

規格承認書

PECIFICATION FOR APPROVAL

客戶
CUSTOMER : 立創
項目
ITEM : 前进声硅微麦克风 (MEMS MIC)
型號
TYPE : GMA3729H11-F42
描述
DESCRIPTION : L3.76 x W2.95xH1.1 mm 1033 -42 dB S/N: ≥58 dBA
客戶料號
CUSTOMER NO. :
規格書號
SPECIFICATION NO.:
版本
EDITION NO. : V1.0
日期
DATE : 2020-1-9

客戶承認

CUSTOMER CONFIRM AND SIGN

檢查 TESTED BY	審核 CHECKED BY	承認 APPROVED BY

東莞市贏海電子有限公司

DONGUAN INGHAI ELECTRONICS CO.,LTD

製作 ISSUED BY	審查 CHECKED BY	確認 APPROVED BY
周明	刘承成	

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A. Introduction

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

B. B. Temperature Range

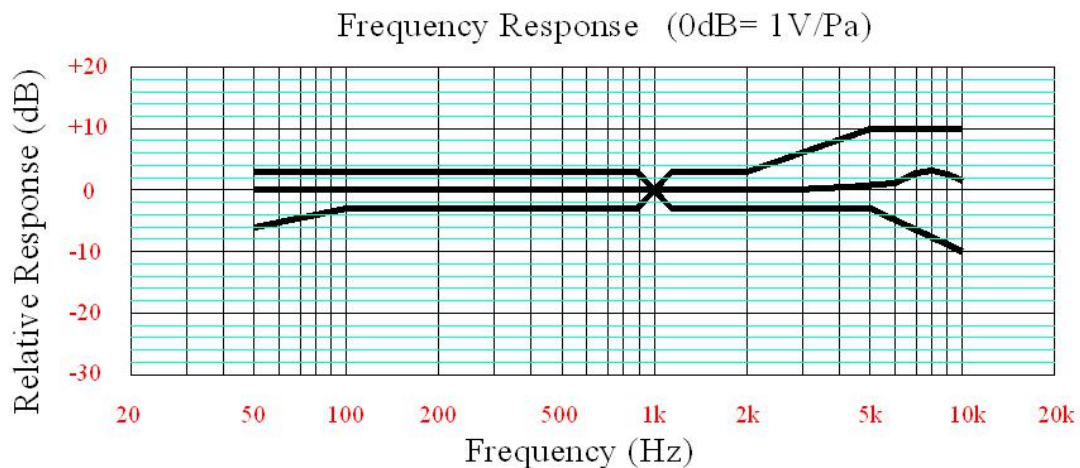
1. Operating Temperature Range: -40°C to +100°C

2. Storage Temperature Range: -40°C to +125°C

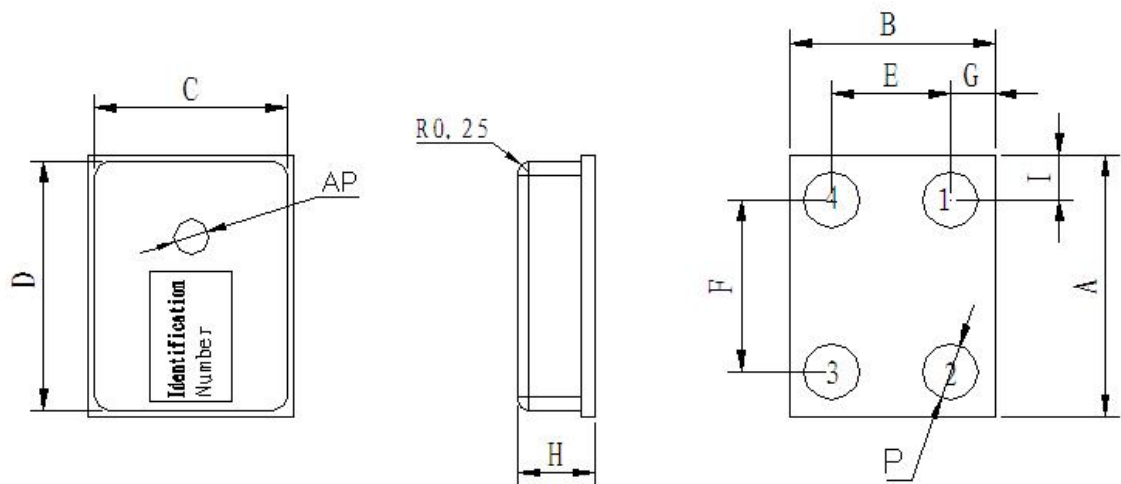
C. Technical Specification (test conditions: +25±2°C, 45%~65%R.H)

