

 AAC AAC ACOUSTIC TECHNOLOGIES (SHENZHEN) CO., LTD.		ISSUE: X1
PART No. SM0802L-S421-M02	Remark: GP compliant	DATE: June.29 th . 2018

APPROVAL SHEET FOR MICROPHONE

CUSTOMER: _____

CHECKER: Chen Zhiyuan

APPROVER: Wu Zhijiang

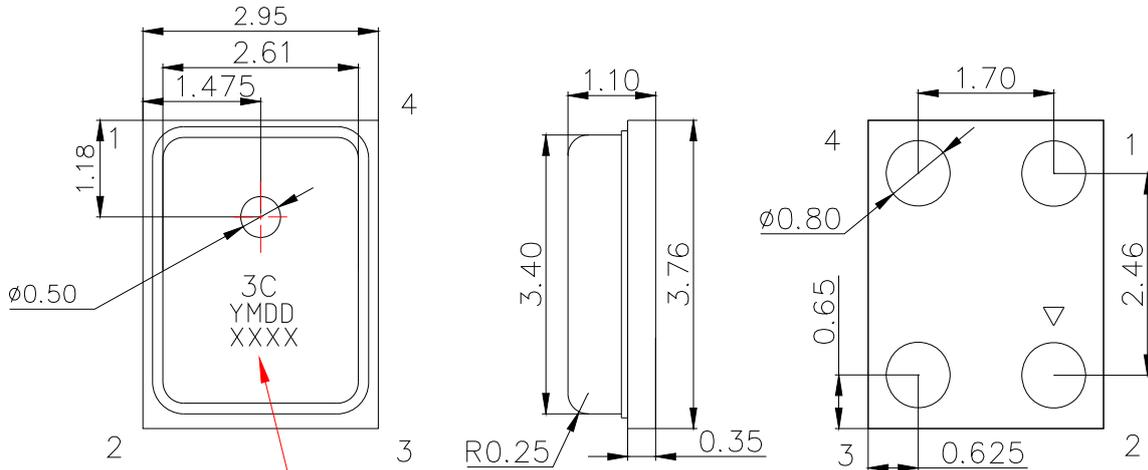
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1. Mechanical Layout and Dimensions



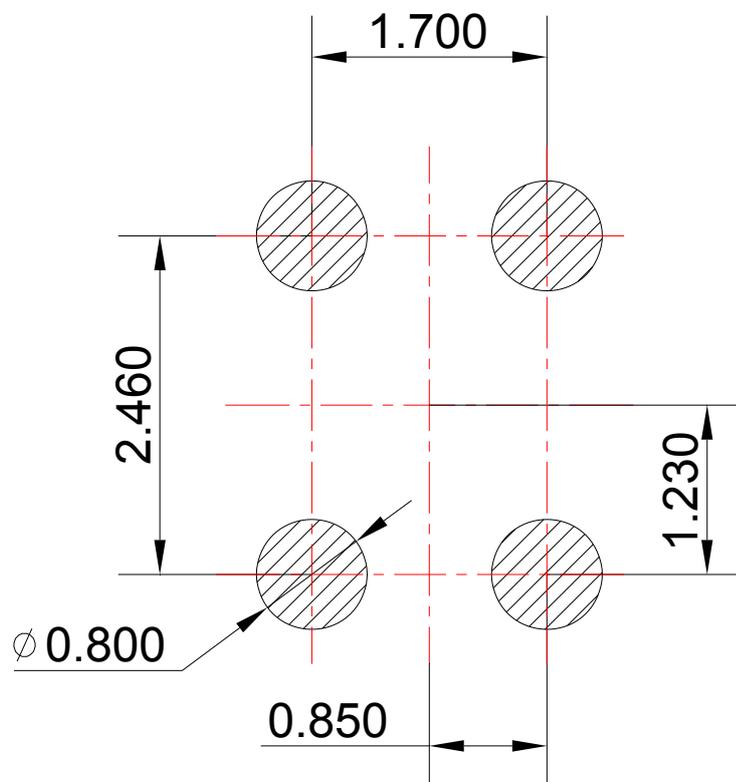
Date code	
Y	Year 1 Number, 0~9 stand for 2010~2019
M	Month 1 Number, 1~9 A B C
DD	Day 2 Number, 1~31

Pin Output	
Pin#	Function
1	Output
2	Ground
3	Ground
4	Power

Item	Dim.	Tol.(+/-)	Units
Height	1.10	0.10	mm
Length	3.76	0.10	mm
Width	2.95	0.10	mm
Port Hole	0.50	0.10	mm

