



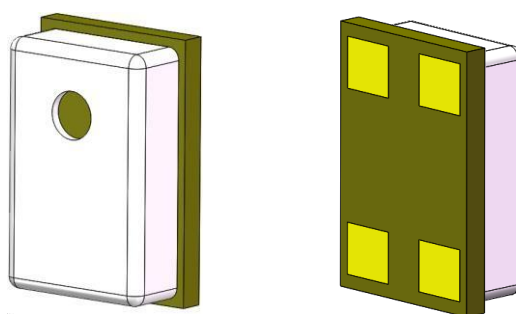
Specification of Analog MEMS Microphone

RoHS Compliance & Halogen Free

YG Model: SA2718T421-WJ01

Customer:

Customer Model :



YG

Designed by: Matthew Lee

Checked by: Echo Qiu

Approved by: Jack Liu

Customer Approval

Approval by: _____

深圳市莺歌声学技术有限公司

Shenzhen Yingge Acoustics Technology Co., Ltd.



Address: No.3018 Shennan Middle Road, Futian District,
Shenzhen, Guangdong, P.R.C.

Tel: +86 755-83227251 13509631258 Mr.sun

Fax: +86 755-83012196

E-Mail: yg@yinglear.com mic-acts@163.com

QQ:1755836851 P.C.:518000

Website: <https://www.yinglear.com>



Contents

1. Introduction.....	3
2. Electrical Characteristics.....	3
3. Frequency Response Curve.....	4
4. Test Setup.....	4
5. Measurement Circuit.....	4
6. Mechanical Characteristics.....	5
6.1. Weight.....	5
6.2. Appearance Drawing.....	5
7. Application.....	6
7.1. Pickup Tool Pick Location & PCB Solder Pad Layout.....	6
7.2. Recommended Reflow Process Condition.....	6
7.3. Storage Condition.....	6
8. Packaging.....	7
8.1. Tape & Reel Specification.....	7
8.2. Packaging Information.....	8
9. Reliability Test.....	9



MEMS Microphone

1. Introduction

The SA2718T MEMS Microphones are integrated with specialized Pre-amplification ASIC to provide high sensitivity, high SNR output from a capacitive audio sensor. It's packaged for surface mounting and high temperature reflow assembly.

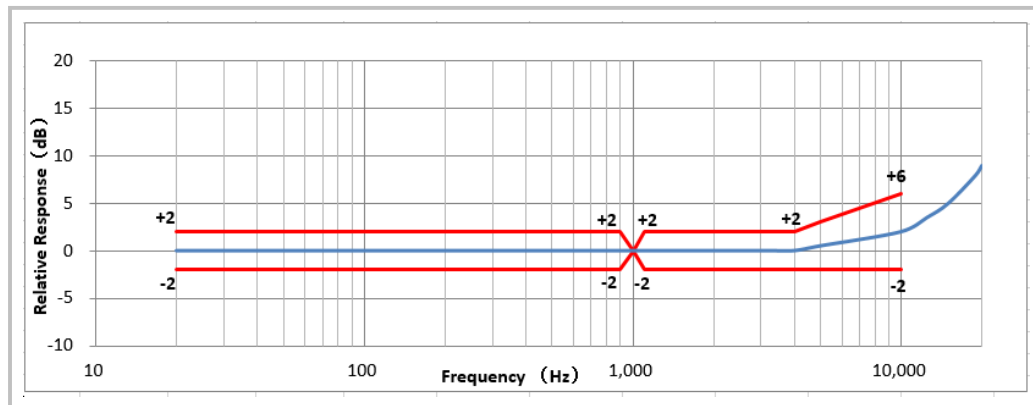
2. Electrical Characteristics

Test Condition: $V_{DD}=2.0V$, $23\pm 2^{\circ}C$, $55\pm 10\%R.H.$, unless otherwise specified.

