## PRODUCT INFORMATION

**PART #:** CEET090A055-40-27P4LR  
**Revision:** 2-2015

### DESCRIPTION

Electromagnetic Sound Transducer

Challenge Electronics Electromagnetic Transducer; 9 mm Length; A style case (Round, Top Port); 5.5 mm High; 40 ohm coil impedance, 1 to 5.0 Vo-p Operating Voltage; 2,731 Hz. Resonant Frequency; minimum Sound output of 85 dB(A) min at 10 cm at Rated Voltage; Pin Termination 4 mm spacing.

### FEATURES

- RoHS, Lead Free Compliant
- REACH Compliant
- ISO 9001 Certified

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Operating Voltage</th>
<th>4-6 Vo-p</th>
<th>Nominal Rated Voltage</th>
<th>5.0 Vo-p</th>
<th>Resonant Frequency</th>
<th>2,731 Hz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound Pressure Level</td>
<td>85 dB(A) min, at: 10 cm, Resonant Frequency, Nominal rated Voltage, Square Wave 50% Duty Cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Current</td>
<td>60 mA, max at: Resonant Frequency, Nominal rated Voltage, Square Wave</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30°C to +85°C</td>
<td>Storage Temperature</td>
<td>-40°C to +85°C</td>
<td>Coil Resistance</td>
<td>40 ± 4 Ohms</td>
</tr>
<tr>
<td>Material Housing</td>
<td>PBT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diaphragm Material</td>
<td>Iron</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Termination PIN</td>
<td>PCB Pin, Pin = 4.5 x 0.6 mm, Spacing = 4 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Dimensions</td>
<td>Diameter (D)</td>
<td>9 mm ± 0.5 mm</td>
<td>Width (W)</td>
<td>Height (H)</td>
<td>5.5 mm ± 0.2 mm</td>
</tr>
<tr>
<td>Approximate Weight</td>
<td>1.0 grams</td>
<td>Removable Washing Label</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RELIABILITY

<table>
<thead>
<tr>
<th>Thermal Operating Temperature Test</th>
<th>96 hours continuous operation at Rated Voltage, at Maximum Rated Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Storage Temperature Test</td>
<td>96 hours storage at Maximum Rated Storage Temperatures</td>
</tr>
<tr>
<td>Thermal Shock Test</td>
<td>5 cycles of Minimum and Maximum Operating Temperature</td>
</tr>
<tr>
<td>Each cycle shall be set per diagram and is 3 hours long</td>
<td></td>
</tr>
<tr>
<td>Humidity Test</td>
<td>140 Hours at +40°C±2°C, 90-95% RH</td>
</tr>
<tr>
<td>Insulation Test</td>
<td>A minimum of 10 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case</td>
</tr>
<tr>
<td>Vibration Test</td>
<td>2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions</td>
</tr>
<tr>
<td>Termination Strength</td>
<td>Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds</td>
</tr>
<tr>
<td>Drop Test</td>
<td>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)</td>
</tr>
</tbody>
</table>

* Reliability Test Performance Parts should conform to original performance within ±3dB, 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

---

The information contained herein is believed to be correct, but no guarantee or warranty, express or implied, with respect to accuracy, completeness or results is extended and no liability is assumed.

Challenge Electronics reserves the right to make changes in any specification, data or material contained herein.

Copyright © 2014 Challenge Electronics  
2/16/2015
Challenge Electronics
95 East Jefryn Boulevard
Deer Park, NY 11729
Tel: 1-800-722-8197
1-631-595-2217
Fax: 1-631-586-5899
WEB: www.ChallengeElectronics.com
EMAIL: Sales@Challelec.com
ISO 9001:2008 Certified

DIMENSIONS
Units in: mm  Tolerance: ±0.2 mm

FREQUENCY RESPONSE CURVE

CONSTRUCTION

RECOMMENDED CIRCUIT DRIVE

The diodes are recommended to protect the power supply from noise interference produced by the transducer coil.

STORAGE

1. Shelf life: Twelve (12) months when devices are to be stored in factory supplied unopened ESD moisture sensitive bag under maximum environmental conditions of 30°C, 70% R.H.
2. Exposure: Devices should not be exposed to high humidity high temperature environment. MSL (moisture sensitivity level) Class 2
### SUBSTANCE OF VERY HIGH CONCERN

This product does NOT contain any of the REACH Substances of Very High Concern (SVHC), and is in compliance with European Union REACH Regulation No.1907/2006 regarding chemical substances which must be registered or disclosed.

### PACKAGING

- **MARKING**
  - **Box**
    - Part Number
    - Dimensions: X 24 cm, Y 16 cm, Z 3 cm
    - Quantity: 150
    - Lot and/or Date Code: Bundle
      - X cm
- **Shipping Box**
  - Part Number
  - Dimensions: Y 40 cm, Z 28 cm
  - Quantity: 1500
  - Lot and/or Date Code: Shipping Box
    - X 50.5 cm
- **Customer PN (if required)**
- **PO Number**
- **Net Weight**
- **Gross Weight**
- **Number of Bundles**
- **Box Number of Boxes**
- **Quantity**: 7500
- **Approximate Weight**: Kg
- **Made in**: China

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
<th>By:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2015</td>
<td>Added photo. Raised operating temp to 85°C</td>
<td>w. sargent</td>
<td>1/22/2015</td>
</tr>
<tr>
<td>2-2015</td>
<td>Updated photo.</td>
<td>w. sargent</td>
<td>2/16/2015</td>
</tr>
</tbody>
</table>

The information contained herein is believed to be correct, but no guarantee or warranty, express or implied, with respect to accuracy, completeness or results is extended and no liability is assumed. Challenge Electronics reserves the right to make changes in any specification, data or material contained herein.

Copyright © 2014 Challenge Electronics

CE-EG-04-400ET ElectroMagnetic Sound Transducer Specifications 3 of 3

2/16/2015