Items		Min.	Nom.	Max.	Unit
1	Directivity	Omni Directional			
2	Operating Voltage	1.5	--	3.3	V
3	Sensitivity (F=1KHz)	-45	-42	-39	dB
4	Current consumption	--	--	200	uA
5	Output impedance	--	--	100	Ω
6	Signal to noise ratio (F=1KHz)	--	58	--	dB
7	Maximum input sound level	120			dB SPL
8	Total Harmonic Distortion @ 104dB	--	--	1	%
9	Total Harmonic Distortion @ 114dB	--	--	10	%
10	Sensitivity variation over operating voltage range (1.5 to 3.3 V)	-0.5	0	0.5	dB

D. Frequency Response Curve :



E. Mechanical Layout and Dimensions



Item	Symbol	Dim.	Tol.	Units
Length	A	3.76	± 0.10	mm
Width	B	2.95	± 0.10	mm
Height	H	1.10	± 0.10	mm
Metal Cap Width	C	2.76	± 0.10	mm
Metal Cap Length	D	3.57	± 0.10	mm
Terminal pad pitch1	E	1.70	± 0.10	mm
Terminal pad pitch2	F	2.46	± 0.10	mm
Pad to Unit Edge1	G	0.65	± 0.10	mm
Pad to Unit Edge2	I	0.65	± 0.10	mm
Terminal pad Open	P	0.80	± 0.10	mm
Acoustic port hole	AP	0.50	± 0.10	mm

F. Pin Output

Pin#	Function
1	Output
2	(CAL)Ground
3	Ground
4	Input Voltage

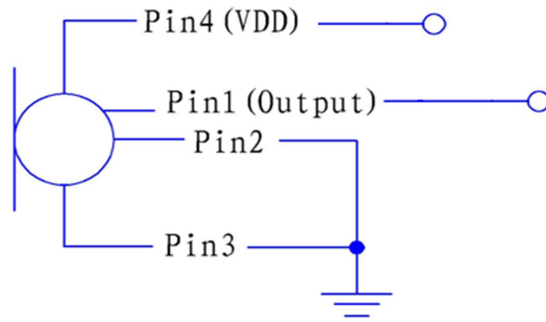
Notes:

PIN1: The output terminal, where the analog signal equivalent to applied pressure is available.

