

SKM38A3729B-C is a high quality, low cost, low power analog output, back forward pick-up tone omnidirectional MEMS microphone. The SKM38A3729B-C consists of a MEMS microphone element and a preamplifier. SKM38A3729B-C has a high SNR and flat broadband frequency response, so that it has a high definition of natural voice. As built in filter, SKM38A3729B-C adopts LGA metal case surface mount package. This makes reflow soldering compatibility less sensitive. SKM38A3729B-C is halogen free product.

Feature:

- 3.76mm x 2.95mm x 1.1mm package specifications
- Signal-to-noise ratio 62dBA
- Sensitivity is -38dBV
- Low consumption current <180 μ A

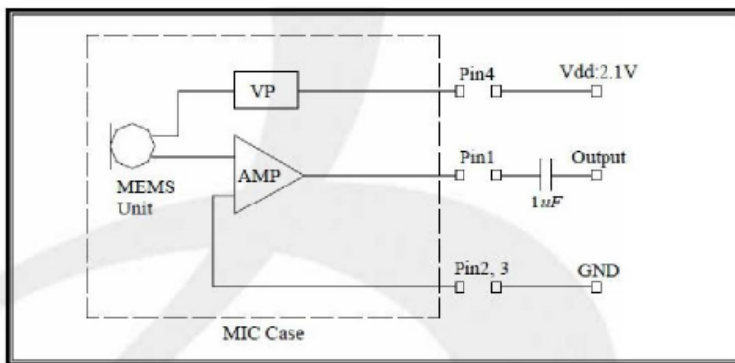
Application:

- Mobile phone
- Handheld computer
- Digital video camera
- Portable media equipment with audio input

Typical application:

The SKM38A3729B-C output can be connected to the codec microphone input or a high input impedance gain stage. The output of the microphone must be connected to the capacitance (obstructing DC).

Measurement circuit



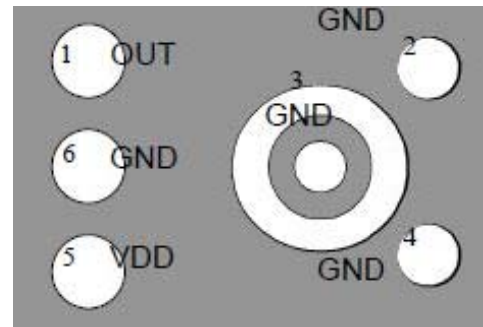
Absolute maximum rating:

- The power supply voltage: - 0.5V to +4V
- The sound pressure level: 160dB
- Mechanical shock: 10000g
- Shake: Follow MIL-STD-883 Method
- The range of temperature: - 40 $^{\circ}$ C to +125 $^{\circ}$ C

Note: the above stresses that "absolute maximum ratings" may cause permanent damage to the device. The sound pressure level and operation on these or any other equipment are not absolute

Pin configuration and description

Button view

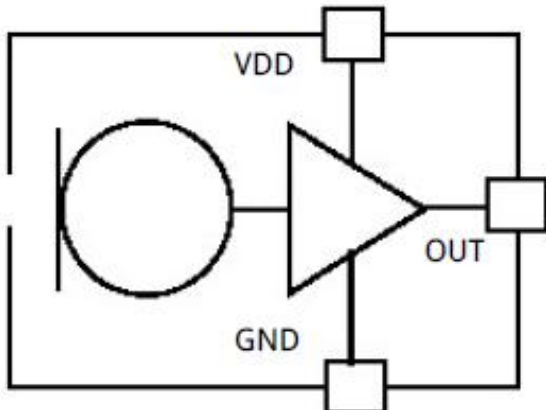


PIN	Symbol	Description
1	OUT	Analog output signal
2,3,4,6	GND	GND
5	VDD	VDD

ESD sensitivity



This integrated circuit can be passed through ESD, It is suggested that all integrated circuits should take appropriate precautions. Erroneous observation or improper handling of installation procedures can cause damage. The range of ESD damage can be reduced from subtle performance to equipment failure.

Schematic diagram :

Characteristic (TA =+ 25°C, VDD = +1.8V, Unless otherwise stated)

