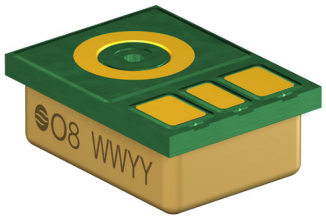
Description

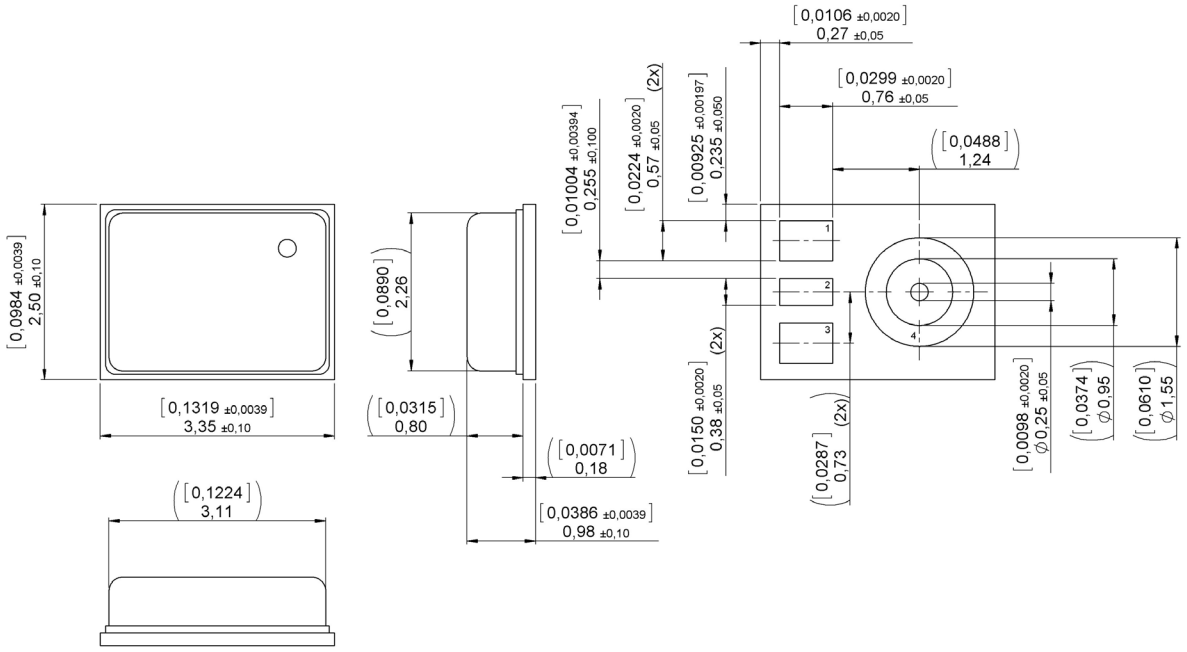
The O8BC03 is a high performance MEMS microphone with a unique combination of very low self-noise, tiny package volume (8.2 mm³), and low power consumption. These features, combined with the benefits of MEMS technology, reflow solder compatibility, and a highly stable response over time and temperature, make the O8BC03 an ideal microphone choice for hearing aids.



Features

- Small surface-mount package: 3.35x2.50x0.98 mm
- Reflow compatibility
- Stable response curve with humidity
- Non-inverting transfer
- Compatibility with p2i nanocoating process

Product drawing - Dimensions in mm [inch]



Pin configuration

1. Output: Ananlog output signal
2. GND: Ground*
3. VDD: Power supply
4. GND: Ground*

* Pin 2 and Pin 4 should both be grounded

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

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Specifications

All parameters are specified at 0.9 V and 1 MOhm // <200pF load impedance, AC-coupled with 1µF, unless specified otherwise. Environmental conditions: 23°C (73.4F), 50% RH.

