



# PRODUCT INFORMATION

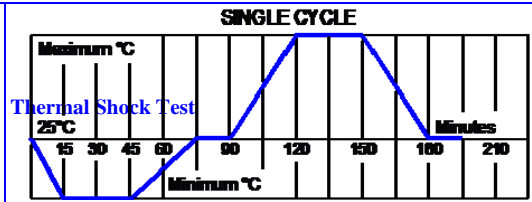
<b>PART #</b>	<b>CEM-OB6022-EJAD443P1.9R</b>	<b>Revision: 1-2013</b>
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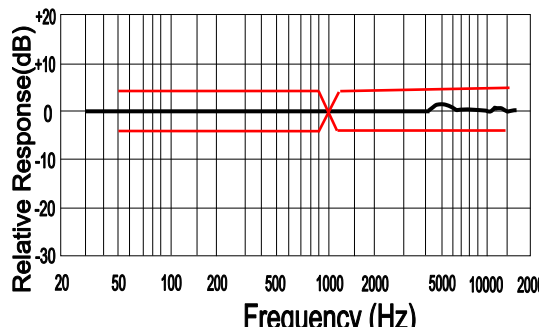
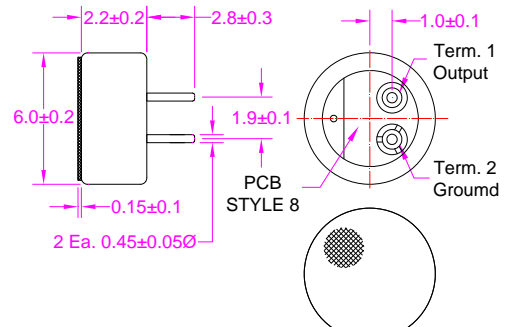


## Omni Directional Back Electret Condenser Microphone

<b>DESCRIPTION</b>	<b>FEATURES</b>
Challenge Electronics Omni Direction Back Electret Condenser Microphone with a FET, 6.0 mm diameter and 2.2 mm high, PCB version # E, JA = 10 V max Power Supply, -44 ± 3 dB sensitivity, D = 2.2 K Ω External Loading Resistance, Pins termination, 1.9 mm Spacing, RoHS Lead Free Compliant.	<ul style="list-style-type: none"> <li>• RoHS, Lead Free Compliant</li> <li>• ISO 9001 &amp; ISO 14001 Certified</li> <li>• Green Product</li> </ul>

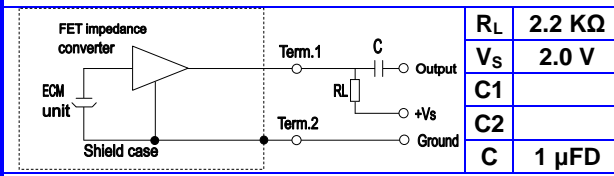
<b>SPECIFICATIONS</b>								
<b>Direction</b>	Omni Directional Back Electret		<b>Compliance</b>	RoHS Lead Free				
<b>Operating Voltage Range</b>	1.0 Vdc ~ 10.0 Vdc		<b>Power Supply ( Vs )</b>	2.0 V				
<b>Frequency Range</b>	50 ~ 20,000 Hz.		<b>Maximum Current</b>	0.5 mA				
<b>Sensitivity</b>	- 44.0 ± 3.0, ( 0 dB = 1V / Pa ) at 1K Hz.		<b>Minimum Signal to Noise Ratio</b>	58				
<b>Sensitivity Reduction</b>	3.0 V to 2.0 V Maximum -3 dB		<b>Maximum input S.P.L.</b>	110 dB at 1.0 KHz, THD <1%				
<b>Operating Temperature</b>	-20°C to + 60°C		<b>Storage Temperature</b>	-40°C to + 75°C				
<b>Loading Resistance ( RL )</b>	External, 2.2 K Ohms, Vs =2.0 V		<b>Built in Capacitors</b>	None				
<b>Termination</b>	Pins, 0.45 mm Diameter, 2.8 mm Long, 1.9 mm Spacing							
<b>Housing Material</b>	Aluminum / Magnesium Alloy			<b>PCB Version Style #</b>	E			
<b>Dimensions</b>	<b>Length / Diameter</b>	6.0 mm	<b>Width</b>	mm	<b>Height</b>	2.2 mm	<b>Approximate Weight</b>	0.1 grams
<b>Options</b>								

<b>RELIABILITY</b>	
<b>Thermal Operating Temperature Test</b>	240 hours continuous operation <b>at Rated Power</b> , at <b>Maximum Rated Operating Temperature</b> * 240 hours continuous operation <b>at Rated Power</b> , at <b>Minimum Rated Operating Temperature</b> *
<b>Thermal Storage Temperature Test</b>	240 hours storage at <b>Maximum Rated Storage Temperatures</b> * 240 hours storage at <b>Minimum Rated Storage Temperatures</b> *
<b>Thermal Shock Test</b>	5 cycles of <b>Minimum and Maximum Operating Temperature</b> , Each cycle shall be set per diagram below and is three (3) hours long * 
<b>Humidity Test</b>	240 Hours at +40°C±2°C. 90-95% RH *
<b>Operation Life Test</b>	Must perform normal with program White Noise source <b>at Rated Power</b> for <b>100 Hours</b> per (EIA)
<b>Vibration Test</b>	2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *
<b>Termination Strength</b>	Maximum pull of 0.5 kg strength for 3 seconds
<b>Drop Test</b>	Dropped naturally from 1 meter height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (6 times total) *
<b>Reliability Test Performance</b> *	<b>Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period</b>
<b>Warranty</b>	For a period of one (1) year from date of shipping under normal operations conditions