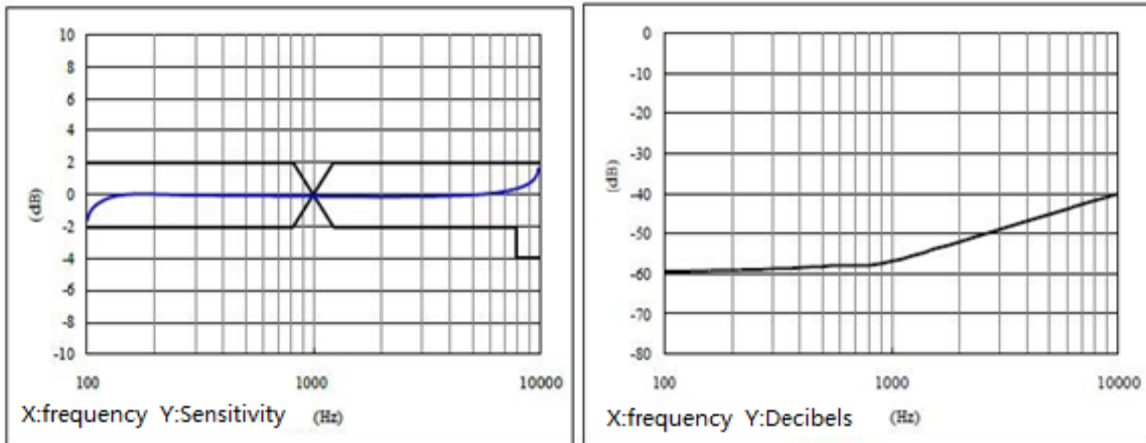
Parameter	Symbol	Test condition	Min	TYP	Max	Unit
Directivity				Omnibear -ing		
Power voltage	V _{DD}		1.5		3.6	V
Power current	I _{DD}		80	120	180	μA
Sensitivity (accurate to ± 1dB)		1kHz,94dB SPL	-41	-38	-35	dBV
Signal to noise ratio	SNR			62		dB
Equivalent output noise	EIN			36		dBA SPL
Total harmonic distortion	THD	105dB SPL			3	%
Sound source rejection ratio	PSRR	217Hz,100mV V _{p-p} ,square wave on V _{DD}		-55		dB
Maximum output sound				120		dB SPL
Output impedance	Z _{out}			150	300	Ω
Output DC offset				0.75		V
Output current limit				90		μA
Polarity				The same		

Reliability index

According customer requirements. Microphone sensitivity can be change to ± 1dB or ± 3db.

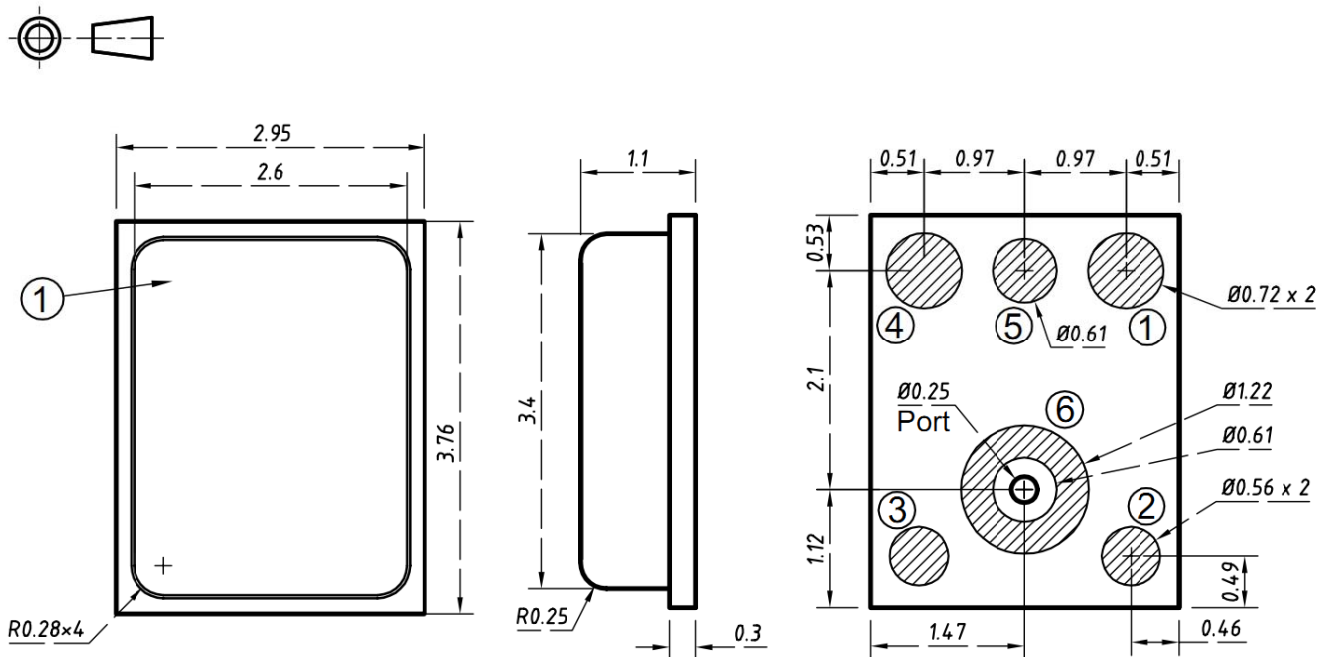
Test item	Description
THT	+65°C/85% humidity, 500h
Temperature cycle	-40°C/+125°C, 100 cycles.
High temperature storage	+150°C, 500h.
Cryogenic storage	-40°C, 500h.
Electrostatic discharge	3 discharges at +/-8kV direct contact to the lid when unit is grounded (IEC 61000-4-2) and 3 discharges at +/-2kV direct contact to the I/O pins (MIL 883E, Method 3015.7).

