
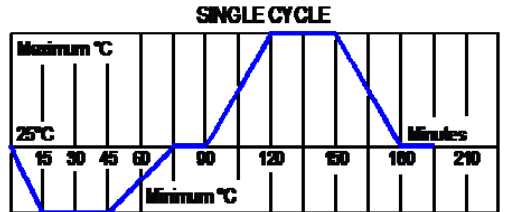




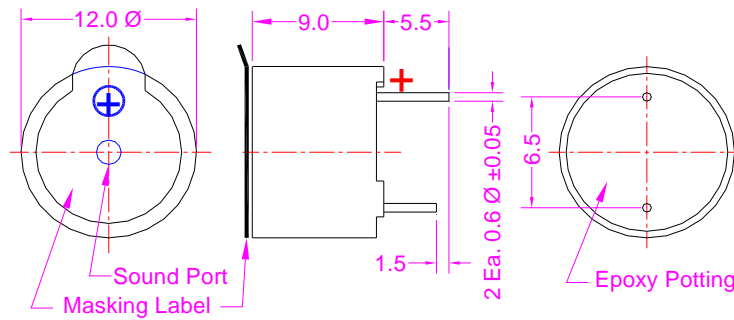
# PRODUCT INFORMATION

<b>PART #</b>	<b>CEET12A090-16-102-24P65LR</b>						<b>Revision: 3-2012</b>	
	<b>Electro-Magnetic Sound Transducer</b>							
<b>DESCRIPTION</b>				<b>FEATURES</b>				
<b>Challenge Electronics Electro-Magnetic Transducer, 12.0 mm Diameter, A type case, 6.5 mm High, 16 Ohms Coil Impedance, 1 to 2 Vo-p Operating Voltage, Minimum SPL of 80 dB(A) at: Rated Voltage &amp; 10 cm, 2,400 Hz. Resonant Frequency, PC Pins 6.5 mm spacing Termination, washing Label, RoHS Lead Free Compliance</b>				<ul style="list-style-type: none"> <li>• <b>Washable</b></li> <li>• <b>RoHS, Lead Free Compliant</b></li> <li>• <b>ISO 9001</b></li> </ul>				
<b>SPECIFICATIONS</b>								
<b>Operating Voltage</b>	1.0 – 2.0 Vo-p	<b>Rated Voltage</b>	1.5 Vo-p	<b>Resonant Frequency</b>	2,400 Hz.	<b>Coil Resistance</b>	16 ± 4 Ohms	
<b>Sound Pressure Level</b>	Min. 80 dB(A), Typ. at: Rated Voltage, 10 cm, Resonant Frequency, Square Wave, 50% Duty Cycle							
<b>Operating Current</b>	30 mA, at: Rated Voltage, Resonant Frequency, Square Wave, 50% Duty Cycle							
<b>Operating Temperature</b>	-30°C to +70°C		<b>Storage Temperature</b>	-40°C to +85°C				
<b>Material</b>	<b>Case</b>	A Style, Plastic, Noryl or equal, Black				<b>Sound Port</b>	Top	
	<b>Encapsulation</b>	Epoxy Potting						
	<b>Termination</b>	PC Pins, 0.6 mm Diameter, Copper, Sn plated, Positive Pin 5.5 mm Long, Negative Pin 4.0 mm Long						
<b>Physical Dimensions</b>	<b>Length or Diameter (L / D)</b>	12.0 mm Ø	<b>Width (W)</b>		<b>Height (H)</b>	9.0 mm	<b>Pins Spacing</b>	6.5 mm
<b>Approximate Weight</b>	2 grams	<b>Removable Washing Label</b>	Yes	<b>Compliance</b>	Lead Free, RoHS			
<b>Options</b>								
<b>RELIABILITY</b>								
<b>Thermal Operating Temperature Test</b>	96 hours continuous operation at <b>Rated Voltage</b> , at <b>Maximum Rated Operating Temperature</b> *							
	96 hours continuous operation at <b>Rated Voltage</b> , at <b>Minimum Rated Operating Temperature</b> *							
<b>Thermal Storage Temperature Test</b>	96 hours storage at <b>Maximum Rated Storage Temperatures</b> *							
	96 hours storage at <b>Minimum Rated Storage Temperatures</b> *							
<b>Thermal Shock Test</b>	<b>5 cycles</b> of Minimum and <b>Maximum Operating Temperature</b> Each cycle shall be set per diagram below and is three (3) hours long *							
<b>Humidity Test</b>	120 Hours at +40°C±2°C. 90-95% RH *							
<b>Insulation Test</b>	A minimum of 10 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case							
<b>Vibration Test</b>	2 Hours of at 0.75 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *							
<b>Termination Strength</b>	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for <b>10 seconds</b>							
<b>Drop Test</b>	Dropped naturally from 750 mm height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 times total) *							
<b>Solderability</b>	Terminal leads are immersed in rosin for 5 seconds and then immersed in solder-bath of +270°C for 3±1 seconds							
<b>Soldering Heat Resistance</b>	Terminal leads are immersed, up to 1.5 mm from part case, in rosin for 5 seconds and then immersed in solder-bath of +350±5°C for 3±0.5 seconds or +260±5°C for 10±1 seconds							
<b>* Reliability Test Performance</b>	Parts should conform to original performance within ±3dB, after 3 hours of recovery period							
<b>Operation Life Test</b>	<b>Continuous</b>	240 hours of continuous operation, at Rated Voltage, each at Minimum & Maximum Rated Operating Temperatures						
	<b>Intermittent</b>	1,000 hours of: 1 minute ON 4 minutes OFF cycle, at Room Temperature, and Rated Voltage						
<b>Warranty</b>	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							