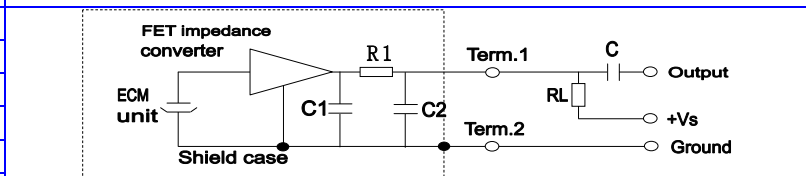
<b>TYPICAL FREQUENCY RESPONSE</b>			<b>DIMENSIONS</b> Units in: mm Tolerance: ±0.3 mm	
	Frequency (Hz)	Lower Limit (dB)	Upper Limit (dB)	
	50	-6	+3	
	100	-3	+3	
	800	-3	+3	
	1,000	0	0	
	1,200	-3	+3	
	3,000	-3	+8	
5,000	-3	+8		
10,000	-8	+8		



### CIRCUIT SCHEMATIC DRAWING

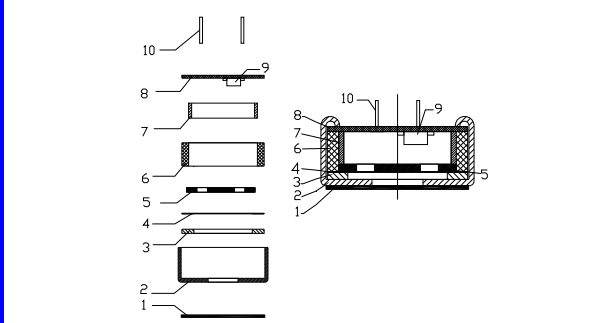


### TESTING PROCEDURE



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 ± 1dB.
3. Keep the sound source pressure within ± 1dB 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



### Testing Condition

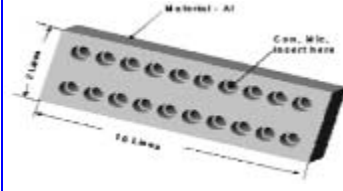
In Normal Weather	In Arbitrate Weather
Environment Temperature: 5~+35°C	Environment Temperature: 20±2°C
Relative Humidity: 45 ~ 85%	Relative Humidity: 60 ~ 70%
Air Pressure: 86 ~ 106Kpa	Air Pressure: 86 ~ 106Kpa

ITEM	PART NAME	MATERIAL	QTY	ITEM	PART NAME	MATERIAL	QTY
1	Dustproof gauze	Non-weave cloth	1	6	Chamber		1
2	Case	Al-Mg alloy PA	1	7	Ring	Copper	1
3	Diaphragm		1	8	P.C.B	FR-4 , E Style	1
4	Spacer	Polyester	1	9	FET	3782	1
5	Electret Plate	FEP and Metal	1	10	Pins	2.8 mm Long, 0.45 mm φ	2

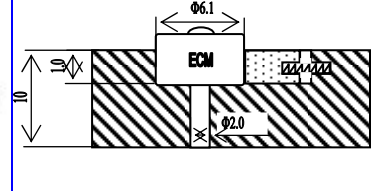
### SOLDERING INFORMATION

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 one~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)

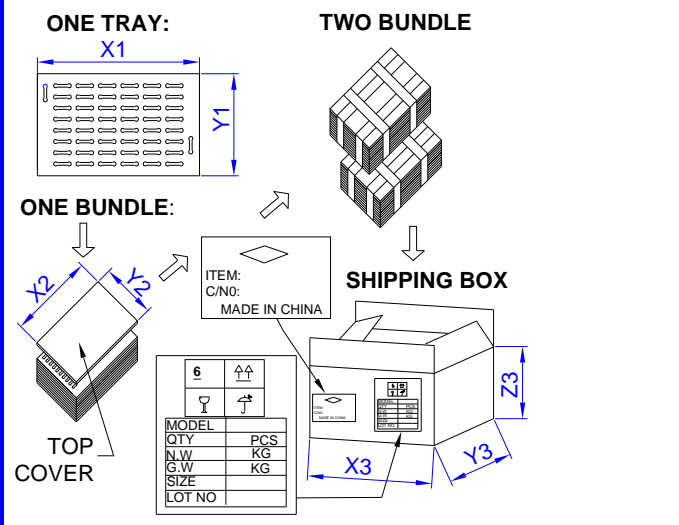
### Shape of heat sink



### Single Pattern Heat Sink



### PACKAGING



### MARKING

Bundle	Tray / Small Box	
Customer PN	Dimensions	
Other PN if required		
Quantity		
Lot and/or Date Code	Quantity	100
Bundle Number	Bundle / Mid Size Boxes	
Shipping Box	Dimensions	
Customer Part Number		
Other PN (if required)		
Quantity	Quantity	1,400
Lot and/or Date Code	Shipping Box	
PO Number	Dimensions	
Net Weight		
Gross Weight		
Box Number	Number of Bundles / Boxes	30
of Number of Boxes	Quantity	28,000
Made in China	Approximate Weight	5 Kg

### SIZE

Revision	Description	By	Date
1-2013	Modify PC Pins Spacing from 1.0 to 1.9 mm and changed PN to correspond to Pins	ESZ	2/25/2013

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