
 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.	ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant DATE: Mar.29 <sup>th</sup> .2019

## APPROVAL SHEET FOR MICROPHONE

CUSTOMER: \_\_\_\_\_


CHECKER: Wang Tianjiao

APPROVER: Wu zhijiang

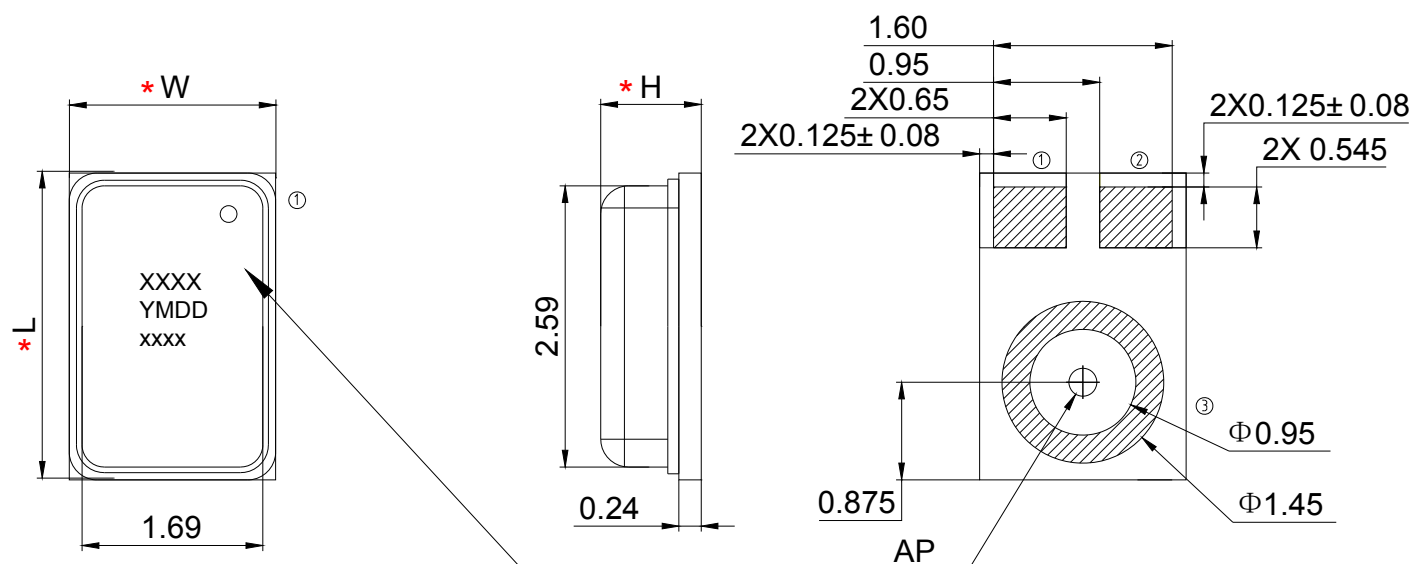
 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.		ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant	DATE: Mar.29 <sup>th</sup> .2019

# CONTENTS

1. Mechanical Layout and Dimensions-----	3
2. Recommended Customer Land Pattern-----	4
3. Product Specifications-----	5
4. Test Setup-----	6
5. Reliability Specifications-----	7
6. Packaging Specifications-----	8
7. Solder Reflow Profile-----	11
8. Specification History-----	12

 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.	ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant DATE: Mar.29 <sup>th</sup> .2019

## 1. Mechanical Layout and Dimensions



XXXX	Identify Mark
YMDD	Indicates year, week, and date separately
XXXX	Indicates LOT NO.

Pin Output	
Pin#	Function
1	Power
2	Output
3	Ground

Item	Dim.	Tol.(+/-)	Units
*Length	2.75	0.100	mm
*Width	1.85	0.100	mm
*Height	0.90	0.100	mm
Acoustic PORT	0.25	0.05	mm

Note:(Tolerance +/-0.10mm unless otherwise specified)

\* Stand for CTF

**AAC**

AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.