Frequency Response :



For 1000 Hz frequency response

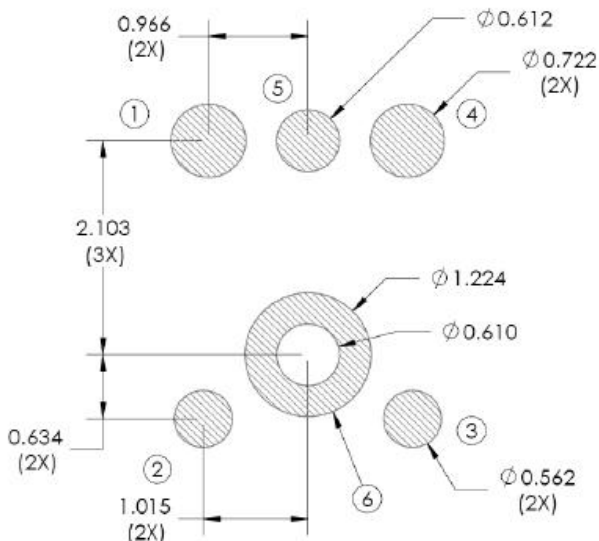
Dimension parameter



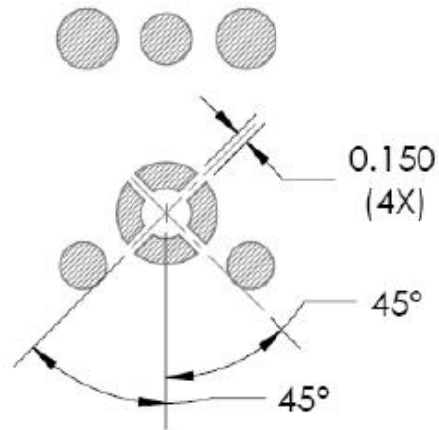
Items	Size	Tolerance	Unit
Length (L)	3.760	±0.100	mm
Width (W)	2.950	±0.100	mm
Height (H)	1.100	±0.100	mm
Acoustic port (AP)	Ø0.25	±0.076	mm

Recommending customer layout patterns

Attention: Please note that solder paste is NOT allowed to be placed on the printed circuit board.

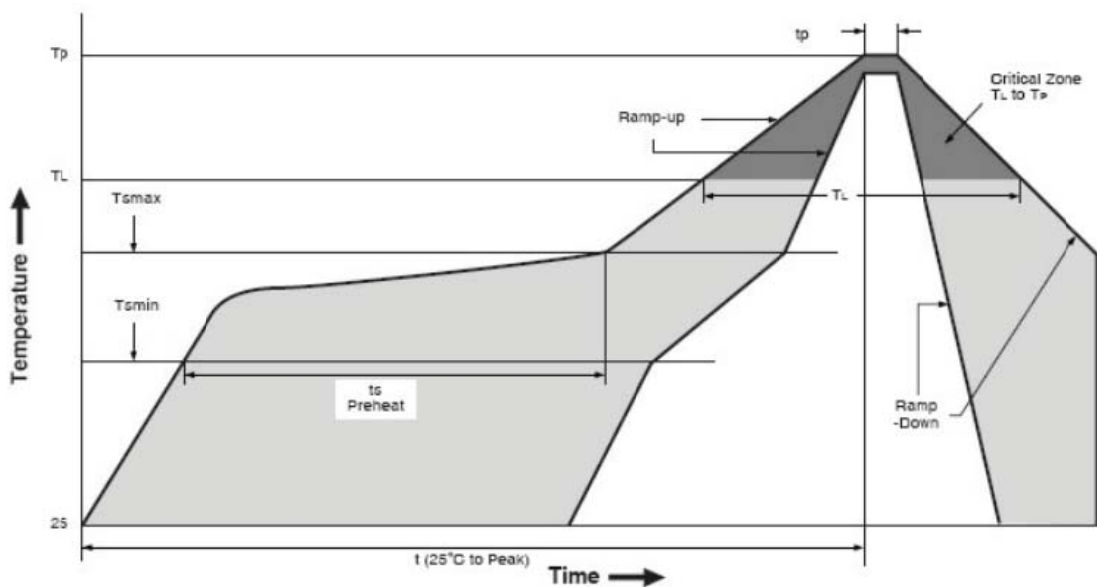


PCB layout mode (Unit: mm)



Recommended pattern layout of solder paste template

Reflow chart



Stage	Max. Temperature range	Duration
Preheating	150°C-200°C	60-180sec
Welding	217°C	60-150sec
Peak temperature	260°C	20-40sec