Parameters		Min	Typ	Max	Unit	Comments
Sensitivity	@ 70 Hz	-5	-3	-2	dB	re. 1 kHz value
	@ 1 kHz	-39	-38	-37	dB	re. 1V per Pascal
	@ 10 kHz	-4	0	2	dB	re. 1 kHz value
	@ 25 kHz	-15	-10	-7	dB	re. 1 kHz value
	@ 32 kHz	-23.5	-18.5	-15	dB	re. 1 kHz value
Resonant peak	frequency	16	17	18	kHz	
	amplitude		7.5	10.5	dB	re. 1 kHz value
Equivalent noise (A-weighted)	10 Hz- 8 kHz		25.5	26.5	dB SPL	
	10 Hz-20 kHz		26.5	27.5	dB SPL	
1/3 Octave equivalent input noise			13.5	14.5	dB SPL	@ 1 kHz
Power supply feedthrough			-42	-35	dB	
Battery voltage range		0.88	0.9	1.4	VDC	absolute maximum 2.1 VDC
Battery drain			31	35	µA	
Output impedance		3	4.5	5.5	kOhm	with integrated 4.7nF cap.
DC output voltage		350	450	550	mV	
Maximum input level @ 1 kHz		119	120		dB SPL	5% THD
Startup time			0.25	1	sec	to within 0.5 dB of final sens.
				5	sec	to within 0.1 dB of final sens.
Peak battery drain at startup			150		µA	for ~2.5µs duration
Recovery time from overload				1	sec	to within 0.5 dB of final sens.
				5	sec	to within 0.1 dB of final sens.
Input-referred vibration sensitivity			65	67	dB SPL/g	@ 1 kHz
Humidity coefficient of sensitivity				0.005	dB/%RH	
Input-referred EMI noise	0.7-0.96 Ghz			25	dB SPL	according to IEC 60118-13 Ed 4.0 and with pin 4 gounded
	1.4-2.0 GHz			25	dB SPL	
	2.0-2.7 GHz			25	dB SPL	
Operating temperature range		-10		40	°C	
Storage temperature range		-55		150	°C	
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.						

Mechanical data

Weight	0.016 gr.
Package type	4-Treminal LGA + Metal lid
Lid	Ni/Au, SS304
Substrate	Ni/Au, 4L RC
Solder pad content	Cu/Ni/Au