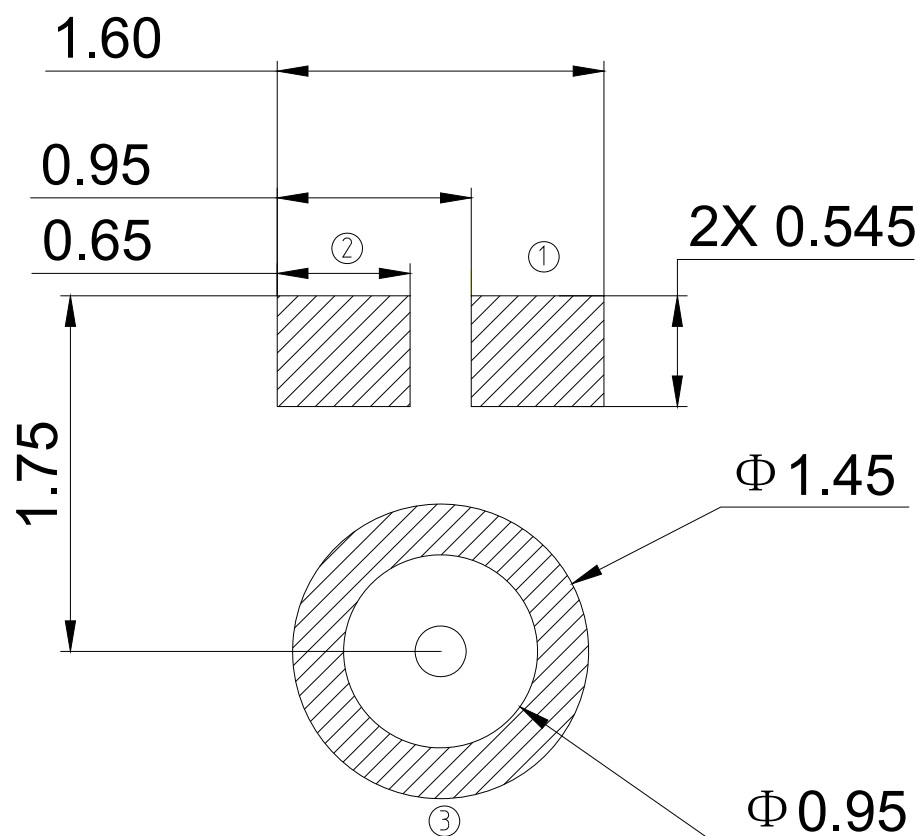
ISSUE: X3

PART No. **SM0103B-RFS381-M02**

Remark: GP compliant

DATE: Mar.29<sup>th</sup>.2019

## 2. Recommended Customer Land Pattern:



Recommended PCB punching hole size: 0.475mm  
(The range hole size: 0.425mm~0.625mm)

**AAC**

AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.

