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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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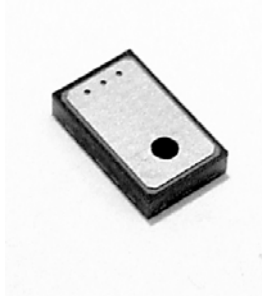
## Product Specification: SP0102 Series (Generation II)

This document applies the following SiSonic Model Numbers:

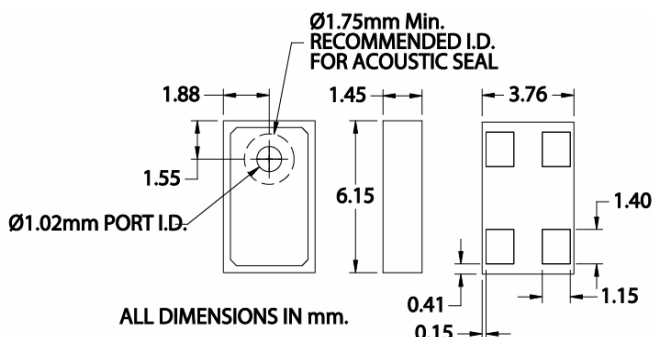
SP0102NC3-2

SP0102NC3-3

SiSonic microphone was developed as a cost effective alternative to traditional electret condenser microphones. Provided on tape-and-reel, SiSonic is ideally suited for high volume applications. It can be processed directly to a customer's PCB using standard automatic pick-and-place equipment, and surface mounted via standard solder reflow equipment.

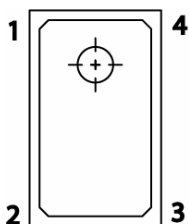


### Microphone Dimensional Layout



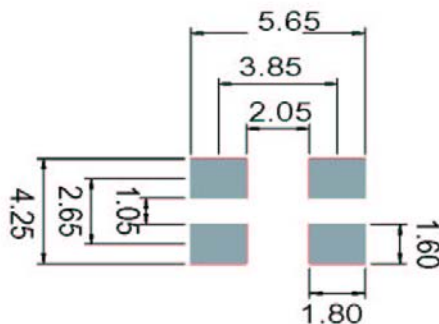
Item	Dim.	Tol. (+/-)	Units
Height	1.45	0.15	mm
Length	6.15	0.05	mm
Width	3.76	0.05	mm
Long Edge to C.L. Port	1.88	0.25	mm
Short Edge to C.L. Port	1.55	0.25	mm
Weight	~0.09	grams	
Coplanarity	< 0.1		mm

### Microphone Pin Output



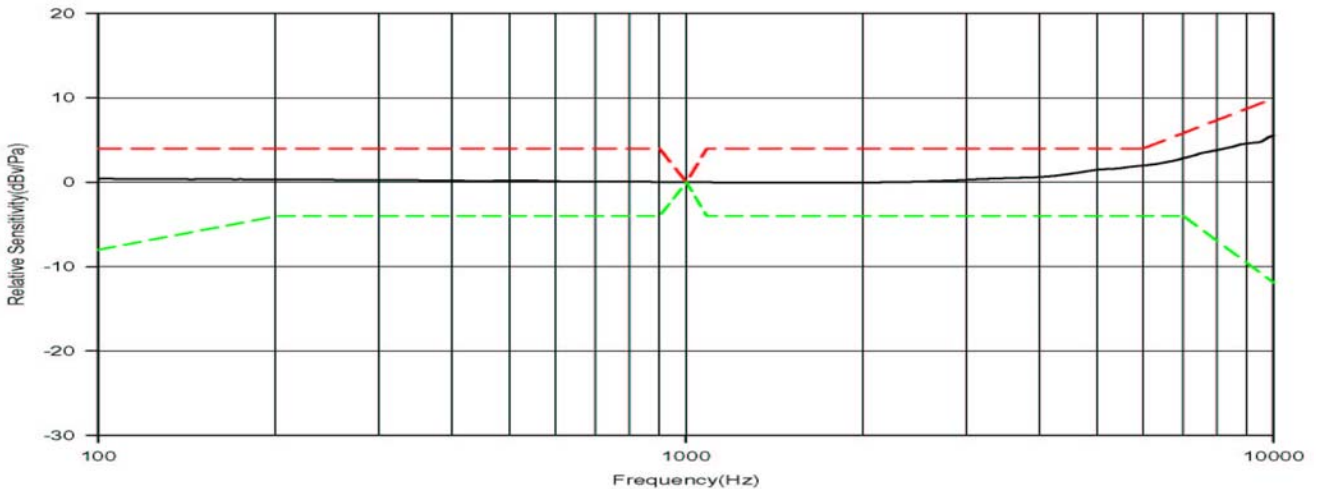
PIN#	FUNCTION
1	OUTPUT
2	GROUND
3	GROUND
4	POWER

