



PRODUCT INFORMATION

PART #	CEM-NF9750-1JAA503NR	Revision: 0-2012
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Noise Cancelling Foil Electret Condenser Microphone

DESCRIPTION	FEATURES
Challenge Electronics Noise Cancelling Foil Electret Condenser Microphone with a FET; 9.7 mm diameter and 5.0 mm high; 1 version PCB; JA = 10 V max Power Supply; -50 ± 3 dB sensitivity; A = 680 Ω External Loading Resistance; N Solder Points Termination; RoHS Lead Free Compliant	<ul style="list-style-type: none"> ● RoHS, Lead Free Compliant ● ISO 9001 & ISO 14001 Certified ● Green Product

SPECIFICATIONS

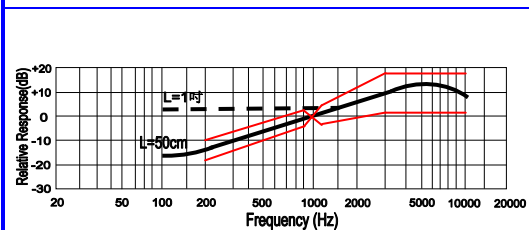
Direction	Noise Cancelling Foil Electret Condenser Microphone			Compliance	RoHS Lead Free			
Operating Voltage Range	1.0 Vdc ~ 10.0 Vdc			Power Supply (Vs)	1.5 V			
Frequency Range	50 ~ 20,000 Hz.			Maximum Current	0.5 mA			
Sensitivity	- 50.0 ± 3.0, (0 dB = 1V / Pa) at 1K Hz.			Minimum Signal to Noise Ratio	50			
Sensitivity Reduction	2.0 V to 1.0 V Maximum -3 dB			Maximum input S.P.L.	110 dB at 1.0 KHz, THD <1%			
Operating Temperature	-40°C to + 75°C			Storage Temperature	-40°C to + 75°C			
Loading Resistance (RL)	External, 680 Ohms, Vs =2.0 V			Built in Capacitors				
Termination	Solder Points							
Housing Material	AL-Mg Alloy						PCB Version Style #	1
Dimensions	Length / Diameter	9.7 mm	Width	Height	5.0 mm	Approximate Weight	0.6 grams	
Options								

RELIABILITY

Thermal Operating Temperature Test	240 hours continuous operation at Rated Power , at Maximum Rated Operating Temperature *		
	240 hours continuous operation at Rated Power , at Minimum Rated Operating Temperature *		
Thermal Storage Temperature Test	240 hours storage at Maximum Rated Storage Temperatures *		
	240 hours storage at Minimum Rated Storage Temperatures *		
Thermal Shock Test	5 cycles of Minimum and Maximum Operating Temperature Each cycle shall be set per diagram and is 3 hours long *		
Humidity Test	240 Hours at +40°C±2°C. 90-95% RH *		
Insulation Test	Must perform normal with program White Noise source at Rated Power for 100 Hours per (EIA)		
Vibration Test	2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *		
Termination Strength	Maximum pull of 0.5 kg strength for 3 seconds		
Drop Test	Dropped naturally from 1 meter height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 times total) *		
* Reliability Test Performance	Parts should conform to original performance within ±5 dB tested with Rated Power , after 3 hours of recovery period		

Warranty	For a period of one (1) year from date of shipping under normal operations conditions This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair
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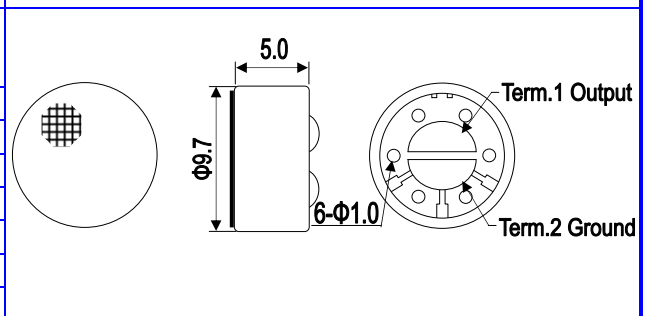
TYPICAL FREQUENCY RESPONSE



Frequency (Hz)	Lower Limit (dB)	Upper Limit (dB)
200	-18	-10
800	-6	+2
1,000	0	0
1,200	-4	+4
3,000	+2	+18
5,000	+2	+18
10,000	+2	+18

