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Component Specification

Product : Microphone
Part Number : CA-MCM372911-42-2120
Drawing No : KIC2120

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2. Electrical & Acoustical Characteristics
3. Test Circuit
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1. General

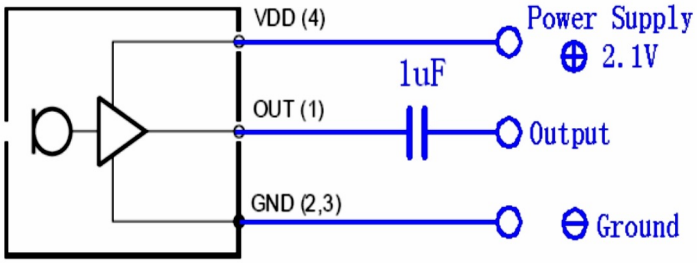
Microphone

2. Electrical and Acoustic Characteristics

No	Parameter	Symbol	Condition	Limits			Unit
				Min.	Standard	Max.	
1	Dimension			3.76x2.95x1.1(H)			mm
2	Directivity			Omni directional			
3	Sensitivity	S	F=1kHz, Pin=1Pa	-45	-42	-39	dB
4	Operating Voltage			1,52	2	3,6	V
5	Output Impedance	ZOUT	F=1kHZ			400	Ω
6	Current Consumption	VDD	1,52 to 3,6			250	uA
7	Sensitivity Voltage	ΔS	VS=3,6 to 1,52V	<0,5			DB
8	Signal to Noise Ratio	S/N	F=1kHz, Pin=1Pa (A-Weighted)	57			
9	Total Harmonic Distortion	THD	100dB SPL @1KHz 115dB SPL @1KHz			1 3	%
10	Acoustic Overload Point	AOP	THD<10% @1KHz S=Type			128	dB SPL
11	Power Supply Rejection	PSR	100m Vpp Square Wave @217Hz A-Weighted			-80	dB(A)
12	Power Supply Rejection Ratio	PSRR	200m Vpp Sine Wave @1KHz	60			dB
13	Environmental Regulations		ROHS				

1) Psophometrically weighted noise measurement with CCITT-filter (ITU-T Rec. P.53)
2) Noise measurement with A-weighting filter (IEC 651)

3. Test Circuit



Pin Definition and Function		
Pin No.	Symbol	Function
1	OUT	Output
2	GND	Ground
3	GND	Ground
4	VDD	Power

Test Conditions: Temperature: 25ºC Relative humidity: 45% + - 5% R.H Voltage: 2.0V