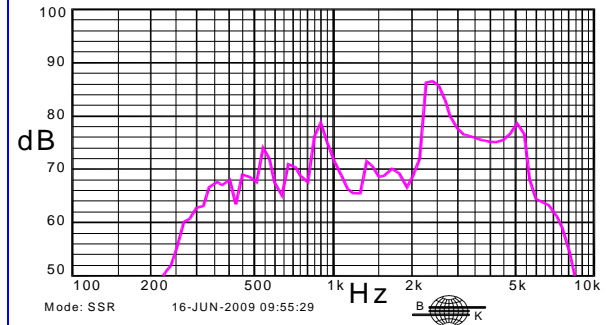


**DIMENSIONS**

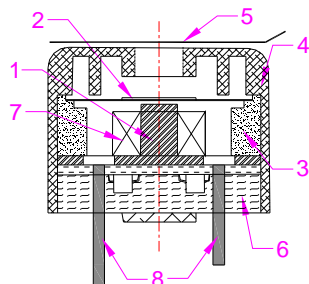
Units in: mm, Tolerance: ± 0.5 mm unless specified otherwise



**SPL vs. FREQUENCY RESPONSE**



**Cross Sectional Diagram:**



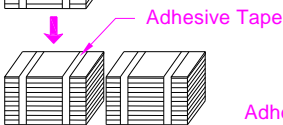
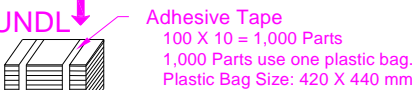
Item #	Description	Qty	Notes
1	Coil Part	1	Copper And Iron
2	Diaphragm	1	Iron
3	Core	1	Ferrite
4	Housing	1	Noryl
5	Masking label	1	Paper
6	Potting		Epoxy
7	Magnet Wire		
8	PC Pins	2	Copper, Sn plated

**PACKAGING**

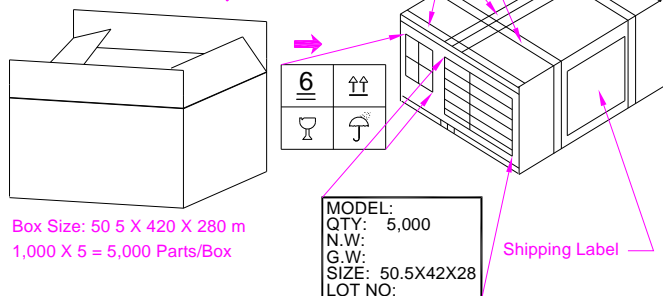
**TRAY**



**BOUNDL**



**SHIPPING BOX**



Box Size: 50.5 X 420 X 280 mm  
 1,000 X 5 = 5,000 Parts/Box

MODEL:  
 QTY: 5,000  
 N.W:  
 G.W:  
 SIZE: 50.5X42X28  
 LOT NO:

**MARKING**

**TRAY**

<b>Bundle</b>	Dimensions	<b>X1</b>	<b>24 cm</b>
Customer PN		<b>Y1</b>	<b>16 cm</b>
Other PN (if required)		<b>Z1</b>	<b>2.7 cm</b>
Quantity	Quantity	<b>100</b>	
Lot and/or Date Code	<b>BUNDLE</b>		
Bundle Number	Dimensions	<b>X2</b>	<b>44 cm</b>
<b>Shipping Box</b>		<b>Y2</b>	<b>42 cm</b>
Customer Part Number		<b>Z2</b>	<b>27.0 cm</b>
Other PN (if required)	Quantity	<b>1,000</b>	
Quantity	<b>SHIPPING BOX</b>		
Lot and/or Date Code	Dimensions	<b>X3</b>	<b>50.5 cm</b>
PO Number		<b>Y3</b>	<b>42.0 cm</b>
Net Weight		<b>Z3</b>	<b>28.0 cm</b>
Gross Weighjt	Number of Bundles	<b>5</b>	
Box Number	Quantity	<b>5,000</b>	
of Number of Boxes	Approximate Weight	<b>11</b>	
<b>Made in China</b>			