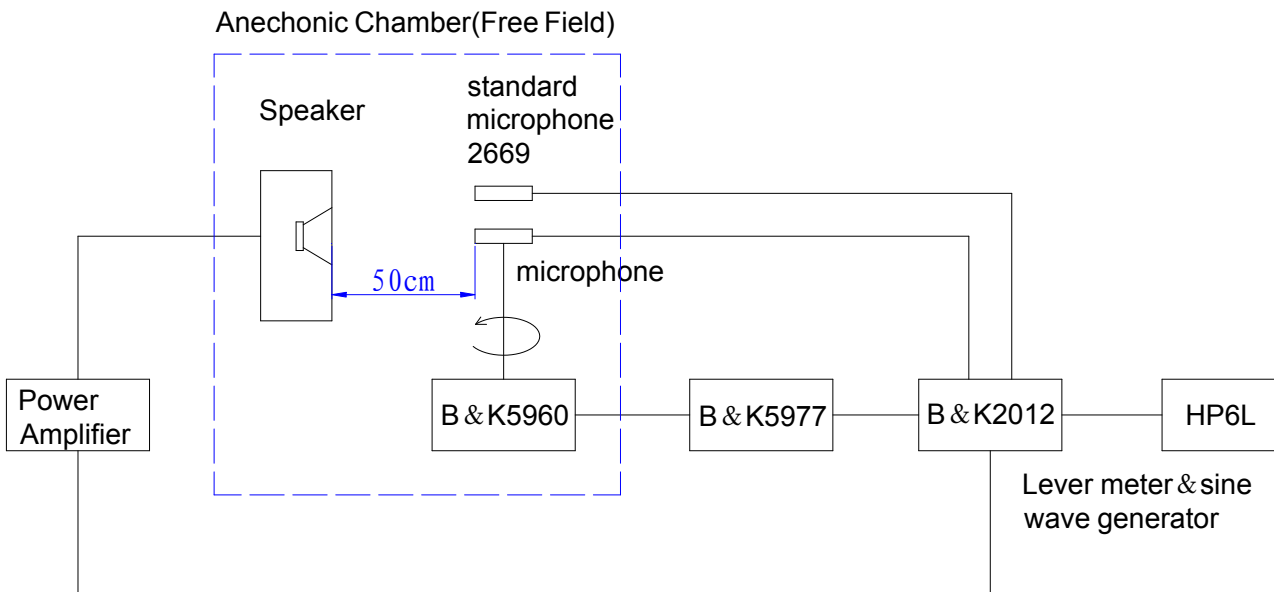
PIN2, PIN3: The terminal where the supply negative is connected to MEMS microphone.

PIN4: Input Voltage.

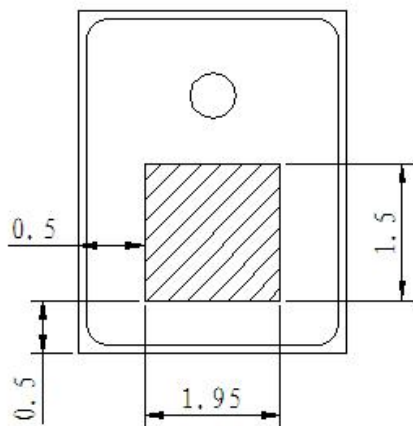
G . Application Circuit:



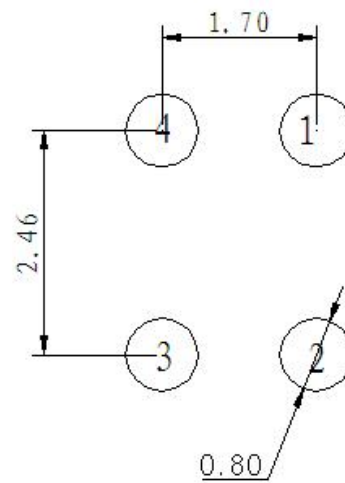
H. Test Setup (Sensitivity test in Anechoic Room)



I. Pickup tool nick location & PCB Solder pad layout



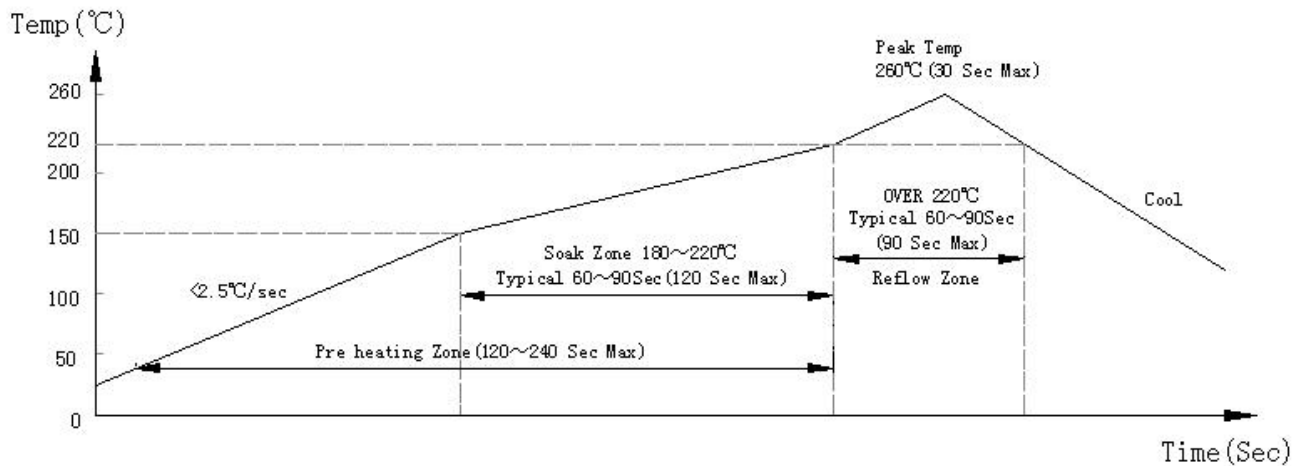
Recommended area for vacuum nozzle pickup location