ISSUE: X3

PART No. **SM0103B-RFS381-M02**

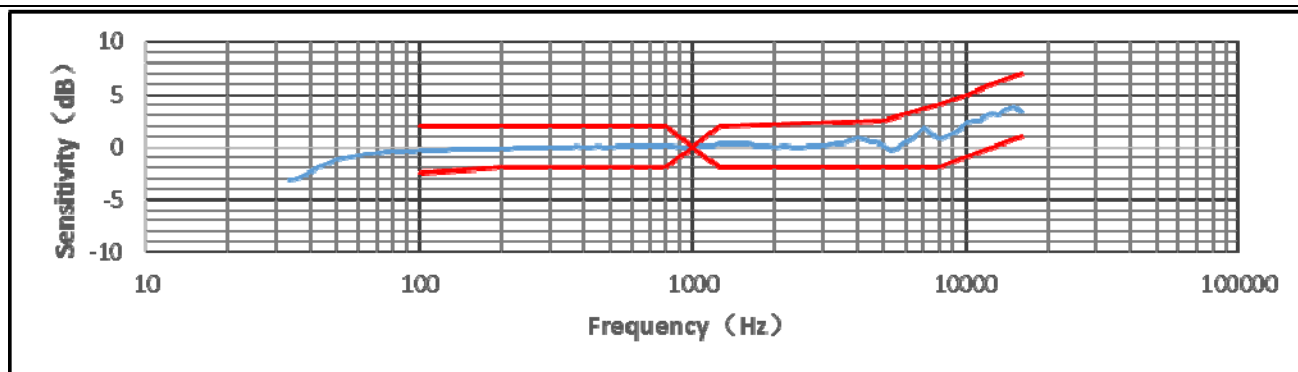
Remark: GP compliant

DATE: Mar.29<sup>th</sup>.2019**3. Product Specifications:**

Test conditions: +25°C, 60-70%R.H


Items	Symbol	Condition	Limits			Unit
			Min.	Typ.	Max.	
Directivity	-	Omni-Directional				
Sensitivity	S	94dB SPL @1kHz	-39	-38	-37	dB
Output Impedance	Z <sub>out</sub>	94dB SPL @1kHz			450	Ω
Supply Voltage	V <sub>DD</sub>		1.6	2.75	3.6	V
Rated Current	I <sub>DD</sub>	V <sub>dd</sub> =2.75V	-	-	200	uA
S/N Ratio	SNR	94dB SPL @1kHz A-weighted	60	63	-	dB
Total Harmonic Distortion	THD	94dB SPL @1kHz	-	0.20	0.50	%
Acoustic Overload Point	AOP	10% THD @1kHz	-	125	-	dB SPL
Power Supply Rejection	PSR	100mVpp Squarewave @217Hz, V <sub>dd</sub> =2.75V, A-weighted	-	-95	-	dBV
Power Supply Rejection Ratio	PSRR	200mVpp Sinewave @1000Hz, V <sub>dd</sub> =2.75V	-	60	-	dB