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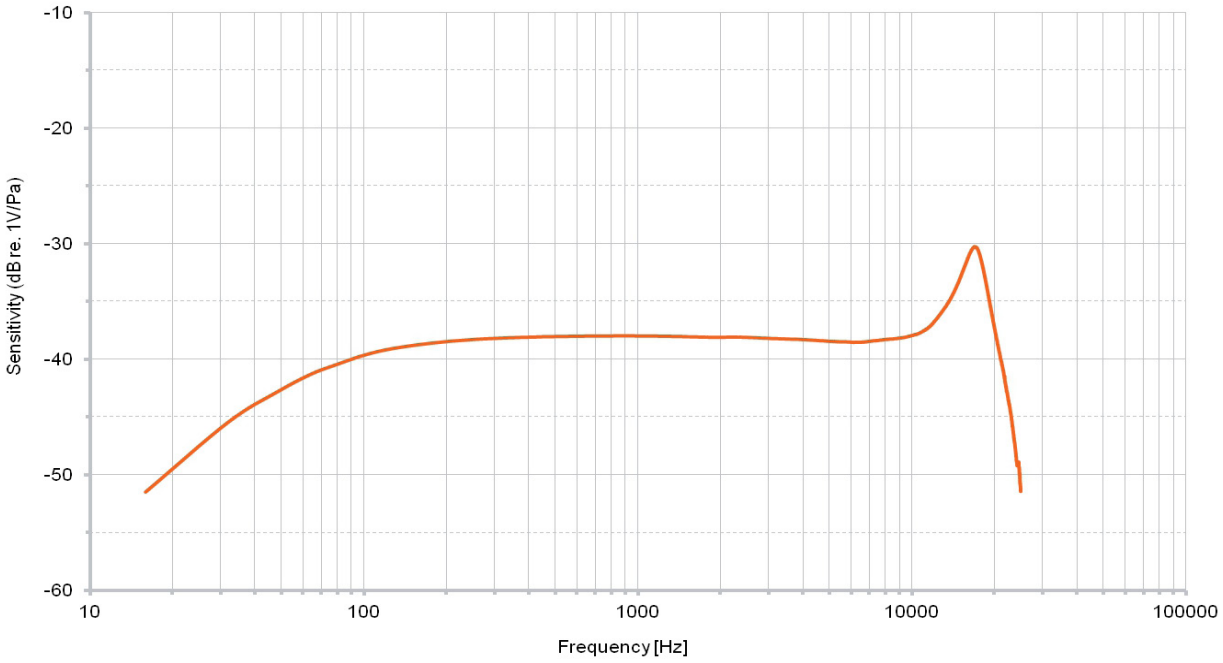
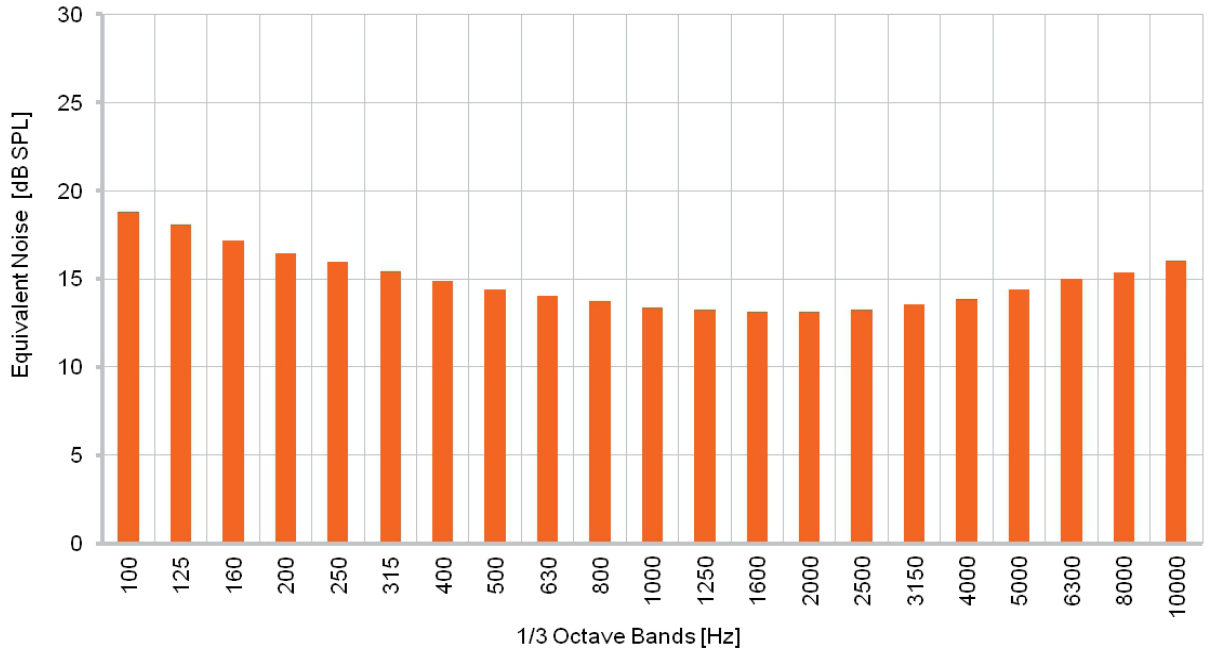
Typical response curve



