Data Sheet

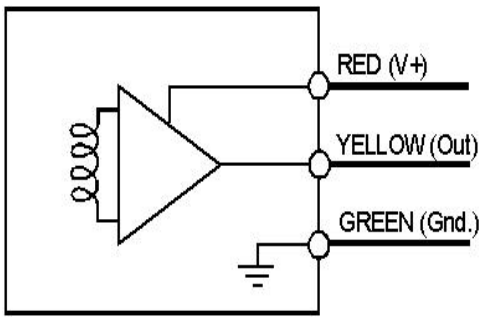
Amplified telecoil TA 33 CE 01

Description

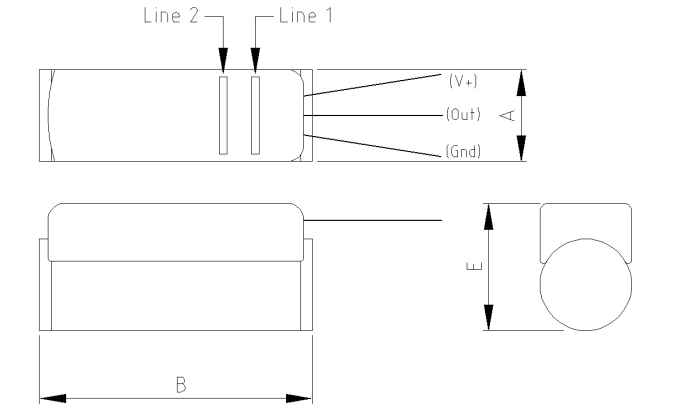
Amplified inductive pick-up coil for use in hearing instruments. The coil has an integrated pre-amplifier with standard EMI suppression for improved compatibility with digital cellular phones. Furthermore, it features a higher-order low frequency roll off for LF noise (50/60 Hz) attenuation. The output stage is equivalent to the one found in 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.	1.85	0.073
Dimension B max.	4.7	0.185
Dimension E max.	2.7	0.106

Color code	
Line 1	White
Line 2	Yellow

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

DK: +45 4630 6666
USA: +1 952 543 8300
PRC: +86 512 6832 3401
NL: +31 20 6068 100

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Item-Configuration number: 9010-3023812
Version: 1
Version date 16-Jun-2010

Specifications

Measuring conditions (unless stated otherwise): supply voltage = 1 VDC, frequency = 1 kHz, temperature = 27°C, 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-¹	
	@ 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-¹	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 [1]		Ni		34.5	37	dB MFL *	0.1-10 kHz (Awgt)
Maximum input signal [2]		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 [3]		PSR	16	20		dB	0.1-10 Khz
Equivalent EMI noise **	@ 0.9 GHz	Nemi0.9			46	dB MFL *	Near-field measurement
	@ 1.9 GHz	Nemi1.9			43	dB MFL*	
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-¹] - Hr [dB re 1Am-¹] =
Vo [dB re 1V] - S [dB re 1V/0.1Am-¹] + 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.

[1] A-weighted input refered 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.

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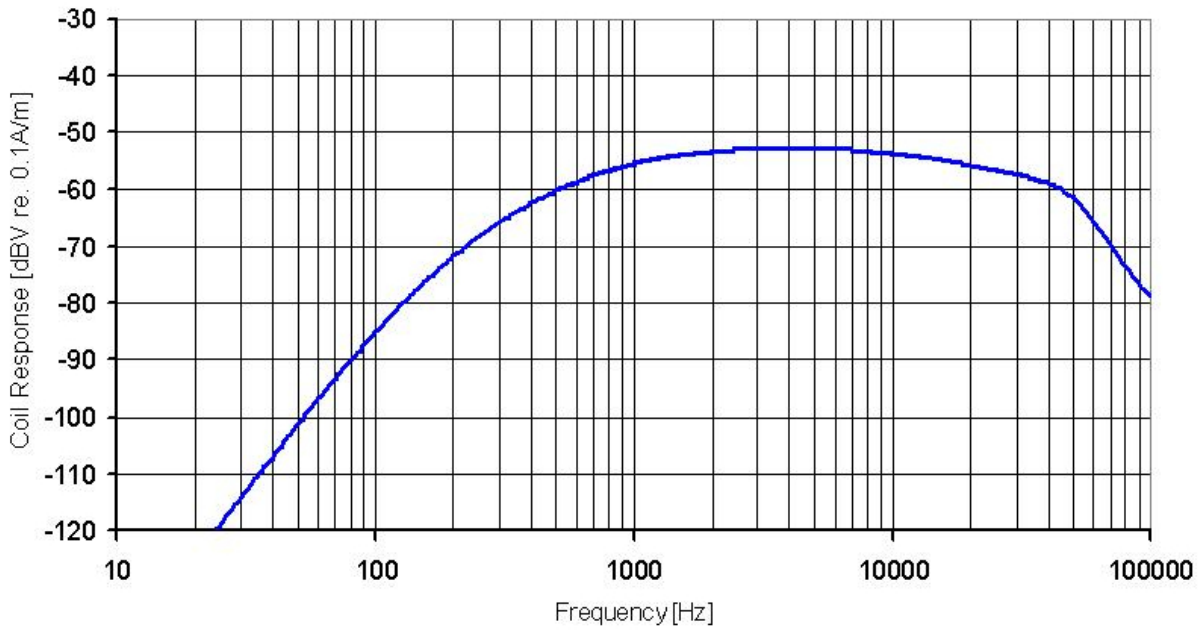
Typical response curve



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