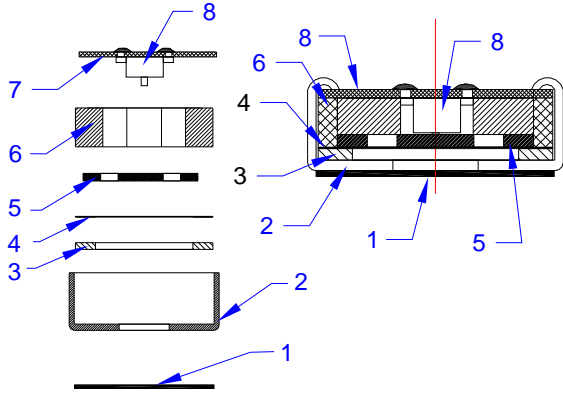
DIMENSIONS

Units in: mm Tolerance: ±0.3 mm



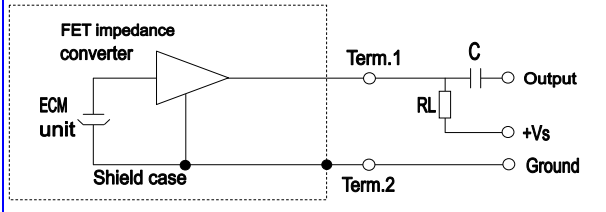


CONSTRUCTION MATERIALS



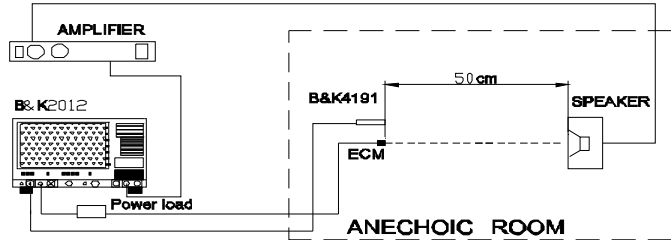
ITEM	PART NAME	MATERIAL	QTY
1	Felt	Fabric cloth	1
2	Case	AL-Mg Alloy	1
3	Polarized Diaphragm	DuPont	1
4	Spacer	Mylar	1
5	Electret Plate	Copper blank	1
6	Housing Chamber	Gather formaldehyde	1
7	P.C.B	FR-4 , # 1 Style	1
8	FET		1
9			
10			

CIRCUIT SCHEMATIC DRAWING



R_L	680 Ω
V_s	1.5 Vdc
C	1.0 μ FD

TESTING PROCEDURE



1. Measure the microphones under standard operating condition.
2. Put the microphone and standard microphone face to the sound source (speaker), the distance between sound source and microphone & standard microphone is 50cm. And keep the center distance 5cm between them to ensure that the change of sound pressure should be kept within ± 1 dB.
3. Keep the sound source pressure within ± 1 dB from speaker Measured by standard microphone.
4. The sensitivity of microphone can obtain its output voltage when sound source kept within 1,000Hz & 0.1 Pa.

Testing Condition

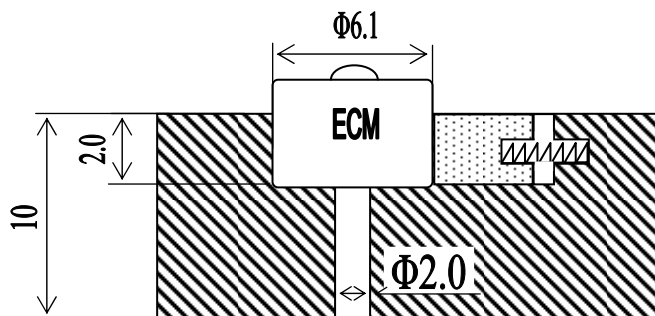
In Normal Weather	In Arbitrate Weather
Environment Temperature: 5~+35°C	Environment Temperature: 20 \pm 2°C
Relative Humidity: 45 ~ 85%	Relative Humidity: 60 ~ 70%
Air Pressure: 86 ~ 106Kpa	Air Pressure: 86 ~ 106Kpa

ELECTROSTATIC DISCHARGE Tested to IEC61000-4-2 level 3

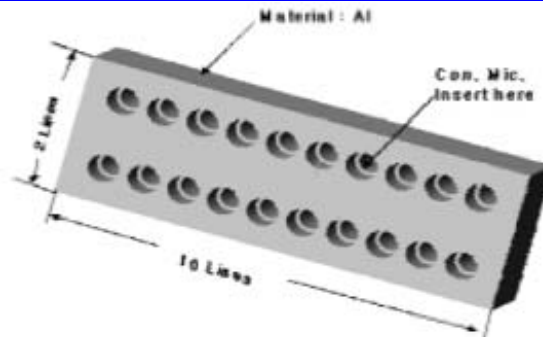
- a) Contact discharge
The microphone shall operate normally after 10 discharges of 6,000 Vdc and the discharge network is 150 pFD and 330 Ω
- b) Air discharge
The microphone shall operate normally after 10 discharges of 8,000 Vdc and the discharge network is 150 pFD and 330 Ω

SOLDERING INFORMATION

Single Pattern Heat Sink



Shape of heat sink



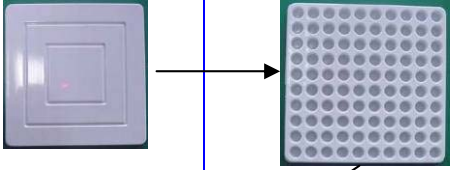
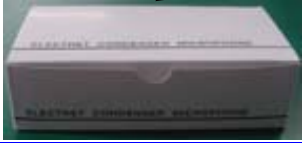

1. We recommend using anti-static welding machine which can control soldering temperature automatically.
2. Soldering temperature should be controlled under 320 °C and soldering time for each terminal should be 1~2 sec.
3. Microphone should be fixed on the metal block (heat sink), which has high radiation effects, and heat sink shall contact with MIC tightly.
4. Microphone may easily be destroyed by the static electricity and the countermeasure for eliminating the static electricity shall be executed (worktable and human body shall be ground connection).



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PACKAGING	MARKING	SIZE		
	Bundle	Tray / Small Box		
	Customer PN	Dimensions	X1	10 cm
	Other PN if required		Y1	10 cm
	Quantity		Z1	1 cm
Lot and/or Date Code	Quantity	100		
	Bundle Number	Bundle / Mid Size Boxes		
	Shipping Box	Dimensions	X1	20.5 cm
	Customer Part Number		Y1	15 cm
	Other PN (if required)		Z1	5 cm
Quantity	Quantity	1,000		
	Lot and/or Date Code	Shipping Box		
	PO Number	Dimensions	X3	55 cm
	Net Weight		Y3	23 cm
	Gross Weight		Z3	23.5 cm
Box Number	Number of Bundles / Boxes	20		
of Number of Boxes	Quantity	20,000		
Made in China	Approximate Weight	15 Kg		