4. Frequency Response Curve

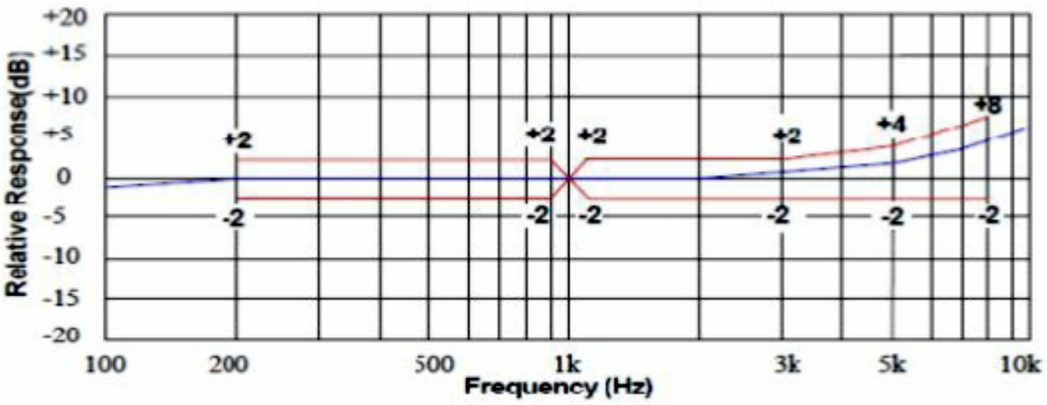
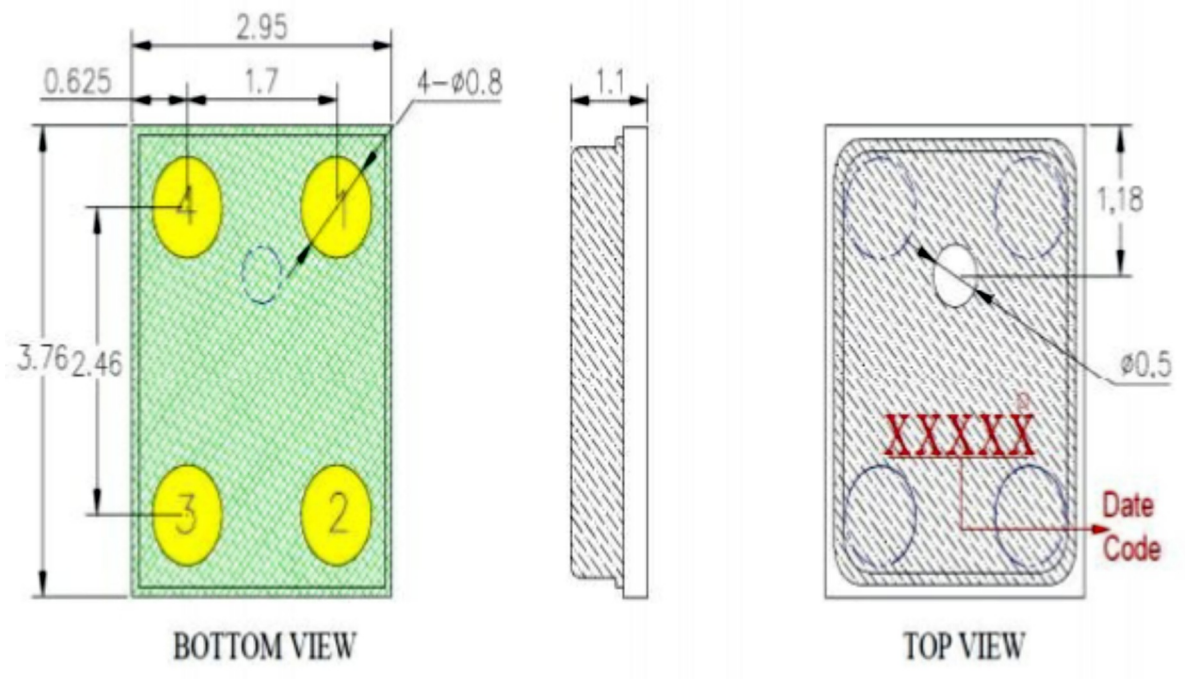


Fig. 4-1 Frequency Response

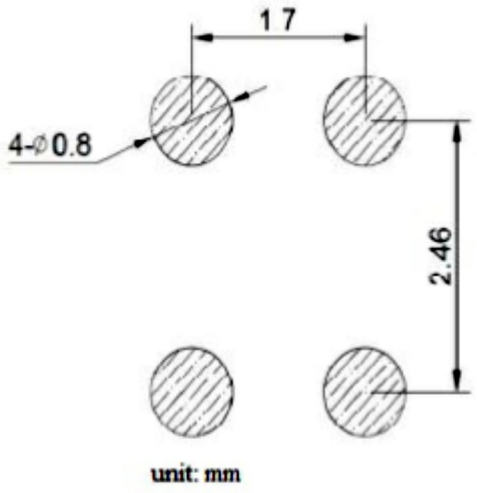
Table 4-1 Frequency Response Limit Template

Frequency [Hz]	200	300	500	3K	5K	8K
Upper Limit [dB]	2	2	2	2	4	8
Lower Limit [dB]	-2	-2	-2	-2	-2	-2

