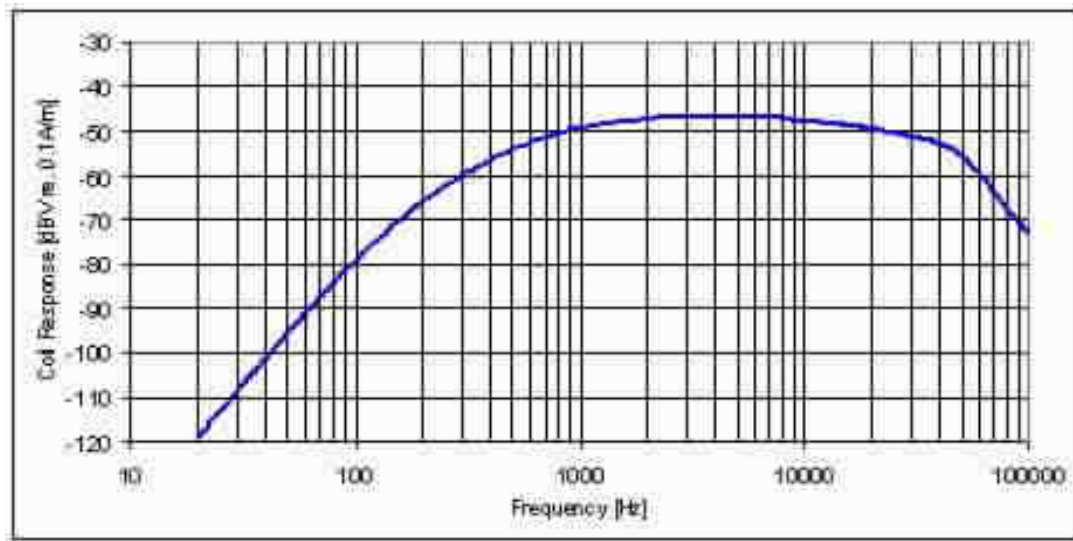
Amplified inductive pick-up coil for use in hearing instruments.

The coil has an integrated pre-amplifier with high EMI suppression for improved compatibility with digital cellular phones. Furthermore, it features a higher-order low frequency roll off for LF noise (50/60 Hz) attenuation.

The output stage is equivalent to the one found in our 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.



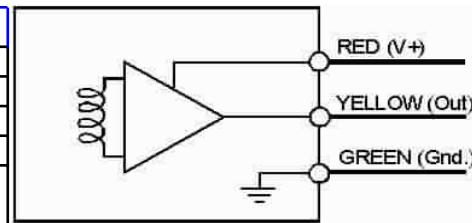
Typical response curve



Absolute maximum ratings

Parameter	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.



Sonion reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible.

Electrical characteristics

Unless otherwise specified, Vdd = 1 VDC, frequency = 1 kHz, temperature = 23°C (73.4F) and H = 100 mA/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: 0.9-1.5 V	
DC output voltage	Vo	450	580	800	mV	Vdd: 0.9-1.5 V	
Output impedance	Zout	1700	3000	4500	Ohm	Vdd: 0.9-1.5 V	
Sensitivity	@ 200 Hz	S200	-69.5	-67	-64.5	dB re 1V/0.1Am ⁻¹	
	@ 1 kHz	S1k	-51.5	-49.5	-47.5		
	@ 5 kHz	S5k	-49	-46.5	-44		
Sensitivity	@ 200 Hz	S200	-72	-69.5	-67	dB re 1V/0.1Am ⁻¹	10 kOhm load
	@ 1 kHz	S1k	-54	-52	-50		
	@ 5 kHz	S5k	-51.5	-49	-46.5		
1st High pass cutoff frequency	F1	175	217	270	Hz		
2nd High pass cutoff frequency	F2	0.85	1.05	1.3	kHz	\$@5kHz-3dB	
1st Low pass cutoff frequency	F3	15.8	19.8	24	kHz	\$@5kHz-3dB	
Equivalent input noise ¹	Ni		30	32.5	dB MFL*	0.1-10kHz (Awtg)	
Maximum output voltage swing	Vout		27		pk-to-pk mV	THD < 1%	
Maximum input signal ²	Mi		87.5		dB MFL*	THD < 1%	
Dynamic range	DR		-57.5		dB		
Total harmonic distortion (1kHz)	THD		0.3	1	%	Vo = 10mVrms	
Power supply rejection ³	PSR	16	20		dB	0.1-10kHz	
Eq. EMI noise ¹	0.9 GHz	Nemi0.9		37	dB MFL*	Near-field measurement	
	1.9 GHz	Nemi1.9		34	dB MFL*		
50 Hz suppression re 2 kHz level	dB		50		dB		