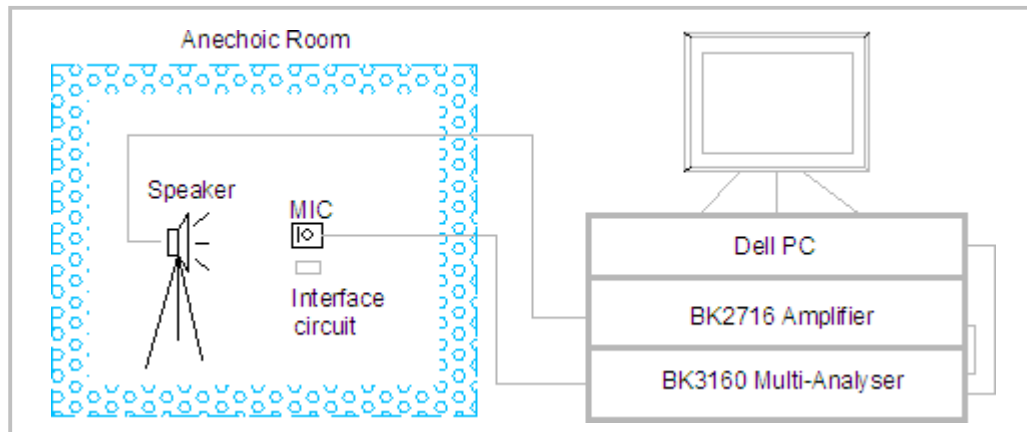
Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Directivity			Omni-directional			
Sensitivity Range	S	94dB SPL @1kHz,	-43	-42	-41	dB
Output Impedance	Z_{out}	94dB SPL @1kHz,			300	Ω
Current Consumption	I				200	μA
S/N Ratio	SNR	94dB SPL @1kHz, A-Weighted		59		dB(A)
Operating Voltage	V_{DD}		1.6	2.0	3.6	V
Total Harmonic Distortion	THD	94dB SPL @1kHz,			0.5	%
Sensitivity Drop	ΔS	94dB SPL @1kHz, $V_{DD}=3.6V\sim 1.6V$			0.5	dB
Acoustic Overload Point	AOP	10% THD @1kHz		130		dB
Power Supply Rejection	PSR	100mVpp Square wave @217Hz, A-weighted		-100		dB