Recommended solder pad layout

N. Recommended reflow process condition

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



Number of Reflows-Recommend not more than 3 cycles.

The SMD process should use no clean solder paste, cleaning is not allowed because washing will damage the pressure sensor sensing elements.

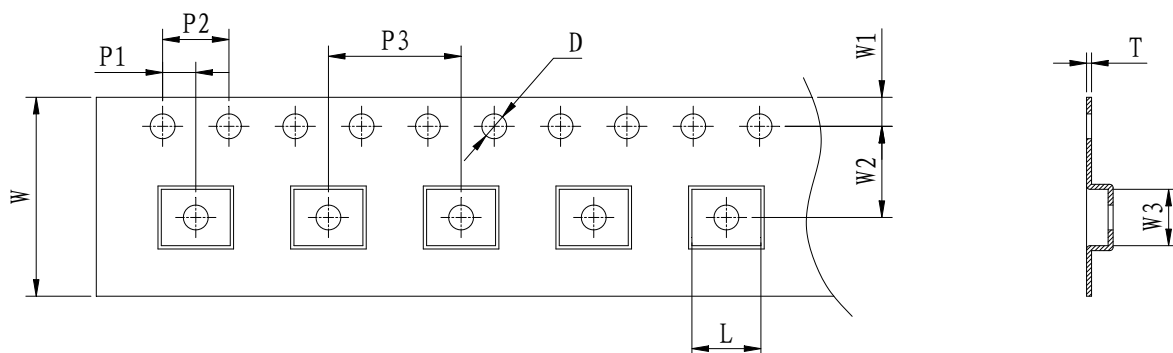
Do not boards wash after the reflow process. Board washing and cleaning can damage the device

Don't expose ultrasonic processing and cleaning.

Don't expose plasma cleaning process.

J. Packing

1 Tape Specification

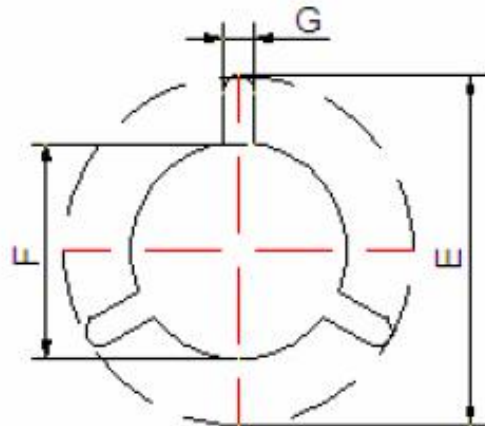
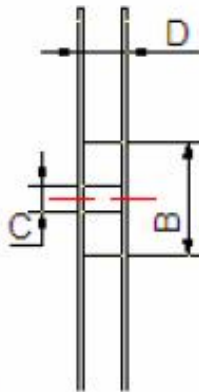
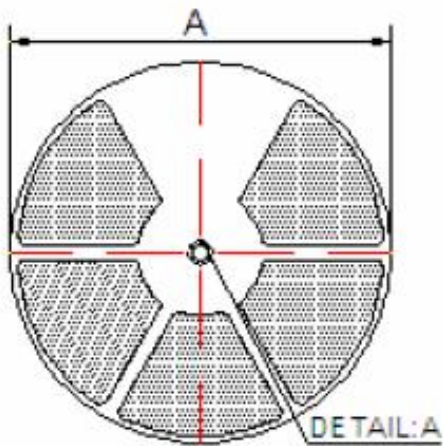


Symbol	Dimension		
	Minimum	Nominal	Maximum
D	1.5	1.5	1.6
P1	1.9	2.0	2.1
P2	3.9	4.0	4.1
P3	7.9	8.0	8.1
L	4.06	4.16	4.26
W	11.7	12	12.3
W1	1.65	1.75	1.85
W2	5.4	5.5	5.6
W3	3.30	3.40	3.50
T	0.25	0.3	0.35

Notes: All dimensions are in millimeter(mm).