Note:(Tolerance +/-0.15mm unless otherwise specified)

2. Recommended Customer Land Pattern:



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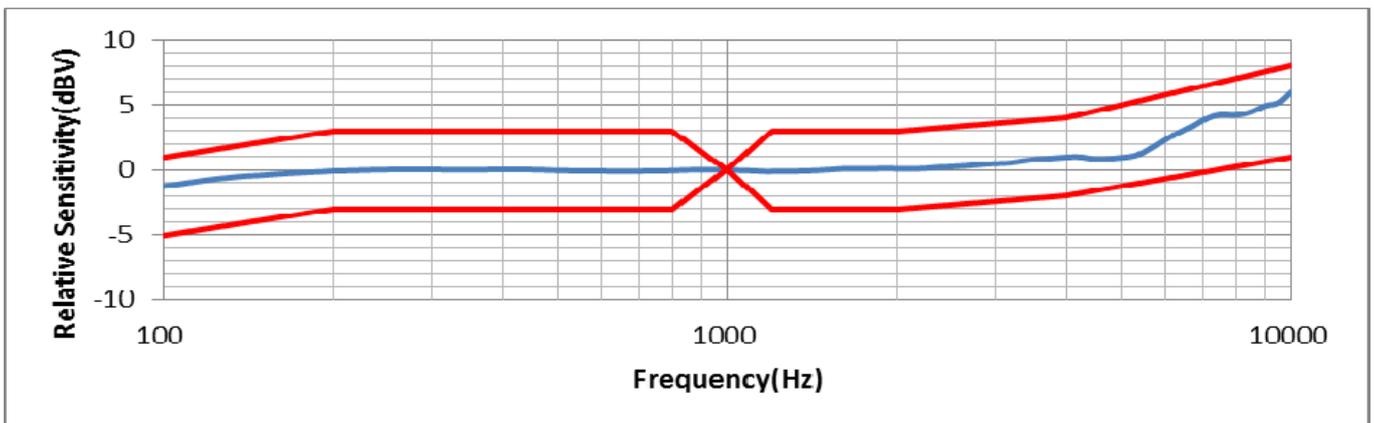
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DATE: June.29th. 2018**3. Product Specifications:**

Test conditions: +25°C, 60-70%R.H

Items	Symbol	Condition	Limits			Unit
			Min.	Nom.	Max.	
Directivity		Omni-Directional				
Sensitivity	S	94dB SPL@1kHz, Vdd=2.2V	-43	-42	-41	dB
Output Impedance	Z _{out}	94dB SPL@1kHz, Vdd=2.2V			400	Ω
Supply Voltage	Vdd		1.6	2.2	3.6	V
Rated Current		@1kHz, Pin=1Pa, Vdd =2.2V		60		μA
S/N Ratio	SNR	94dB SPL@1kHz A-Weighted		57		dB
Total Harmonic Distortion	THD	94dB SPL@1kHz S=Typ, Rload>2Kohm		0.10	0.25	%
Acoustic Overload Point	AOP	10% THD@1kHz S=Typ, Vdd=2.2V		130		dB SPL
Power Supply Rejection	PSR	100mV Vpp Squarewave @217Hz, Vdd=2.2V, A-Weighted		-93		dBV
Power Supply Rejection Ratio	PSRR	200mV Vpp Squarewave @217Hz, Vdd=2.2V		78		dB
Decreasing Voltage Characteristic	ΔS	Change in sensitivity from 3.6V to 1.8V	±0.25			dB