## Frequency Response Curve

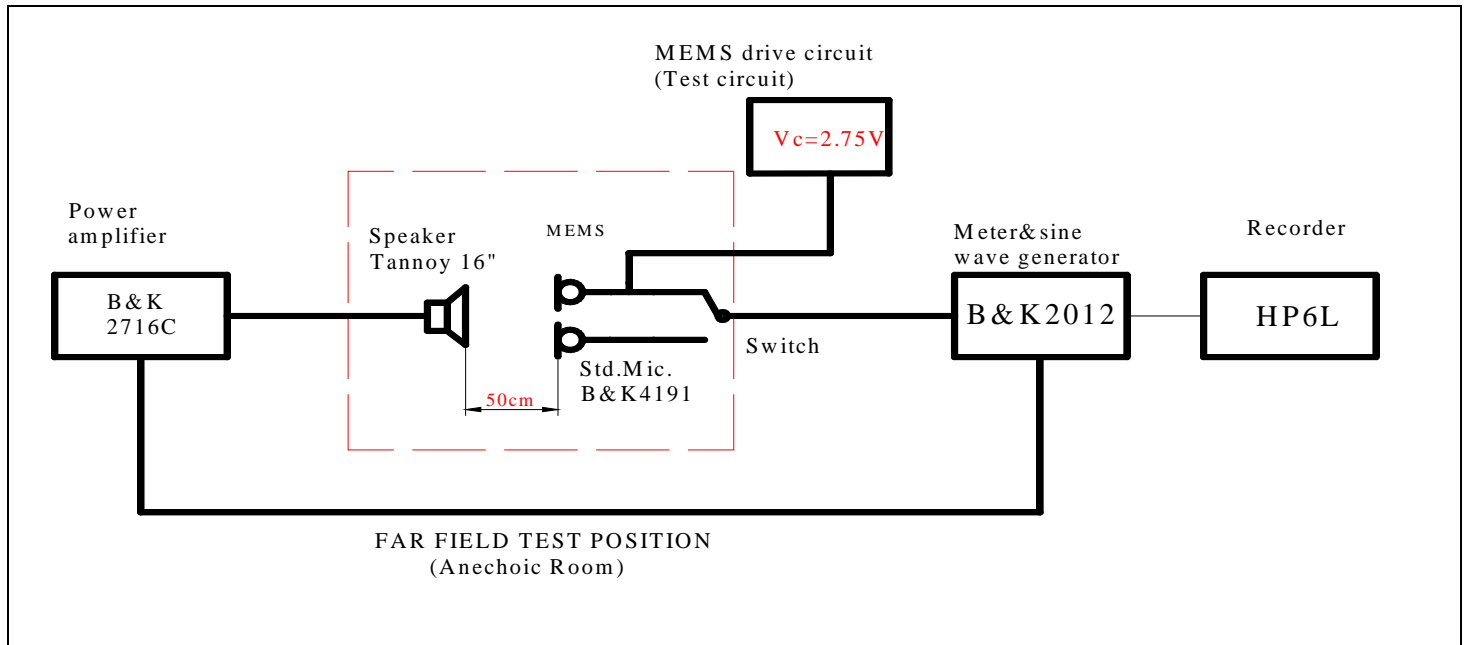



Frequency(Hz)	100	200	800	1000	1250	5000	8000	10000	12500	16000
Upper Limit(dB)	2	2	2	0	2	2.5	4	5	6	7
Lower Limit(dB)	-2.5	-2	-2	0	-2	-2	-2	-1	0	1

Items	Limit			Unit
	Min.	Nom.	Max.	
Operating temperature	-40	+25	+85	°C
Storage temperature	-40	+25	+85	°C

 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.	ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant DATE: Mar.29 <sup>th</sup> .2019

## 4. Test Setup



 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.		ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant	DATE: Mar.29 <sup>th</sup> .2019

## 5. Reliability Specifications

As per customer's requirements. If no customer's requirements available please refer to following tests.

Test item	Detail
Reflow	Microphone is tested to 3 passes through reflow oven, with microphone mounted upside-down under conditions of 260℃ for 30 seconds maximum.
Thermal Shock	Microphone unit must operate when exposed to air-to-air thermal shock 100 cycles From -40℃ to +125℃ with 15 minute soaks. (IEC 60068-2-14)
Mechanical Shock	Microphone must operate after exposure to shock test of 3,000 G (IEC60068-2-27)
Low Temperature	Microphone unit must maintain sensitivity after storage at -40±3℃ for 72 hours. ( IEC60068-2-1)
High Temperature	Microphone unit must maintain sensitivity after storage at +85±3℃ for 72 hours. ( IEC60068-2-2)
Vibration Test	Microphone unit must operate under test condition: 4 cycles, from 20 to 2,000Hz in each direction (x, y, z), 48 minutes, using peak acceleration of 20 G (+20%,-0%). (IEC60068-2-6)
Damp heat	Tested under bias at 55±3℃/95%R.H for 96 hours. ( IEC60068-2-3)
Drop Test	1.5 Meter height onto a concrete surface each time at three directions in state of packing, total 18 times. (IEC60068-2-32)
ESD	HBM: 100pF,1500 ohms, +/-2kV direct contact Power Pin and Output Pin; MM: 100pF, 0 ohms, +/-200V direct contact Power Pin and Output Pin. 3 times each supply, total 6 times

### NOTE

The measurement shall to be done after 2 hours of conditioning at room temperature.

