



PRODUCT INFORMATION



PART #

CEM-N9750EAA544NR

Revision:

1-2015

Noise Reduction Back Electret Condenser Microphones

DESCRIPTION:

Challenge Electronics Microphone, **N** = Noise Canceling; 9.7 mm diameter and 5.0 mm high; **EA** = 1 to 5 Vdc Maximum Operating Voltage; **A** = 680 Ω External Loading Resistance; **-54 ± 4** dB sensitivity; **N** = with 2 PC Solder Points termination; RoHS Lead Free and REACH Compliant

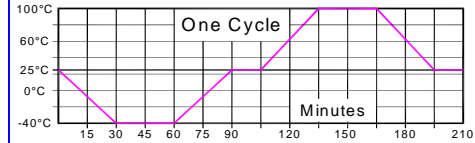


SPECIFICATIONS:

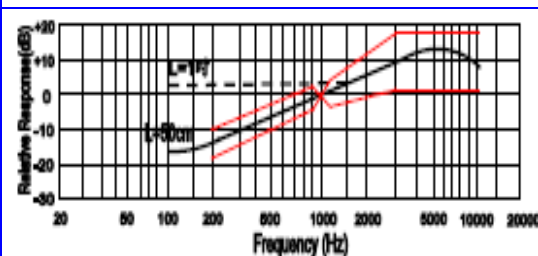
Direction:	Omni Directional Back Electret	Minimum Direction sensitivity:	10 dB at: 180°, 1 K Hz.
Operating Voltage Range:	Vs= 1.0 Vdc ~ 5.0 Vdc	Power Supply (Vs):	1.5 V
Frequency Range:	100 ~ 10,000 Hz.	Maximum Current:	0.5 mA
Sensitivity:	- 54 ± 4.0, (0 dB = 1V / Pa) at 1K Hz.	Minimum Sensitivity to Noise Ratio:	60
Sensitivity Reduction:	2.0 V to 1.0 V -3 dB	Maximum input S.P.L.:	110 dB at 1.0 KHz, THD <1%
Operating Temperature:	-20°C to + 60°C	Storage Temperature:	-40°C to + 75°C
Loading Resistance (RL):	External, 680 Ω at Vs = 1.5 V, Max. 2,200 Ω	Built in Capacitors:	None
Termination:	Solder Points	Housing Material:	Al-Mg Alloy. Color:
Dimensions:	Length / Diameter:	9.7 mm Ø	Width:
			mm
			Height:
			5.0 mm
Approximate Weight:	0.7 grams	Options:	Compliance:
			RoHS, Lead Free, REACH

Reliability:

Thermal Operating Cycle 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 Cycle 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 below and is three (3) hours long. Make sure to limit temperature range to specifications listed above *
Humidity Test	240 Hours at +40°C±2°C. 90-95% RH *
Vibration Test:	2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *
Drop Test:	Dropped naturally from 1 meter height onto the surface of 40 mm wooden board, 2 axes (X,Y) directions, 3 times (6 times total) *
Reliability Test Performance *	Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period.
Termination Strength	Terminals should withstand a 1.0 Kg. pull test for up to 1 minute.
Life Test	At rated voltage in room temperature continuously for 1,000 hours
Warranty	For a period of one (1) year from date of shipping under normal operations conditions



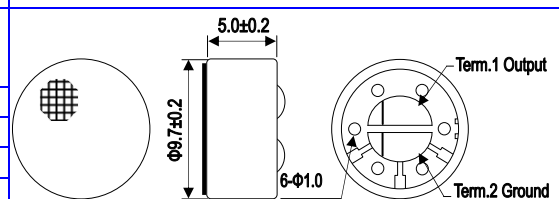
Typical Frequency Response:



Microphone Response Toll. Window

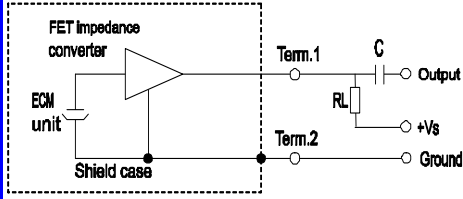
Frequency (Hz)	Lower Limit (dB)	Upper Limit (dB)
200	-18	-10
800	-6	+2
1,000	0	0
1,200	-4	+4
3,000	+2	+18
5,000	+2	+18
10,000	+2	+18