5. Dimension



5.1. Recommended Customer Land Pattern

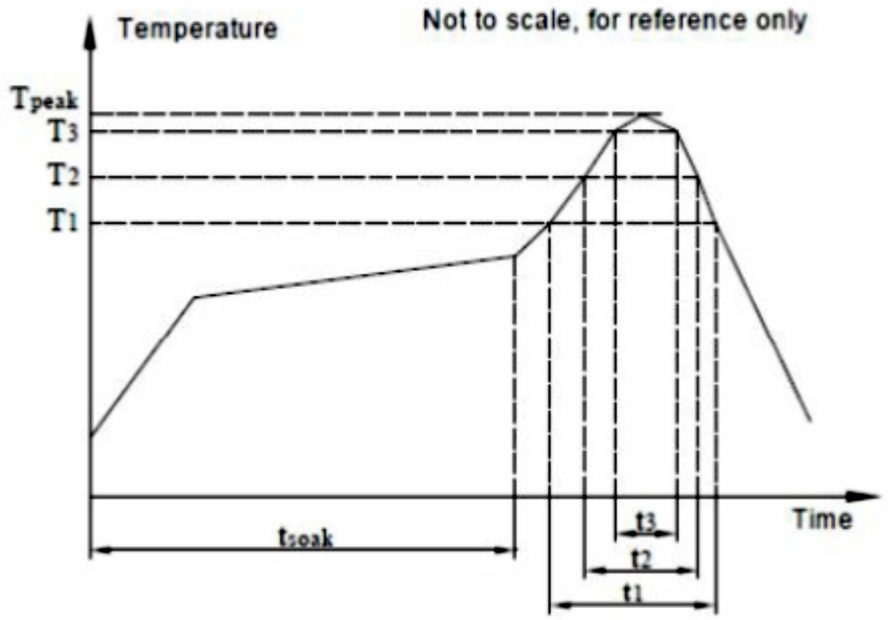


1 . 0	07/04/18		L. Chen	S. Ge	G. Schubert
Revision	Date	Notes	Drawn by	Checked by	Approved by

6. Reliability Test

No	Items	Specification
1	High Temperature Test	+85°C for 240 hours
2	Low Temperature Test	-40°C for 240 hours
3	Humidity & Heat Test	+70°C and 93% RH for 240 hours
4	Thermal Shocking Test	Temperature & Duration -40°C, 30 minutes Temperature & Duration +80°C, 30 minutes Cycles: 32 cycles
5	Vibration Test	Frequency: 10-55Hz Amplitude: 1,52mm Direction: 2 directions Duration: 2 hours
6	Drop Test	Drop the microphone to the floor without package. Height: 1,5m Reference Surface: slippery marble floor Duration: 5 times
7	Electrostatic Discharge	The tests are performed acc. To IEC61000-4-2 level 3: a. Contact Discharge Discharche Position: Output of Microphone Charge Voltage: ±6000VDC Discharche Network: 150pF & 330Ω b. Air Discharce Discharche Position: Soundhole Charge Voltage: ±8000VDC Discharche Network: 150pF & 330Ω
8	Storage Temperature/ Humidity	-40 ~ +80°C / 35~85% RH
9	Operating Temperature/ Humidity	-30 ~ +70°C / 35~85% RH