After reliability tests are performed, the sensitivity of the microphones shall not deviate more than ±3dB from its initial value





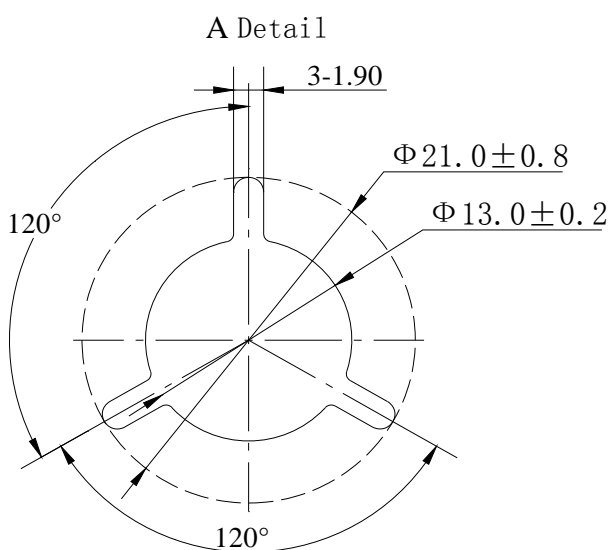
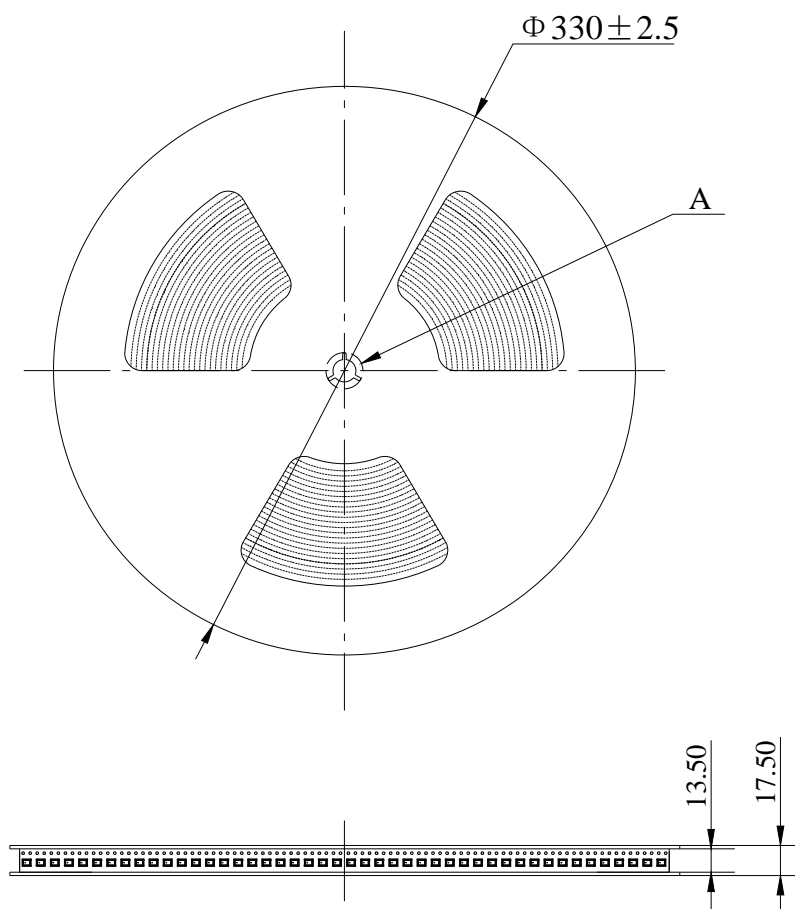
**AAC**

AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.