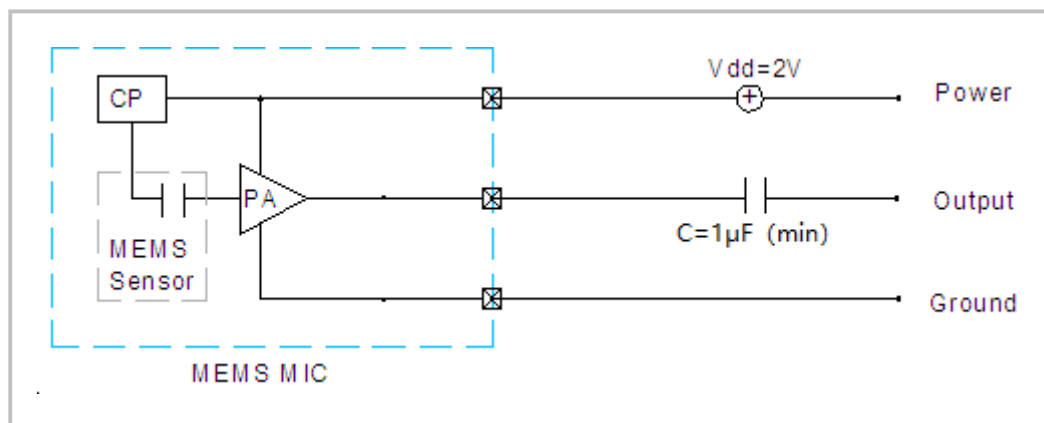
3. Frequency Response Curve



4. Test Setup (Sensitivity Test in Anechoic Room)



5. Measurement Circuit

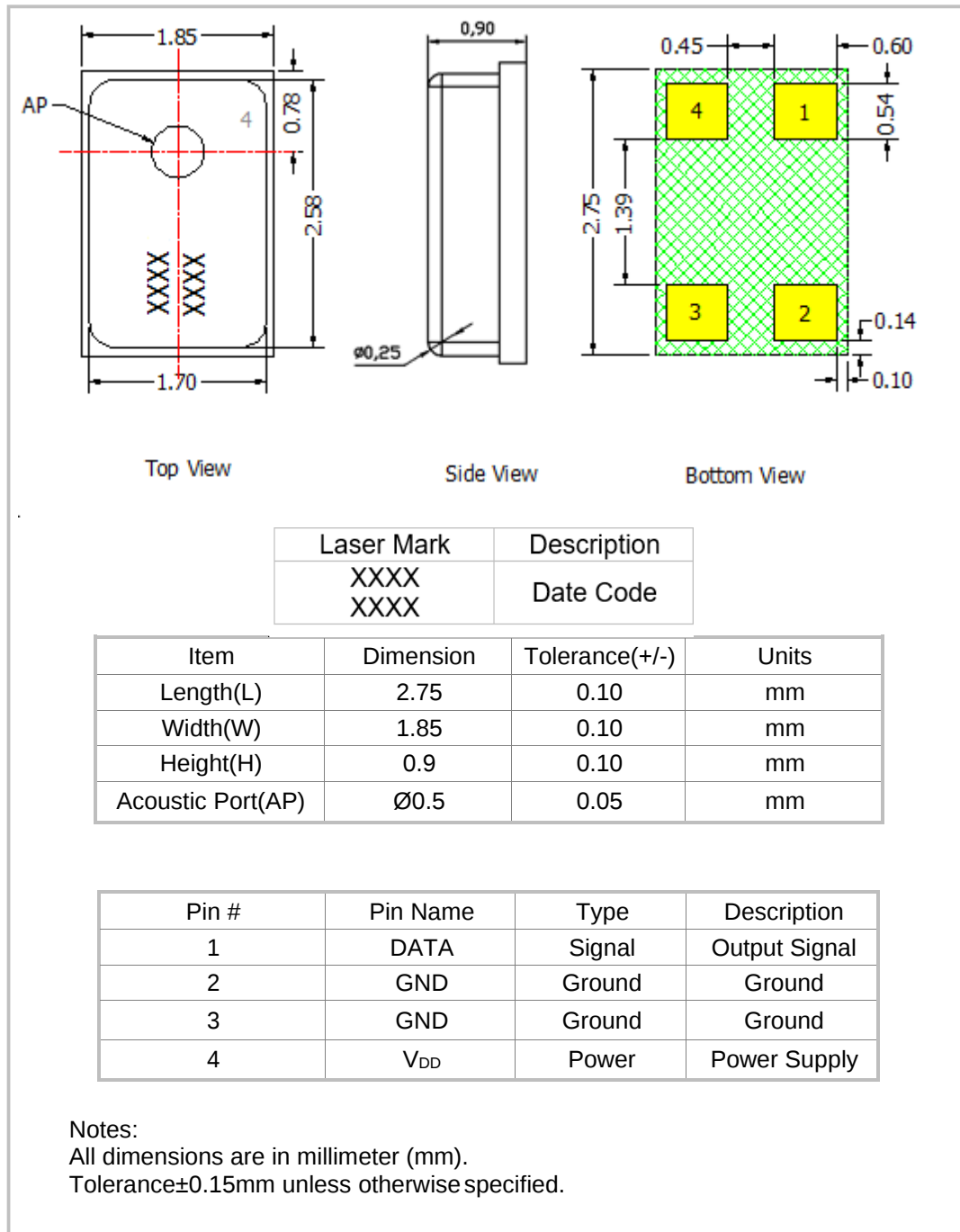




6. Mechanical Characteristics

6.1 Weight : Less than 0.3g

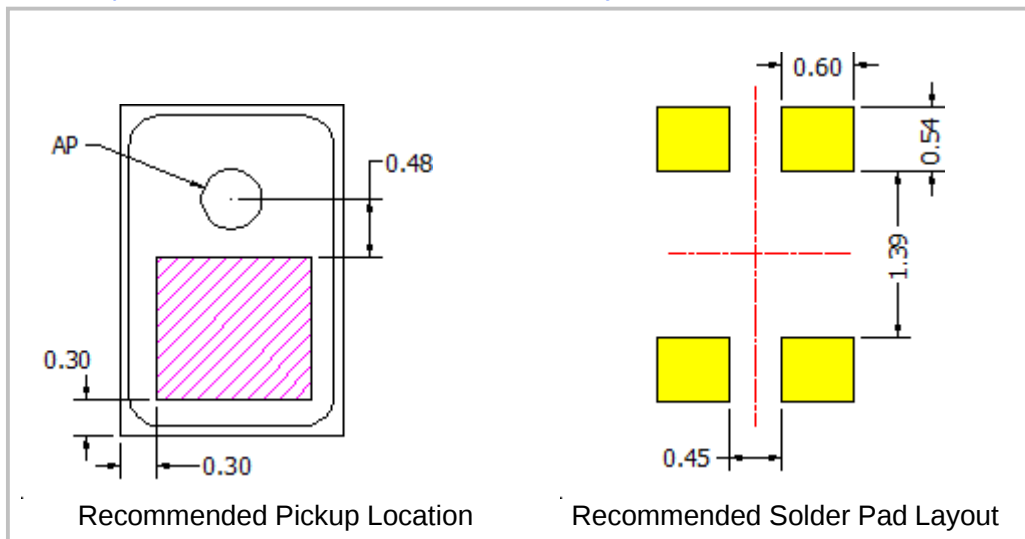
6.2 Appearance Drawing(unit: mm)