Notes:

¹ A-weighted input referred noise voltage

² With maximum THD of 1%

³ 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.

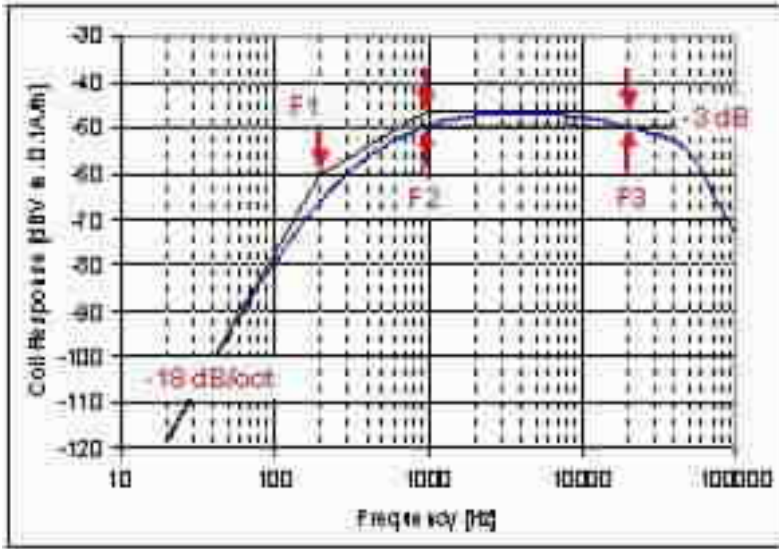
* 0 dB MFL (Magnetic Field Level) - 0 dB SPL (70 dB SPL - 100 mA/m is the typical conversation level)

0 dB MFL - 31.6 µA/m = Hr

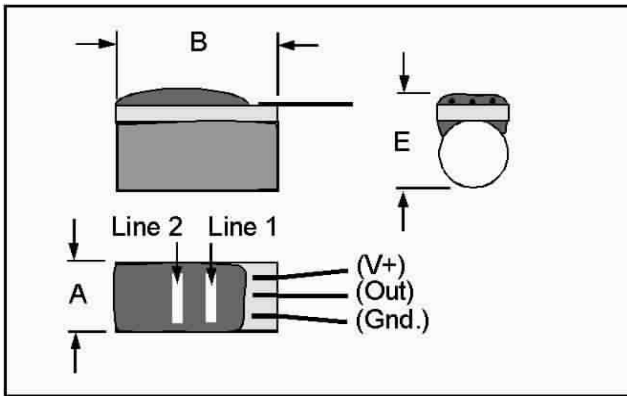
Hi [MFL] = Vo [dB re 1V] - S [dB re 1V/Am⁻¹] - Hr [dB re 1Am⁻¹] = Vo [dB re 1V] - S [dB re 1V/0.1Am⁻¹] + 70

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Cutoff frequency



Dimensions



Mechanical data

Dimensions	in mm	in inch
Dimension A max.	2.34	0.092
Dimension B max.	4.8	0.189
Dimension E max.	2.89	0.114

Color code

Line 1	Yellow
Line 2	None

Lead wires

Parameters	Supply lead (V+)	Signal lead (Out)	Ground lead (Gnd)
Diameter in mm	0.125	0.125	0.125
Plating	None	None	None
Color	Red	Yellow	Green
Length in mm*	30 ± 2	30 ± 2	30 ± 2
Strip/tin free end	None	None	None

* Length measured from flange.

Assembly notes

No black epoxy on lead wires, full black epoxy on coil wires, tinned lead wires.

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