ISSUE: X3

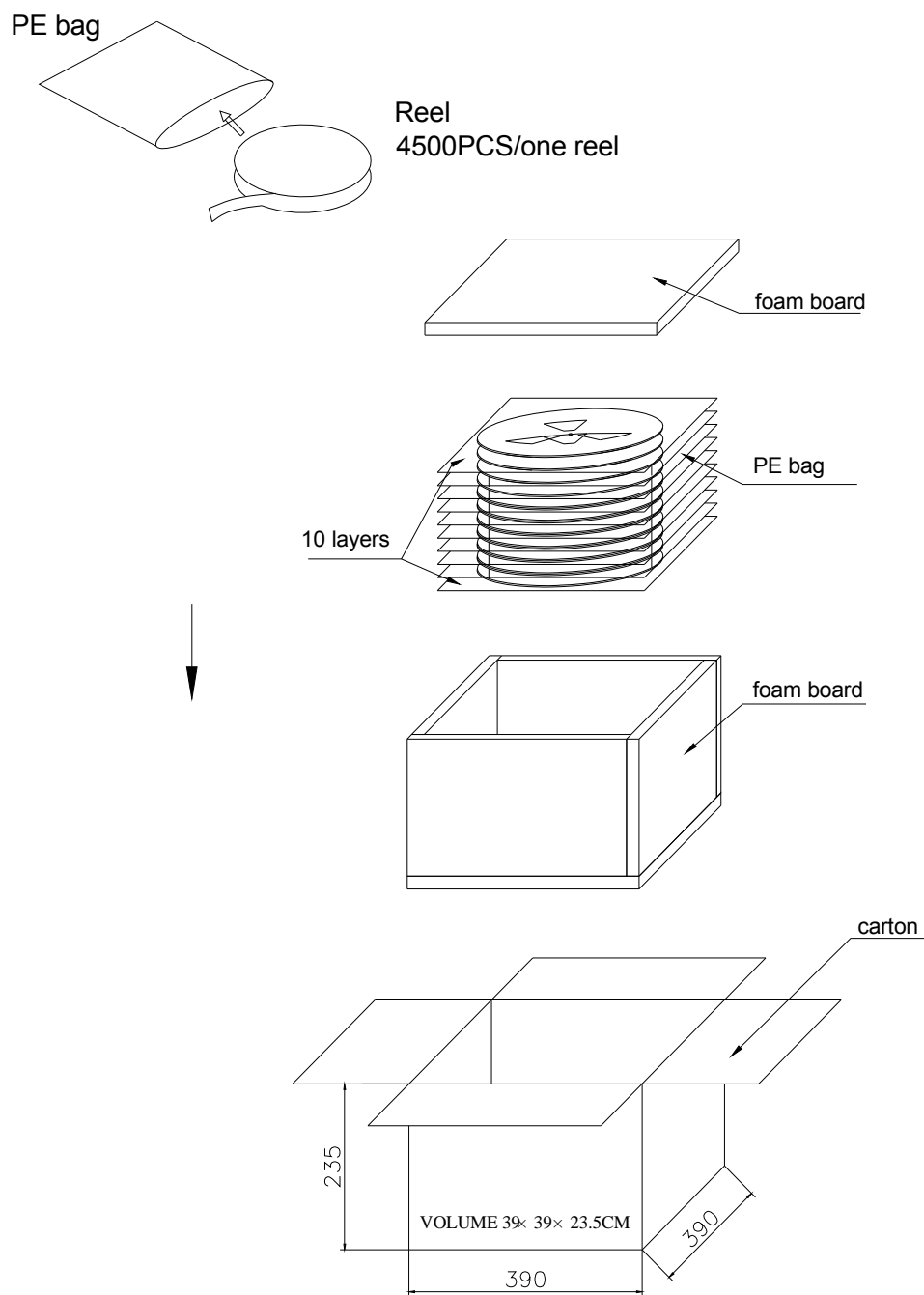
PART No. **SM0103B-RFS381-M02**

Remark: GP compliant

DATE: Mar.29<sup>th</sup>.2019

4,500 PCS PRODUCTS/1 reel

 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.	ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant DATE: Mar.29 <sup>th</sup> .2019



4,5000 PCS PRODUCTS/1 CARTON

**AAC**

AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.