### Recommended PCB Land Layout



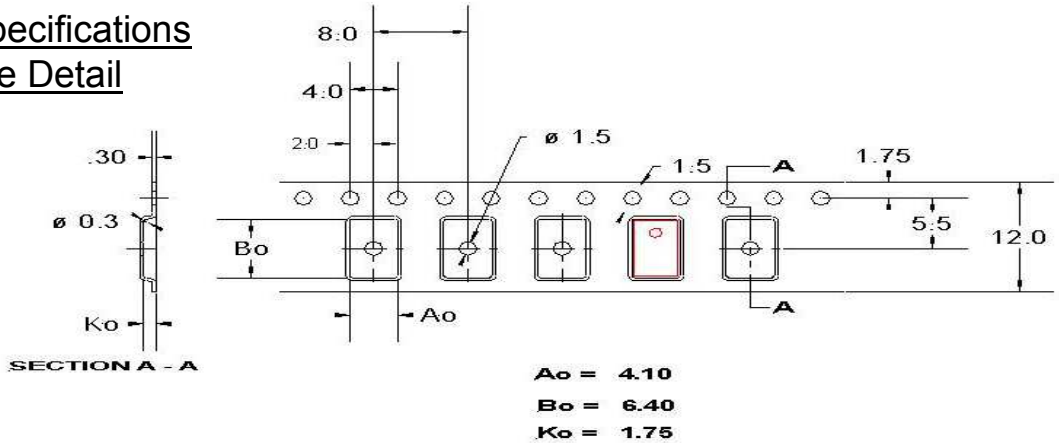
**Product Specifications**
Test Conditions: +20°C, 60-70% R.H.

	Symbol	Condition	Limits			Unit
			Min.	Nom.	Max.	
Directivity		Omni-directional				
Sensitivity	S	@ 1kHz (0dB=1V/Pa)	-46	-42	-38	dB
Output impedance	Z <sub>OUT</sub>	@ 1kHz (0dB=1V/Pa)			100	Ω
Current Consumption	I <sub>DSS</sub>	across 1.5 to 5.5 volts	0.100		0.250	mA
Signal to Noise Ratio	S/N	@ 1kHz (0dB=1V/Pa)	55	59		dB
Typical Input Referred Noise	ENL	A-weighted		35		dBA SPL
Supply Voltage	Vs		1.5		5.5	V
Sensitivity Loss across Voltage		Change in sensitivity over 5.5v to 1.5v	No Change Across Voltage Range			dB
Maximum Input Sound Level		At 100dB SPL, THD < 1% At 115dB SPL, THD = < 10%				dB
Operating Temperature			-40		+100	°C
Storage Temperature			-40		+100	°C
Frequency Range		100 – 10,000				Hz

**Frequency Response Curve**


## Packaging Specifications

### Carrier – Tape Detail



Model Number	Suffix	Reel Diameter	Qty per Reel	Capacitor Config.
SP0102NC3	-2	7"	1,200	10 & 33pF
SP0102NC3	-3	13"	4,500	10 & 33pF

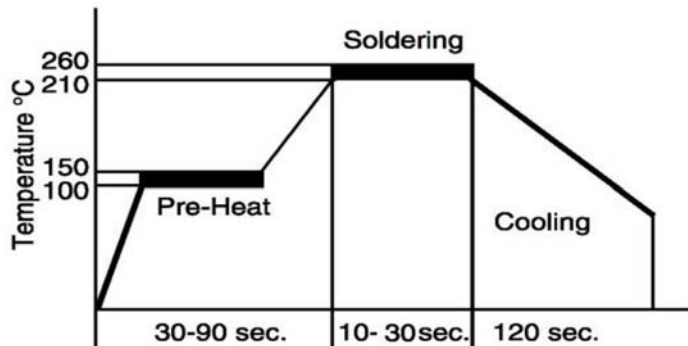
NOTE: All devices are lead-free and compatible with lead-free reflow profile.

Tape & Reel	Available in 7" or 13" diameter.
Leader Length	800mm or minimum of 100 empty pockets
Label	Label applied to external package and direct to reel. Per JEDEC.
Storage Life	1 year storage (original packaging, low humidity)
Polarity of part	"L" – direction

### Solderability Characteristics

Solder Reflow	260°C for maximum 30 seconds
Conditions:	<b>Do not board wash after reflow.</b> <b>Do not pull vacuum directly over acoustic port hole.</b>

Reflow Profile  
(Maximum Conditions)



## Reliability

Note: After test conditions are performed, the sensitivity of the microphone shall not deviate more than 3dB from its initial value.

Thermal Shock	Microphone unit must operate when exposed to air-to-air thermal shock 100 cycles, from -40°C to +125°C. (IEC 68-2-4),
High Temperature Storage Test	Microphone unit must maintain sensitivity after storage at +105°C for 1,000 hours. (IEC 68-2-2 Test Ba)
Low Temperature Storage Test	Microphone unit must maintain sensitivity after storage at -40°C for 1,000 hours. (IEC 68-2-1 Test Aa)
High Temperature Operating Test	Microphone unit must operate within sensitivity specifications for 16 hours at 105°C. (IEC 68-2-2 Test Ba)
Low Temperature Operating Test	Microphone unit must operate within sensitivity specifications for 16 hours at -40°C. (IEC 68-2-1 Test Aa)
Humidity Test	Tested under Bias at 85°C/85% R.H. for 270 hours. (JESD22-A101A-B)
Vibration Test	Microphone unit must operate under test condition: 4 cycles, from 20 to 2,000 Hz in each direction (x,y,z), 48 minutes, using peak acceleration of 20g (+20%, -0%). (MIL 883E, method 2007.2, A)
Electrostatic Discharge	Tested to 8kV direct contact discharge or 15kV air discharge as specified by IEC 1000-4-2, level 3 and level 4.
Reflow	Microphone is tested to 5 passes through reflow oven under conditions of 260°C for 30 seconds maximum.
Mechanical Shock	Tested to 5,000g (IEC 68-2-27, Ea).

### Recommended Interface Circuit