Typical 1/3 octave equivalent noise



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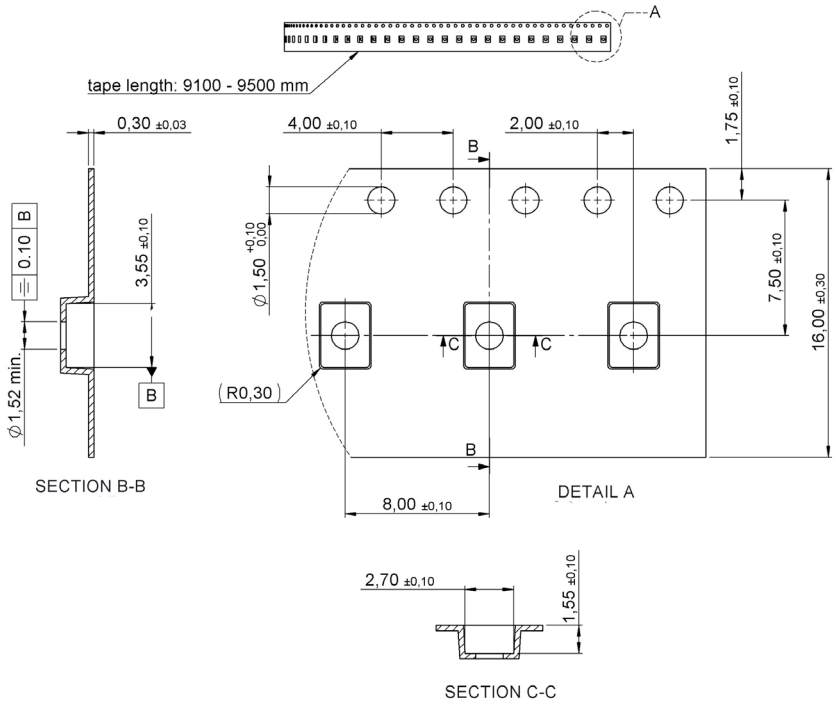
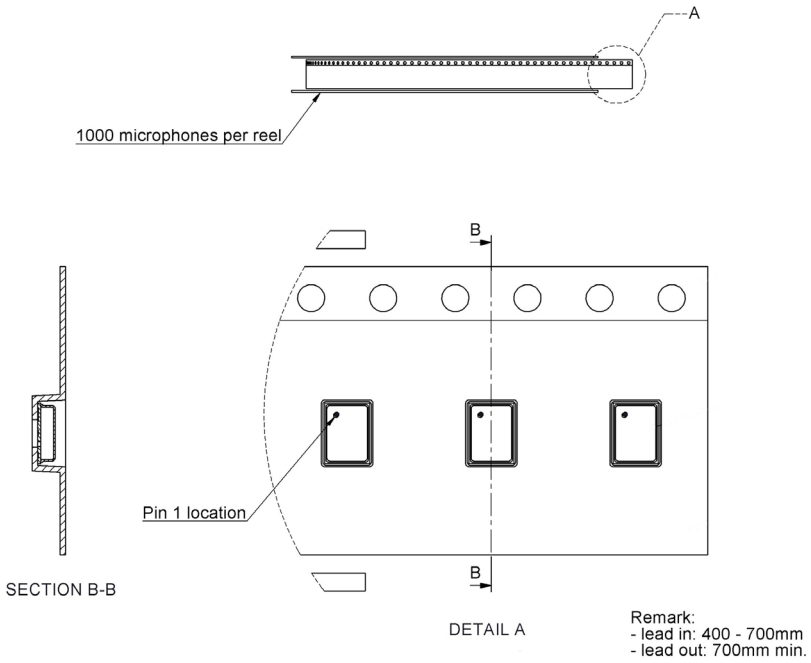
Packaging - Dimensions in mm

Reel diameter 180 mm (7 inch)



Packaging - Product orientation

Quantity per reel 1000



Notes: Packaging MSL (Moisture Sensitivity Level) Class 1. Tape and Reel in accordance with EIA-481.

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