Frequency Response Curve

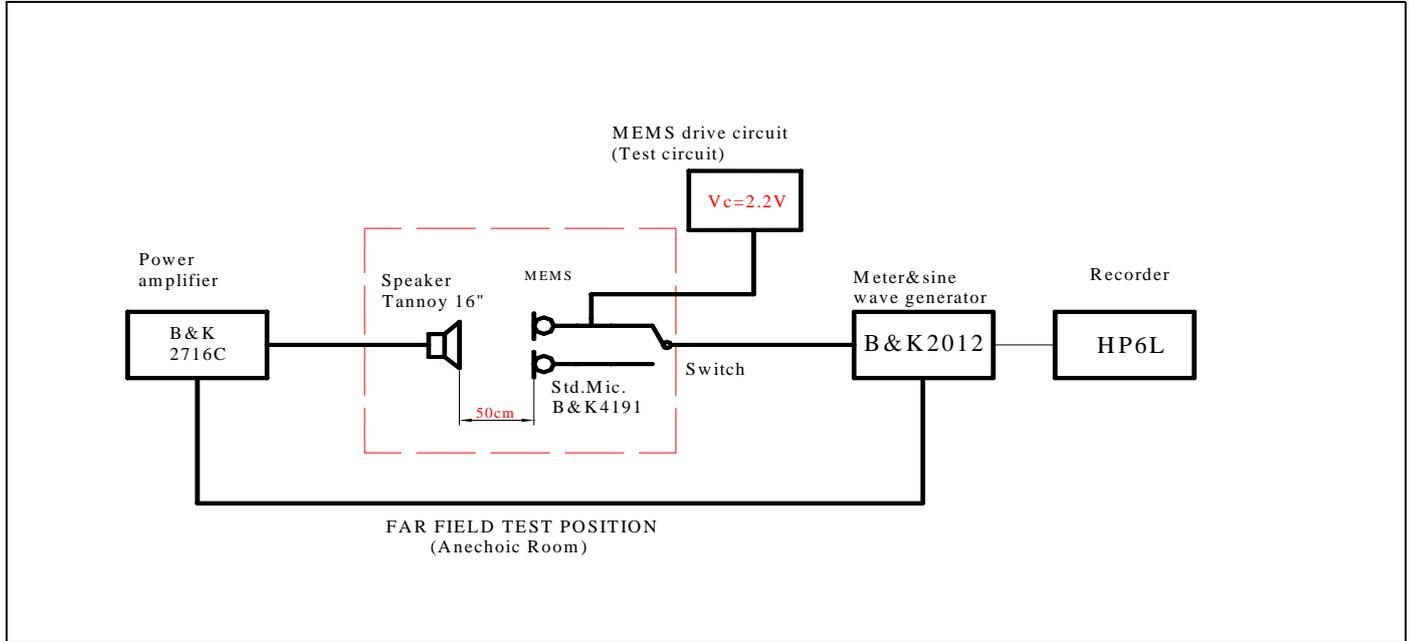


Frequency(Hz)	100	200	800	1000	1200	2000	2500	4000	10000
Upper Limit(dB)	1	3	3	0	3	3	3	3	8
Lower Limit(dB)	-5	-3	-3	0	-3	-3	-3	-3	1

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



4. Test Setup



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5. Reliability Specifications

Per customer's requirements, if no customer's requirements available please refer to following tests.

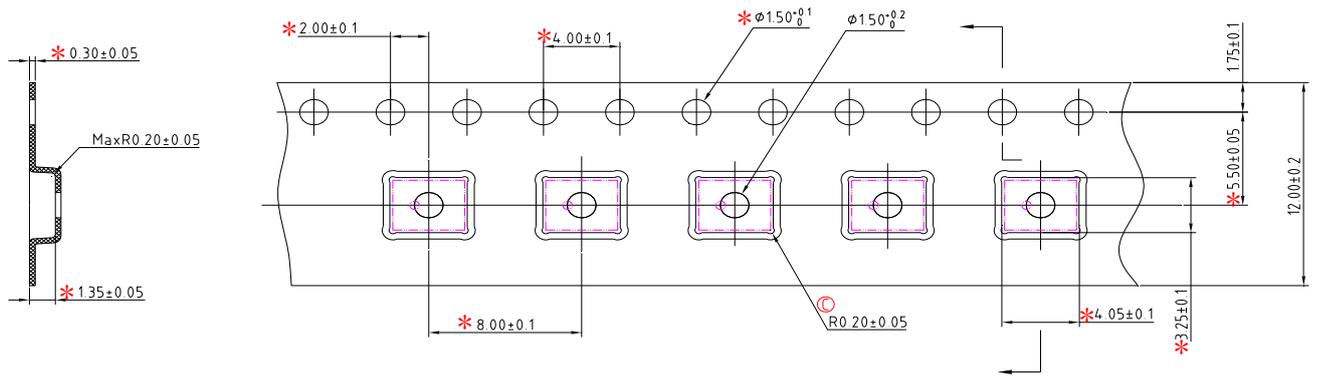
Test item	Detail	Standard
Reflow	Microphone is tested to 3 passes through reflow oven, with microphone mounted upside-down under conditions of 260°C for 30 seconds maximum.	/
Thermal Shock	Microphone unit must operate when exposed to air-to-air thermal shock 100 cycles From -40°C to +125°C with 15 minute soaks.	(IEC60068-2-14)
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°C for 72 hours.	(IEC60068-2-1)
High Temperature	Microphone unit must maintain sensitivity after storage at +85±3°C 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)	(IEC60068-2-6)
Damp heat	Tested under bias at 55±3°C/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.	(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. 5 times each supply, total 10 times	(IEC61000-4-2) (MIL883E,Method30 15.7)

