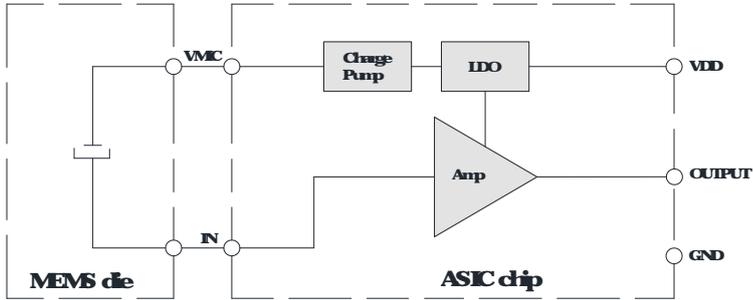


The **is a small package, single ended output bottom pot analog MEMS microphone, consists of a MEMS sensor and a low noise level ASIC.**



2.7x1.8x0.9mm Bottom Pot

Single Ended Output

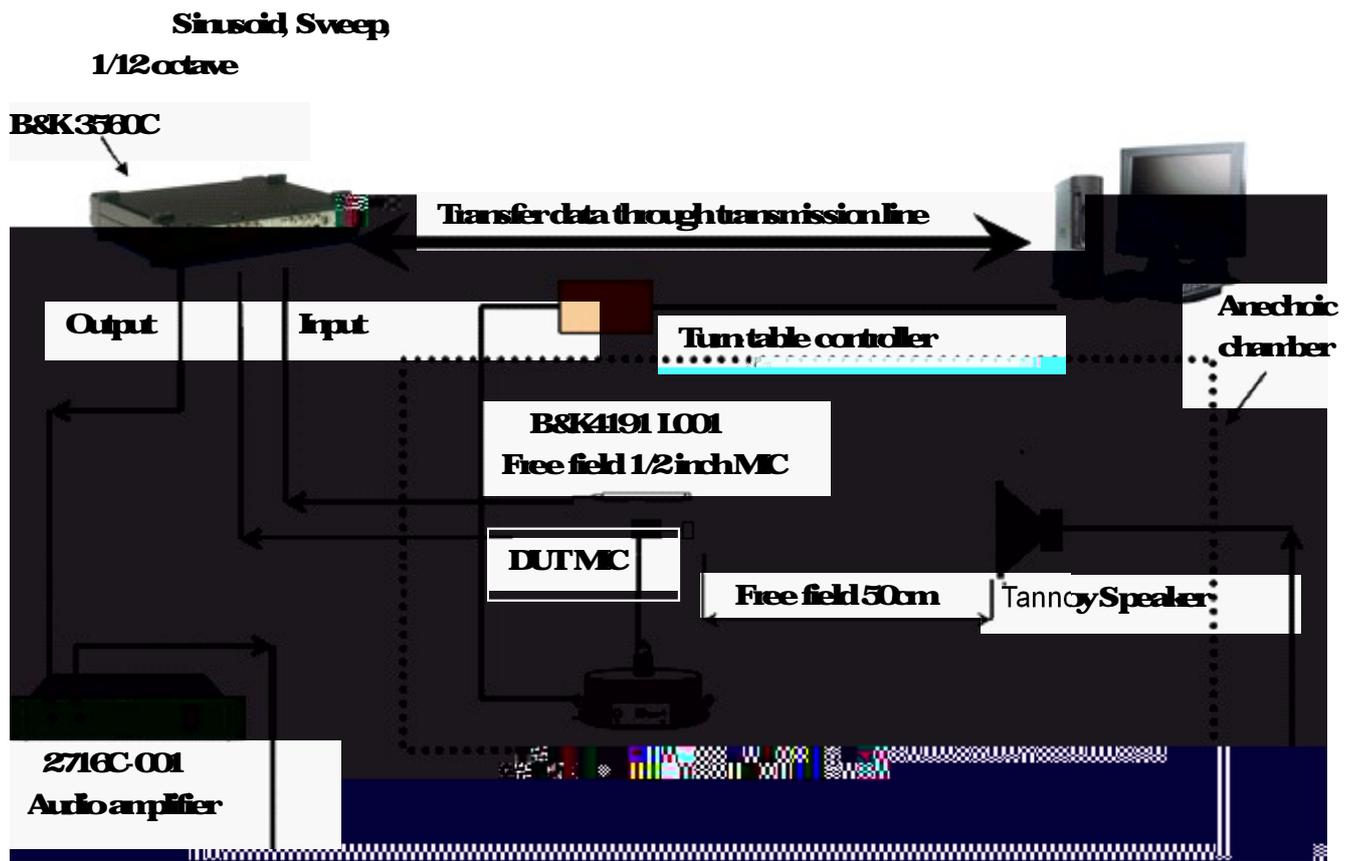
x2 . Noise Sensitivity +/ - 1ug

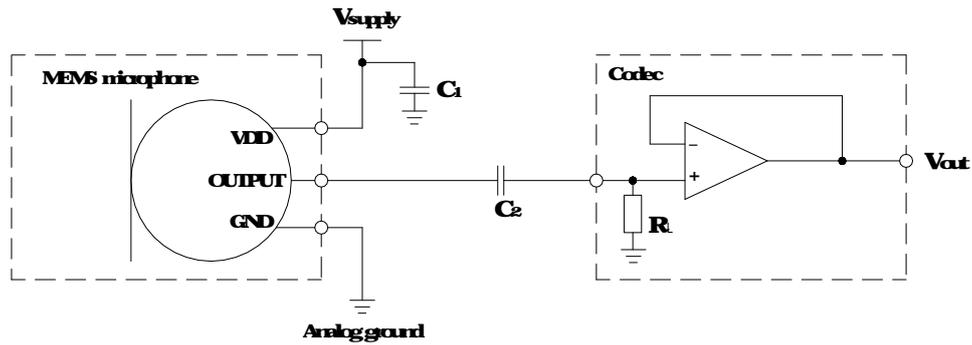
A 2

Test condition: $+25\pm 2^{\circ}\text{C}$, 60% ~ 70% RH, 86-106kpa, Vdd=2V, no load, unless otherwise specified

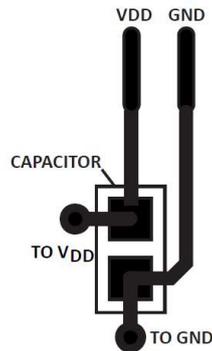
No	Parameter	Symbol	Condition	Min	Nom	Max	Unit
1	Sensitivity	S	f=1kHz, P _{in} =1Pa 0dB=1V/Pa	-39	-38	-37	dB
2	Operating Voltage	V _{DD}		1.6	2	3.6	V
3	Directivity			Omnidirectional			
4	Polarity		Sound pressure increase	Output voltage increase			
5	Sensitivity vs. Voltage	S	V _s = 3.6V to 1.6V	0.5			dB
6	Output Impedance	Z _{OUT}	f=1kHz			400	
7	Current Consumption	I	1.6V to 3.6V		120	200	μA
8	S/N Ratio	S/N	20-20kHz Bandwidth A Weighted	60	62		dB
9	Total Harmonic Distortion	THD	94dB SPL @ 1kHz		0.05	0.05	%
			125dB SPL @ 1kHz		1		
10	Acoustic Overload Point	ACP	THD 10% @ 1kHz		127		dB SPL
11	Power Supply Rejection	PSR	100mVpp Square wave @ 217Hz, A weighted		-100	-90	dB
12	Power Supply Rejection Ratio	PSRR	200mVpp Sine wave @ 1kHz	60	68		dB
13	DC output	V _{DC}			0.85		V
14	Output load	C _{load}				100	pF
		R _{load}		8			K

Note: Frequency response, sensitivity and current consumption are tested by 100% on production line.





A 0.1µF ceramic type decoupling capacitor C₁ is strongly recommended for every microphone and it should be placed as close to the VDD pad to reduce the noise on power supply;
The trace connected to each pad of capacitor should be as short as possible, and should stay on one layer of PCB without via. For the best performance, recommend to place the capacitor equidistance from power and ground pins of microphone, or slightly closer to the power pin if space not allowed. System ground should connect to far side of the capacitor, as shown in fig 10



DC blocking capacitor C₂ is required on the output signal line. The 3dB cut off frequency can be calculated using following equation which is related to DC blocking capacitor C₂ and input resistance of the input amplifier:

$$3dB \text{ cut off frequency} = 1/2 R_i C_2$$

In order to get a cut off frequency below 20Hz, minimum 1µF value of C₂ and minimum 20K value of input resistance of the input amplifier is recommended



tests, the sensitivity change of DUT shall be less than 10% after the tests, and shall keep its initial operation

1	Preconditioning	24 hour bake at 125°C, followed by 168 hours at 85°C, followed by 3 passes solder reflow only for the following: Hold
2	H-Temperature Storage Test	105±3, 1000 hours @ R4@ p H