Dimensions: Units in: mm Tolerance: ±0.3 mm





CIRCUIT SCHEMATIC DRAWING

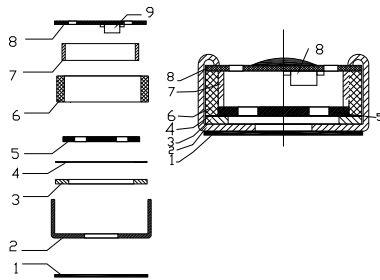


R_L	2.2 KΩ
V_s	2.0 V
C1	None
C2	None
C	1 μFD

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 & 0.1Pa.

CONSTRUCTION MATERIALS



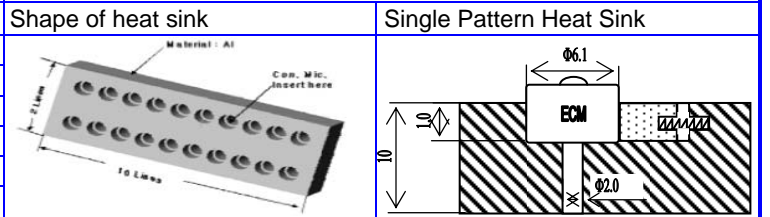
ITEM	PART NAME	MATERIAL	QTY
1	FELT	Fabric cloth	1
2	Case	Al-Mg Alloy	1
3	Polarizes Diaphragm	DUPONT	1
4	Spacer	Mylar	1
5	Back Electret	Copper blank	
6	Housing Chamber	Gather formaldehyde	1
7	Copper Ring	Copper tube	1
8	PCB	FR4	1
9	FET	3782	1
10			

Testing Condition

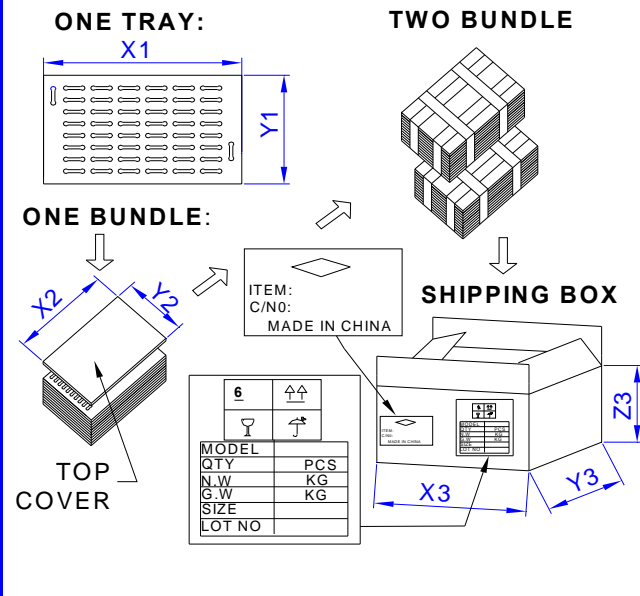
In Normal Weather	In Arbitrate Weather
Environment Temperature: 5~+35°C	Environment Temperature: 20±2°C
Relative Humidity: 45 ~ 85%	Relative Humidity: 60 ~ 70%
Air Pressure: 86 ~ 106Kpa	Air Pressure: 86 ~ 106Kpa

SOLDERING INFORMATION RECOMENDATION

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



PACKAGING



MARKING		SIZE	
Bundle	Tray / Small Box		
Part Number	Dimensions	X1	10 cm
Other PN if required		Y1	10 cm
Quantity		Z1	0.5 cm
Lot and/or Date Code	Quantity	100	
Bundle Number	Bundle / Mid Size Boxes		
Shipping Box	Dimensions	X1	20.5 cm
Part Number		Y1	10.5 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 Gross Weight	16 Kg.	

Revisions

Revision	Description	By	Date
1-2015	Corrected Frequency Response Specifications	Ely Zofan	8/31/2015