7. Reflow profile

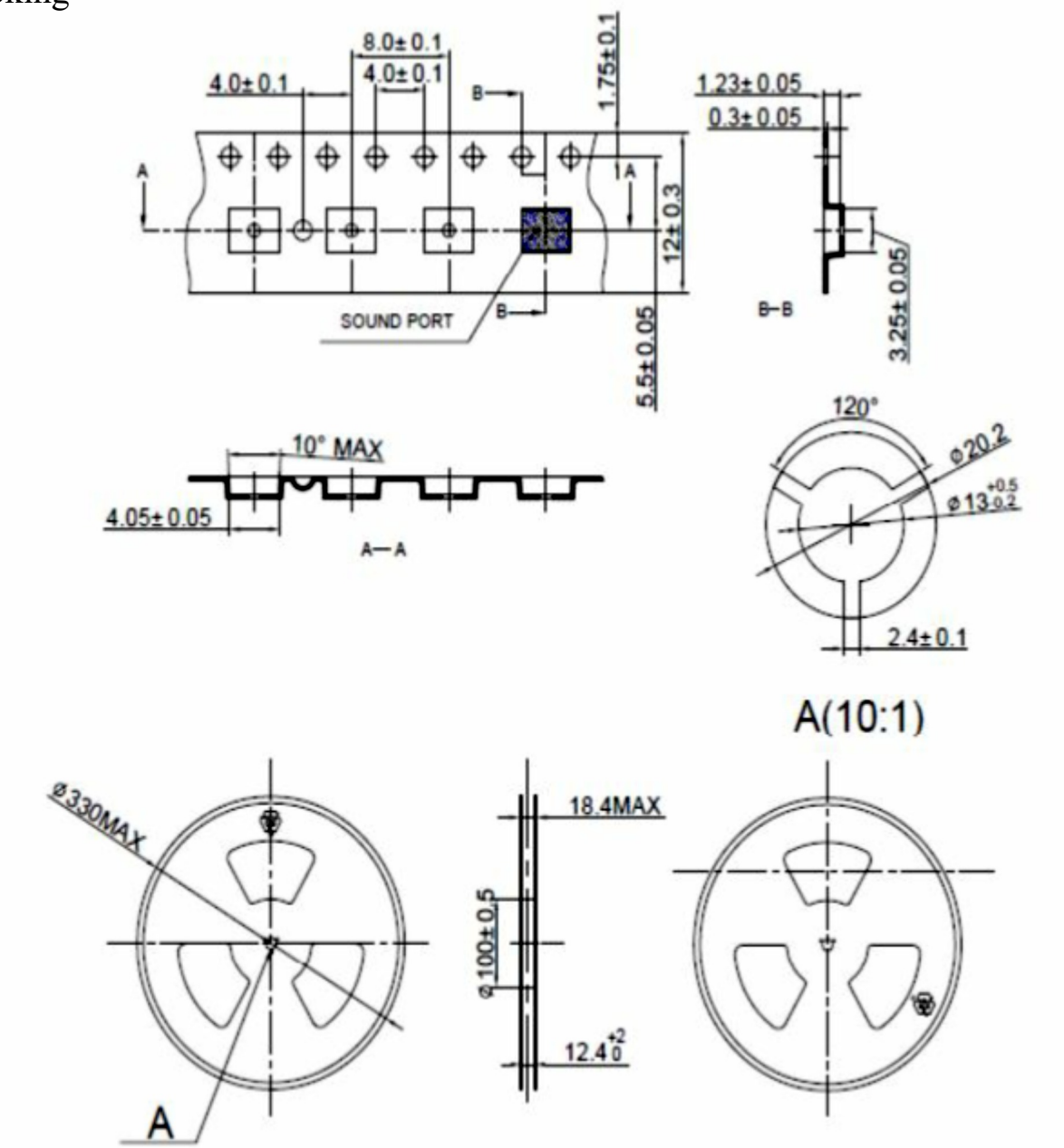


*After the initial reflow, the MIC shall be resumed to room temperature if more reflow is needed.

*The test should be conducted after the MIC unit has been exposed to room temperature for 3 hours.

Parameter	Reference	Specification
Average Temperature Gradient in Preheating		2.5°C/s
Soak Time	Tsoak	2-3 minutes
Time above 217°C	t1	60-150s
Time above 230°C	t2	Max 50s
Time above 250°C	t3	Max 10s
Peak Temperature in Reflow	Tpeak	255°C (–0/+5°C)
Temperature Gradient in Cooling		Max -5°C/s

8. Packing



Tape and Reel	φ330mm	5,500PCS×1=5,500PCS
Batch Box	120mm*350mm*365mm	5,500PCS×5=27,500PCS
Shipping Box	265mm*375mm*400mm	27,500PCS×2=55,000PCS

1 . 0	07/04/18		L. Chen	S. Ge	G. Schubert
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9) Revision

Rev. No	Date	Page	Description	Sign
10	07/04/18	all	Production release	Wang.Xue