Tolerance \pm 0.1mm unless otherwise specified.

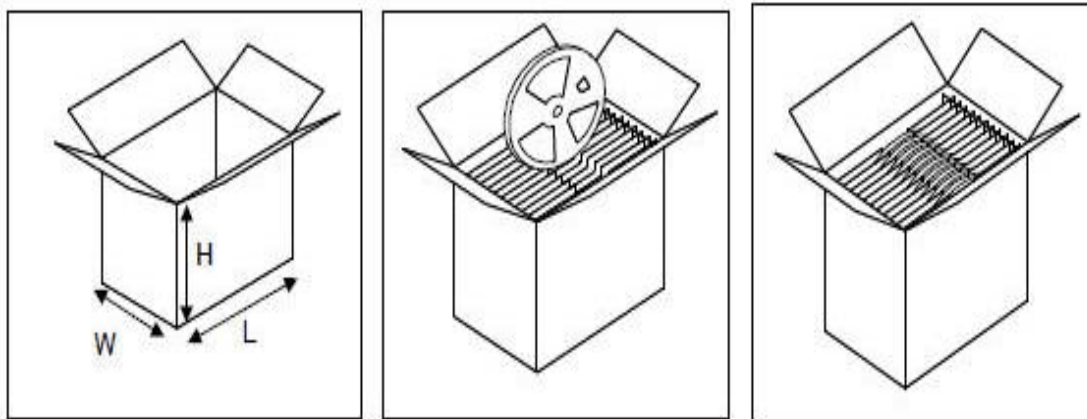
Real Specification



13" Reel

Description	Symbol	Dimension(mm)		
		Minimum	Nominal	Maximum
Reel Diameter	A	--	330	--
Hub Diameter	B	58	60	62
Hub Hole Diameter	C	12.8	13	13.5
Reel Width(Measured at hub)	D	--	16	16.4
Arbor Hole	E	20.2	--	--
Arbor Hw in mm Diameter	F	12.8	13.0	13.5
Arbor Slot Width	G	1.5	--	--

Packing Information



Tape and 13" Reel

Qty/reel (PCS)	Weigh/reel (kg)	Reel/carton (nos)	Qty/carton (nos)	Weight full Load(kg)	Dimension carton Box(L×W×H)mm	Storage (Temp)
4800	0.7	10	48000	~10.00	419×276×381	-10°C~50°C

K. Reliability Test

<p>1. Low Temperature storage:</p> <p>-40±3°C environment for 96 hours.</p>
<p>2. High Temperature storage:</p> <p>+85±3°C environment for 96 hours.</p>
<p>3. Static humidity:</p> <p>Keep in +55±2°C, 93±2% R.H. environment lasting for 96 hours.</p>
<p>4. Temperature shock:</p> <p>Each cycle shall consist of 120 minutes at -40°C, +85°C with 120 minutes transition time, test duration is for 32 cycles, starting from cold to hot temperature.</p>
<p>5. Vibrations:</p> <p>From 60 to 500 Hz in X,Y and Z direction with peak acceleration of 5g ,lasting 2 hours.</p>
<p>6. Drop test:</p> <p>Dropped naturally from the 1.5m height onto a 20mm thickness marble floor surface,3 pulses, totally 9 drops.</p>
<p>7. Electrostatic Discharge:</p> <p>3 discharges at ±2KV direct contact to I/O pins and 3 discharges at ±8KV direct contact to lid when unit is grounded.</p>
<p>8. Reflow:</p> <p>5 reflow cycles with peak temperature of +260°C.</p>

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