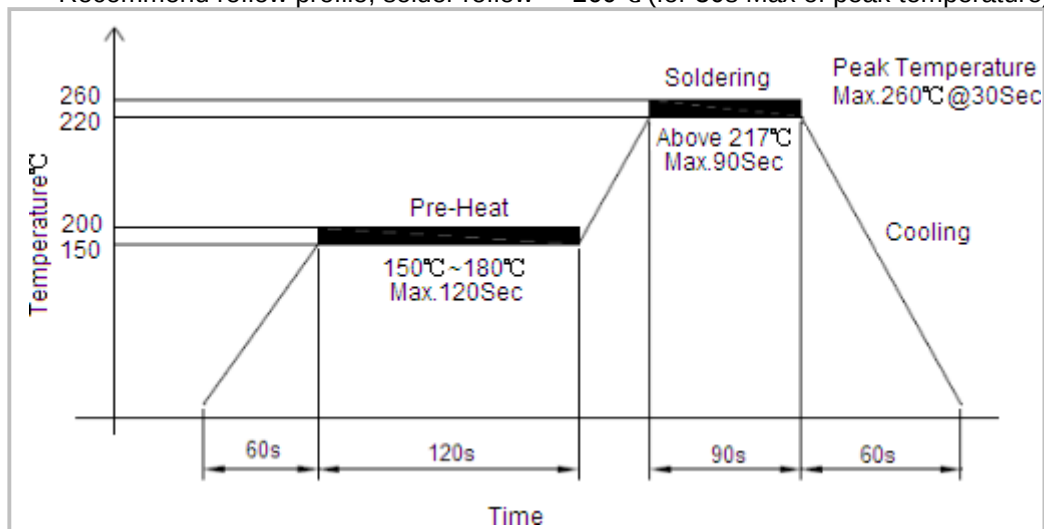
7. Application

7.1 Pickup Tool Pick Location & PCB Solder Pad Layout



7.2 Recommended Reflow Process Condition

Recommend reflow profile, solder reflow $\leq 260^{\circ}\text{C}$ (for 30s Max of peak temperature).



Important Notes

In order to minimize device damage:

1. Do not wash or clean the boards after the reflow process.
2. Do not apply the airflow which pressure over 0.3MPa blow into the port hole within a distance of less than 5 cm.
3. Do not exposed to ultrasonic processing or cleaning.
4. Do not pull a vacuum over port hole of the microphone.

