### PRODUCT INFORMATION

**PART #:** CEPT220B118-140-40P10  
**Revision:** 2-2015

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**DESCRIPTION**

Challenge Electronics Piezoelectric Feedback Transducer; 22.0 mm Diameter; B style case (Top Sound Port, Round with Standoffs); 11.8 mm High; 1-40 Vp-p; Nominal Voltage, 3 Vp-p; 4,000 Hz. Resonant Frequency; Minimum Sound Pressure Level 85 dB(A) at 10 cm, Nominal Voltage; PC Pins, spaced 10 mm

**FEATURES**

- RoHS Compliant
- SVHC Compliant
- ISO 9001 Certified

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### SPECIFICATIONS

**Operating Voltage**  
Maximum 1 - 40 Vp-p  
Nominal Rated Voltage 3 Vp-p  
Resonant Frequency 4,000 ± 1,000 Hz.

**Sound Pressure Level**  
Minimum 85 dB(A), with Test Circuit at: 3 Vp-p, measured at 10 cm SPL is measured at 25°C, Sound Level meter # 2240, Type 2, Fast Response, A-Weighted

**Operating Current**  
Maximum 3 mA, with Test Circuit at: 3 Vp-p

**Operating Temperature**  
-40°C to ~ +85°C  
Capacitance 15,000 ± 30% pFD at 1,000 Hz & 1.0 V

**Material**

- Housing Plastic, PBT, Black
- Diaphragm Brass
- Termination Two (2) PC Pins, Brass, Au Plated, 0.8 ± 0.5 mm

**Physical Dimensions**

- Length / Diameter 22.0 mm Ø
- Width (W) 11.8 mm
- Height (H) 11.8 mm
- Pins Spacing 10.0 mm

**Options**

- Approximate Weight 3.2 grams
- Washable No
- Compliance RoHS Lead Free, SVHC

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### RELIABILITY

**Thermal Operating Temperature Test**  
96 hours continuous operation at Rated Power, at Maximum Rated Operating Temperature *

**Thermal Storage Temperature Test**  
96 hours storage at Maximum 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**

120 Hours at +60°C ± 2°C, 90-95 % RH *

**Vibration Test**

2 Hours at 1.5 mm with 10 to 55 Hz. of vibration frequency to each of 3 perpendicular directions *

**Drop Test**

Dropped naturally from 700 mm height onto the surface of 10 mm wooden board, 2 directions— upper and side of the part are applied *

**Termination Strength**

Maximum of 9.8 N load pull test, applied to each terminal in axial direction for 10 second *

**Humidity Test**

120 Hours at +60°C ± 2°C, 90-95 % RH *

**Solderability**

Terminal leads are immersed in rosin for 5 seconds and then immersed in solder-bath of +270°C for 3±1 seconds

**Soldering Heat Resistance**

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

* Reliability Test Performance  
Parts should conform to original performance within ±3dB, after 3 hours of recovery period.

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### 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
DIMENSIONS:  Units in: mm  Tolerance: ±0.5mm

<table>
<thead>
<tr>
<th>Top View</th>
<th>Side View</th>
<th>Back View</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Top View Diagram]</td>
<td>![Side View Diagram]</td>
<td>![Back View Diagram]</td>
</tr>
</tbody>
</table>

PERFORMANCE USING TEST CIRCUIT

![Performance Chart]

DRIVING CIRCUIT APPLICATIONS

<table>
<thead>
<tr>
<th>Low Output - Push Drive</th>
<th>Medium Loud - Resistor Drive</th>
<th>Extra Loud - Coil Boosted</th>
</tr>
</thead>
</table>

TEST CIRCUIT

Sound Type: Continuous Tone
Input Power: 5 Vdc

WAVE SOLDER PROFILE

- Preheat temperature: Maximum 100°C for less than 80 seconds, temperature increasing speed 2°C / second
- Solder bath temperature: 250°C (lead), 260°C (lead-free alloy)
- Wave soldering cycle time: 3 seconds (single wave), 5 seconds (dual wave)
- Temperature reducing speed: Maximum 6°C/second
- Delivery speed: 1.4~1.5 meter/minute

SUBSTANCE OF VERY HIGH CONCERN (SVHC)

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

<table>
<thead>
<tr>
<th>Shipping Box MARKING</th>
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<tbody>
<tr>
<td>Part Number</td>
<td>Dimensions</td>
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<tr>
<td>Other PN if required</td>
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</tr>
<tr>
<td>Quantity</td>
<td>Z1 cm</td>
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<tr>
<td>Lot and/or Date Code</td>
<td>Quantity</td>
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<tr>
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<td>Z3 cm</td>
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<table>
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<tr>
<th>Revision</th>
<th>Description</th>
<th>By</th>
<th>Date</th>
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<tbody>
<tr>
<td>1-2015</td>
<td>Revised Transducer height from 12.0 mm to 12.3 mm</td>
<td>Joey</td>
<td>7/19/2012</td>
</tr>
<tr>
<td>2-2015</td>
<td>Revised OLD PN 131PZ22400LFP to CEPT220B118-140-40P10 and updated the Specifications</td>
<td>Ely Zofan</td>
<td>9/16/2015</td>
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