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



6. Packaging Specifications



Part Number	Reel Diameter	Qty per Reel
SM0802L-S421-M02	13 "	4500



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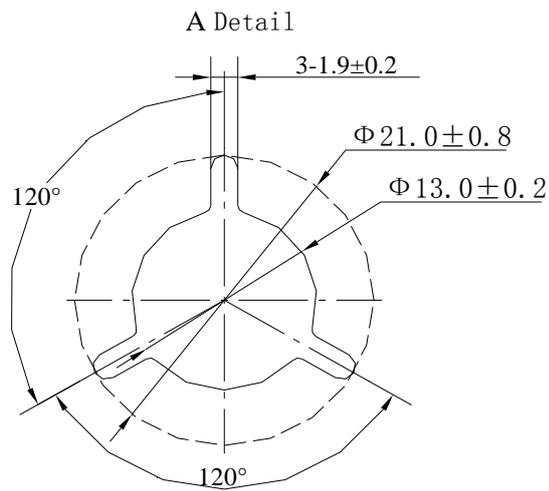
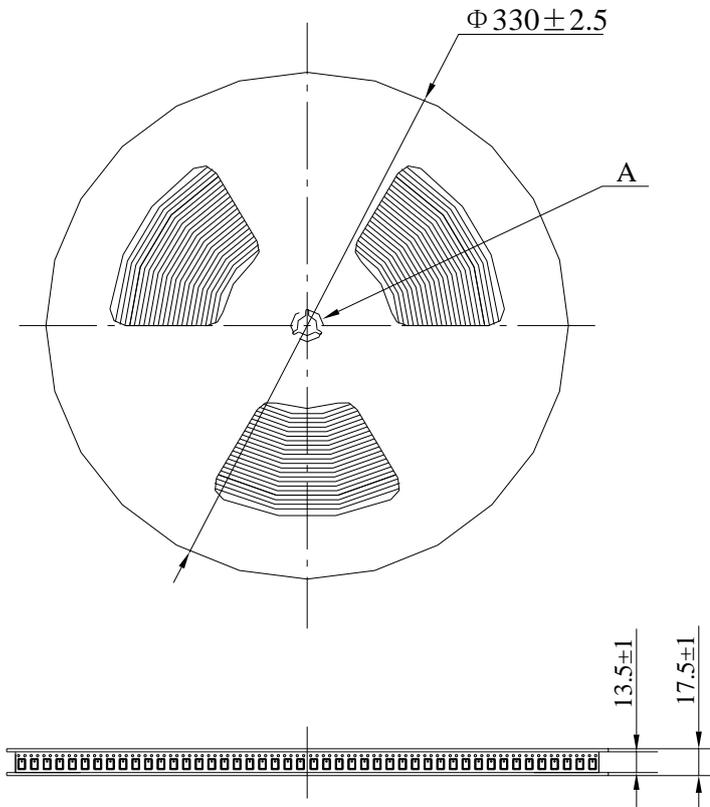
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4,500 PCS PRODUCTS/1 reel



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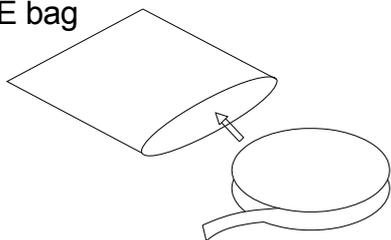
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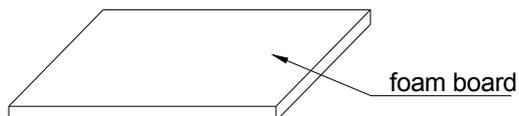
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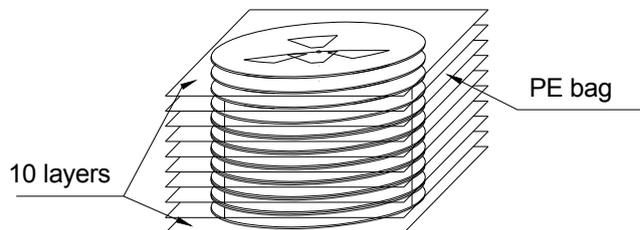
PE bag