7.3 Storage Condition

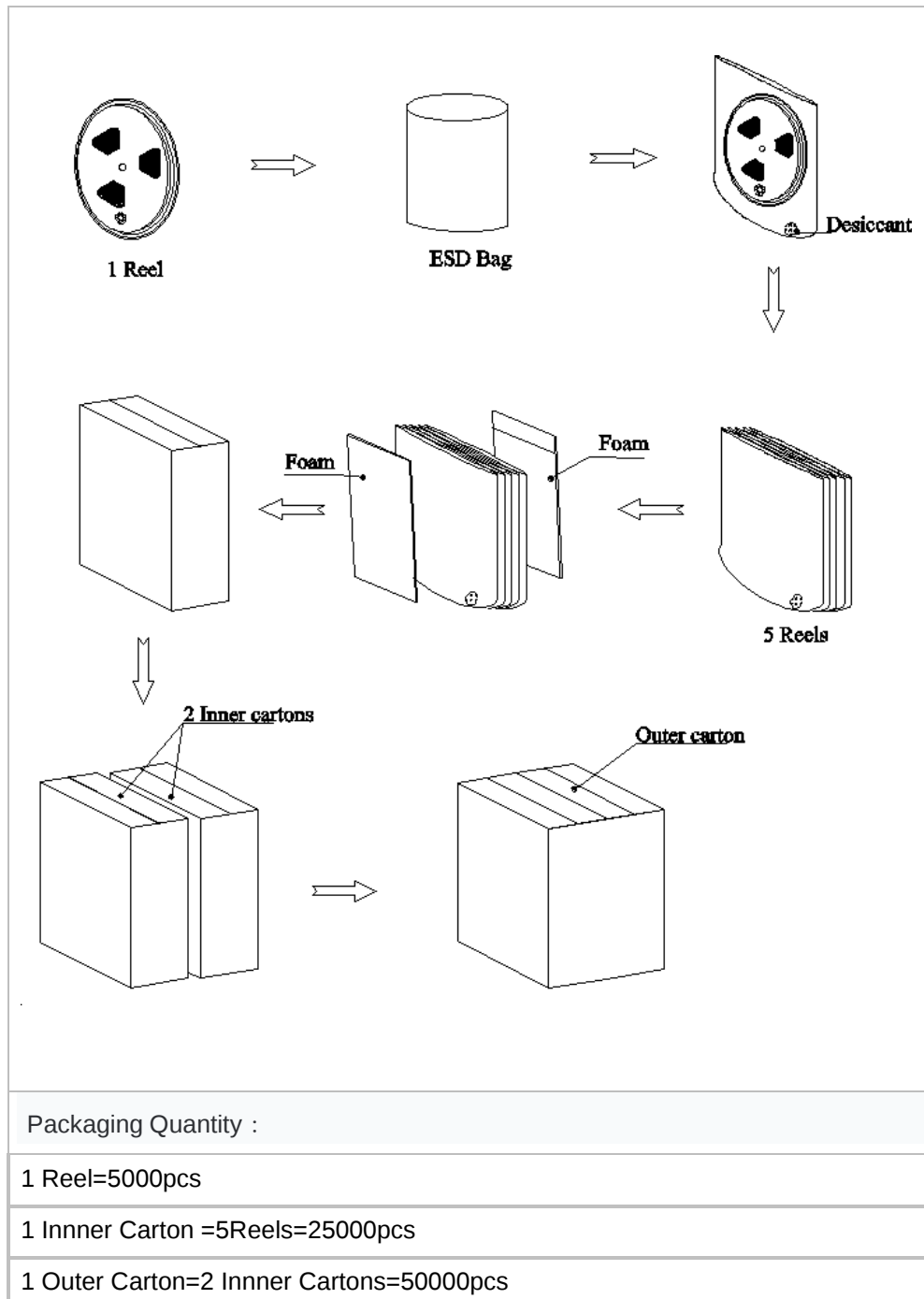
7.3.1 Storage temperature range: $-40 \sim +70^{\circ}\text{C}$, and humidity is less than 75%.

7.3.2 Operating temperature range: $-40 \sim +100^{\circ}\text{C}$.

7.3.3 MSL (moisture sensitivity Level) is Class 1.



8.2 Packaging Information





9. Reliability Test

The samples should be placed in the room with 23+/-2°C, 55+/-10%R.H. for 2 hours at least before final measurement, unless otherwise specified.

Item	Detail	Standard
Simulated Reflow (Without Solder)	Samples for qualification testing require 3 Times 260±5 °C reflow solder profiles. 2 hours of setting time is required between each reflow profile test.	±3 dB
Static Humidity	Precondition at +25°C for 1 hour. Then expose to +85°C with 85% relative humidity for 1000 hours.	±3 dB
Temperature Shock	Each cycle shall consist of 30 minutes at -40°C, 30 minutes at +125°C with 5 minutes transition time. Test duration is for 30 cycles, starting from cold to hot temperature.	±3 dB
ESD Sensitivity	Perform ESD sensitivity threshold measurements for each contact according to MIL-STD-883G, Method 3015.7 for Human Body Model. Identify the ESD threshold levels indicating passage of 3000V Human Body Model.	±3 dB
Random Vibrations	Vibrate randomly along three perpendicular directions for 30 minutes in each direction, 4cycles from 20Hz~2000Hz with a peak acceleration 20g.	±3 dB
Mechanical Shock	Subject samples to half sine shock pulses (3000g±15% for 0.3ms) in each direction, totally 18 shocks.	±3 dB
Operation Life	Subject samples to +125°C for 168 hours under full maximum rated voltage.	±3 dB
Drop Test	The test was repeated in six directions for three times, Dropped from 1.5m height on to a steel surface, total 18 times and inspected for mechanical damage. Note: Sensitivity should vary within +/-3dB from initial sensitivity after test conditions are performed.	±3 dB



Revision History

Revision	Description	Date
A	New Version Released	19/09/20
B	Update Reliability Test Condition	20/05/21

COMPANY PRIVATE

DO NOT REPRODUCE FOR OUTSIDE USE WITHOUT WRITTEN PERMISSION