12	ESD Test 1	<p>a HMB Discharge Position IO pins Charge Voltage ±3000V Discharge Network 100pF & 1500</p> <p>b CDM Discharge Position IO pins Charge Voltage ±250V</p>
13	ESD Test 2	<p>The tests are performed acc. to IEC61000-4-2 level 3</p> <p>a Contact Discharge Discharge Position Output of Microphone Charge Voltage ±6000VDC Discharge Network 150pF & 330</p> <p>b Air Discharge Discharge Position Sound Hole Charge Voltage ±8000VDC Discharge Network 150pF & 330</p>
14	Structure Shock Test	<p>1000g Duration 0.1ms, each 3 shocks for XYZ 3 axes, The sensitivity change should be less than 1dB after testing</p>
15	Reflow	<p>3 reflow cycles with peak temperature of +260 according to reflow profile</p>



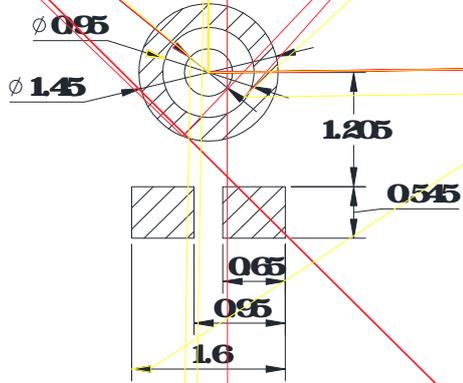
CautionLabel

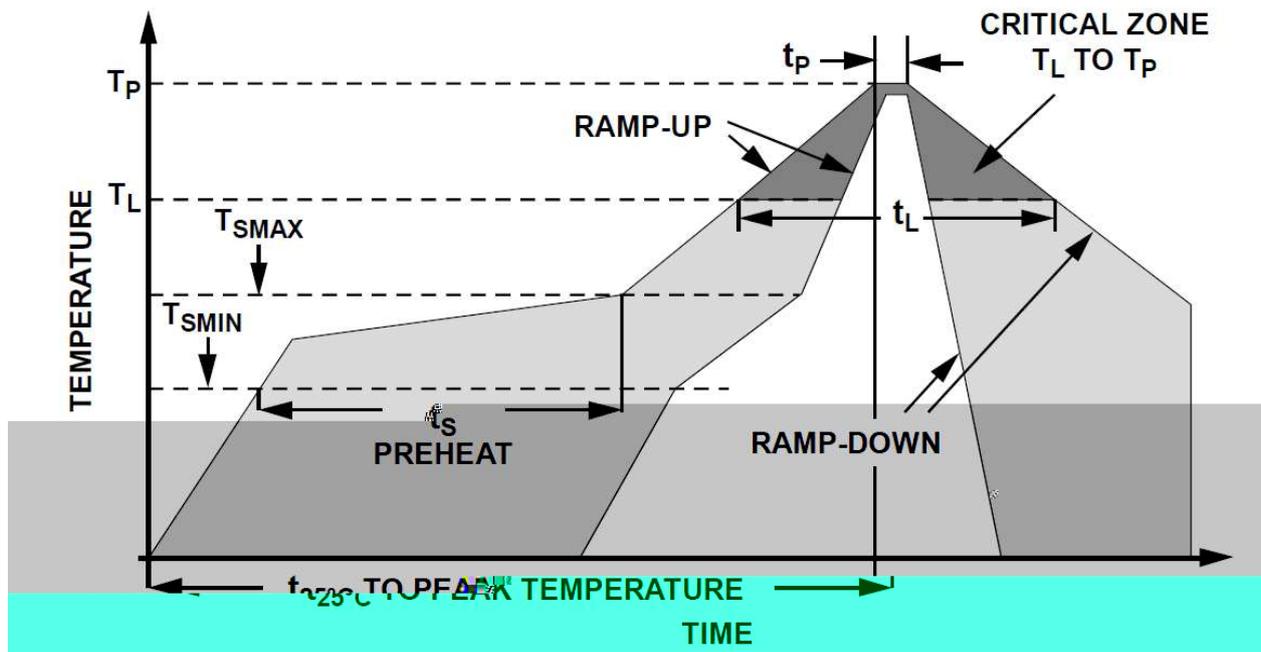


Desiccant



PCB hole see note





Additional Notes

- Mc should cool to room temp before next flow cycle if more reflow is needed**
- No more than 3 times reflow is recommended**
- Do not board wash by liquid or ultrasonic after the reflow process.**
- Do not pull a vacuum over pot hole of the microphone.**
- Do not insert any object in pot hole of device at any time.**
- Suggest SMT the microphone at last time if double side PCBA used**
- Do not seal sound port during reflow.**
- If there is any leakage risk, the peak temperature should be set to less than 240°C or more than 255°C.**

External diameter is 1.3mm
Inside diameter is 1.0mm