Reel
4,500PCS/one reel

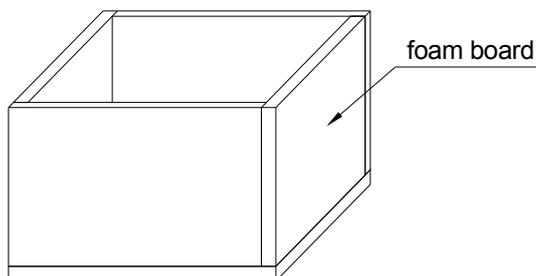


foam board

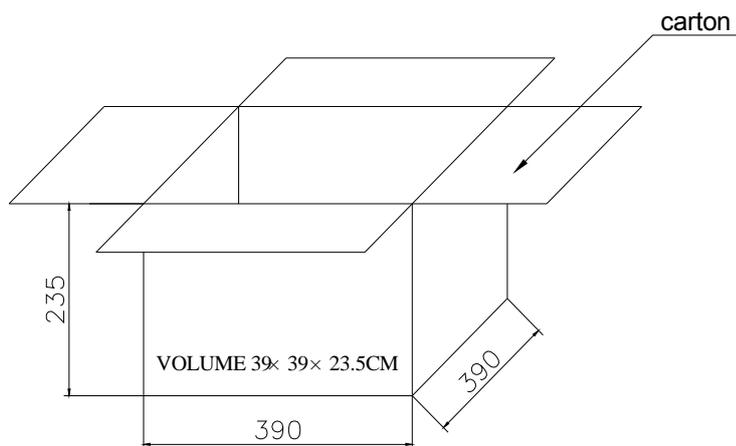


10 layers

PE bag



foam board



carton

235

VOLUME 39× 39× 23.5CM

390

390

45,000 PCS PRODUCTS/1 CARTON

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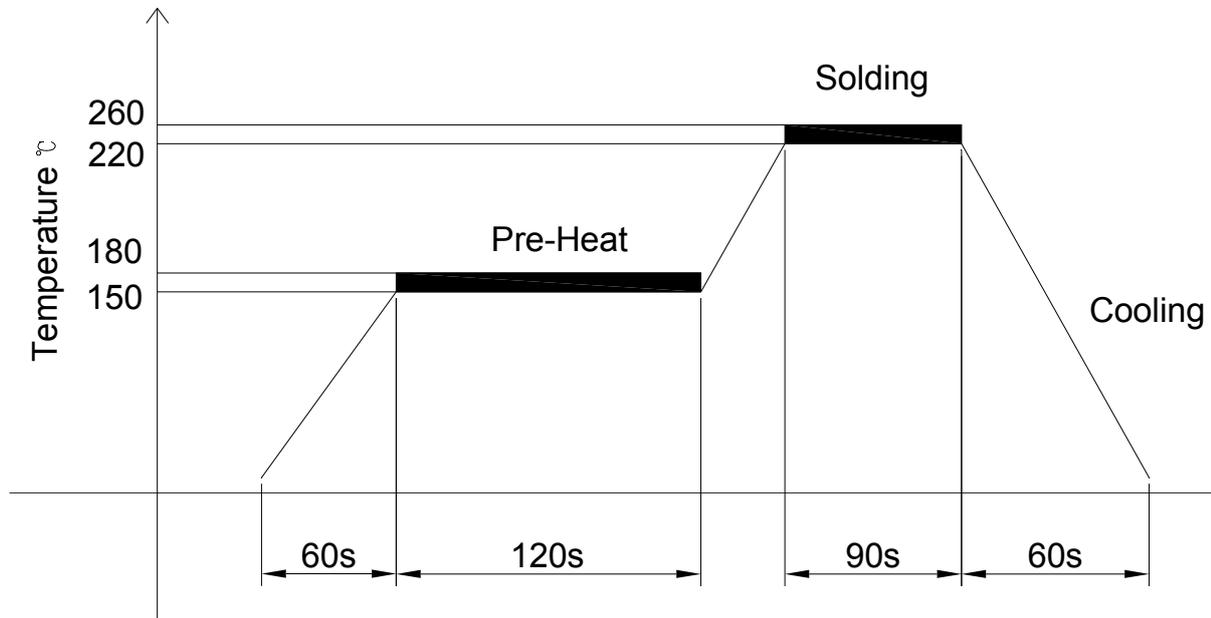
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7. Solder Reflow Profile



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

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8. Specification History

ISSUE	PREP	CHKD	DETAIL SPEC CHANGES:	DATE
X1	Chen Zhiyuan	Wu Zhijiang	Initial Spec Release	June.29 th .2018