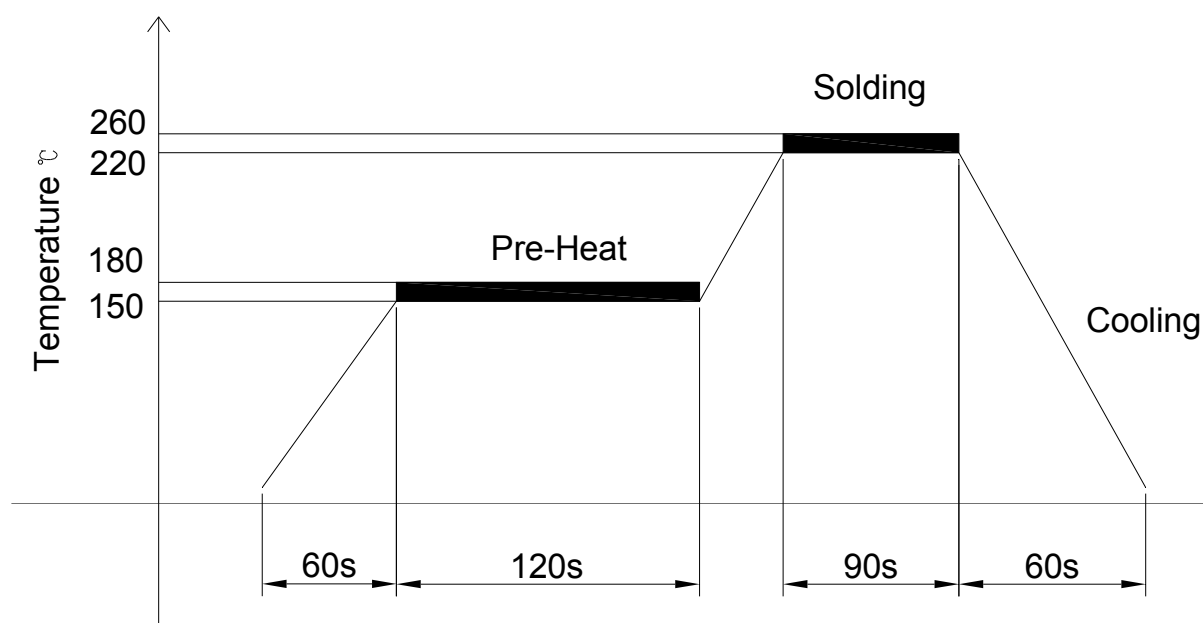
ISSUE: X3

PART No. **SM0103B-RFS381-M02**

Remark: GP compliant

DATE: Mar.29<sup>th</sup>.2019


## 7. Solder Reflow Profile



Stage	Temperature Profile	Time(maximum)
Pre-heat	150-180℃	120sec.
Soldering	Above 220℃	90sec.
Peak	260℃ (Max)	30sec.

### Notes:

1. Pulling vacuum over acoustical hole of the microphone is not allowed, because the device can be damaged by vacuum.
2. Wash the board after reflow process is not allowed, because board washing and cleaning agents can damage the device. Device should not be exposed to ultrasonic processing or cleaning.
3. Recommended number of reflow is no more than 3 times.

 <b>AAC</b> AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.		ISSUE: X3
PART No. <b>SM0103B-RFS381-M02</b>	Remark: GP compliant	DATE: Mar.29 <sup>th</sup> .2019

## 8. Specification History

ISSUE	PREP	CHKD	DETAIL SPEC CHANGES:	DATE
X1	Zeng Peng	Wuzhijiang	Initial Spec Release	Jul. 11 <sup>th</sup> .2018
X2	Zeng Peng	Wuzhijiang	Update marking ,specifications & packing specifications	Oct.23 <sup>th</sup> .2018
X3	WangTianjiao	Wuzhijiang	Update Product Specifications	Mar.29 <sup>th</sup> .2019