**Challenge Electronics**
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# PRODUCT INFORMATION

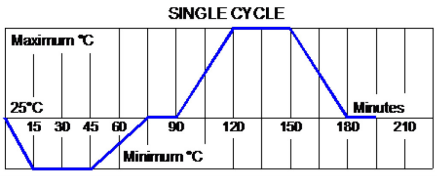
| PART # | CES400S080CB08PCN550SUR | Revision: 1-2014 |
|---|---|---|
| Lead Free RoHS COMPLIANCE | **OVAL SPEAKER** | |

**DESCRIPTION:** Oval Speaker, 40 X 20 X 8 mm High, 8 Ohm, Cloth, Fo = 550 Hz, PCB, RoHS Lead Free Compliant.

## SPECIFICATIONS

| | | | | | | |
|---|---|---|---|---|---|---|
| **Shape** | Round | | | | | |
| **DC Impedance** | 8 Ω ±15%, at 1,000 Hz., at 1.0 V | | **Rated Power:** | 1.5 W | **Maximum Power:** | 3.0 W |
| **Effective Frequency Band** | 550 Hz. to 20,000 Hz. | | **Resonant Frequency (Fo):** | | 550 Hz. ±20%, at 1.0 V | |
| **Sound Pressure Level** | 84 ± 3.0 dB (A), at 1.0 W, 0.5 m, Average 800, 1,000,1,200, 1,500 (Hz ), at 25°C., Baffle board (IEC) | | | | | |
| **Operating Temperature** | -20ºC to + 60ºC | | **Storage Temperature** | | -30ºC to +70ºC | |
| **Physical Dimensions** | **Length or Diameter (L /D)** | 40.0 mm | **Width (W)** | 20.0 mm | **Height (H)** | 8.0 mm |
| **Distortion** | Less than 5% at 1,000 Hz. at 1.0 W. | | | | | |
| **Buzz & Rattle** | Not be audible at 3.5 V sine wave between 20 Hz and 2,200 Hz. | | | | | |
| **Polarity** | When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward. | | | | | |
| **Magnet** | Ferrite, NdFeB, 11 mm Ø X 2.0 mm t | | | | **Flux Density:** | 1.0 T |
| **Termination** | PCB with solder joints connections | | | | | |
| **Housing Material** | Black Plastic, ABS | | **Cone Material** | Cloth | | |
| **Options** | | | | | | |
| **Approximate Weight** | grams | **Shielding** | Yes | **Compliance** | Lead Free, RoHS | |

## RELIABILITY

| | |
|---|---|
| **Max. Power Test** | With program White-Noise source Maximum Power, 1 minute on, 2 minutes off, 10 cycles, per (EIA) * |
| **Thermal Operating Temperature Test** | 50 hours continuous operation at Rated Power, at Maximum Rated Operating Temperature * |
| | 50 hours continuous operation at Rated Power, at Minimum Rated Operating Temperature * |
| **Thermal Storage Temperature Test** | After parts are subjected to 96 hours storage at Maximum Rated Storage Temperatures * |
| | After parts are subjected to 96 hours storage at Minimum Rated Storage Temperatures * |
| **Thermal Shock Test** | After parts are subjected to five (5) cycles of Minimum and Maximum Operating Temperature. Each cycle shell be set per diagram below and is three (3) hours long * |
| |   |
| **Humidity Test** | After parts are subjected to 96 Hours at +40°C±2°C. 90-95% RH * |
| **Operation Life Test** | Must perform normal with program White-Noise source at Rated Power for 96 Hours per (EIA) * |
| **Insulation Test** | A minimum of 1 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case |
| **Vibration Test** | After parts are subjected to 15minutes of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions * |
| **Termination Strength** | Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds |
| **Drop Test** | After parts are subjected to 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) * |
| **Reliability Test Performance** * | **Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period.** |
| **Warranty** | For a period of one (1) year from date of shipping under normal operations conditions |

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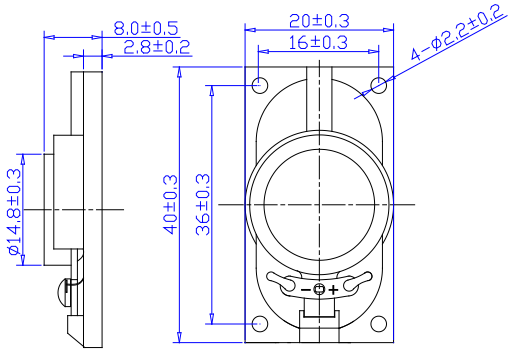
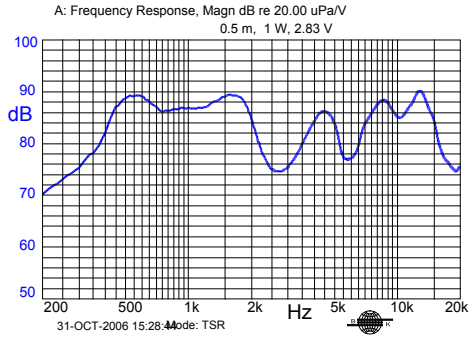
## DIMENSIONS

Units in: mm, Tolerance: ± 0.3mm unless specified otherwise.

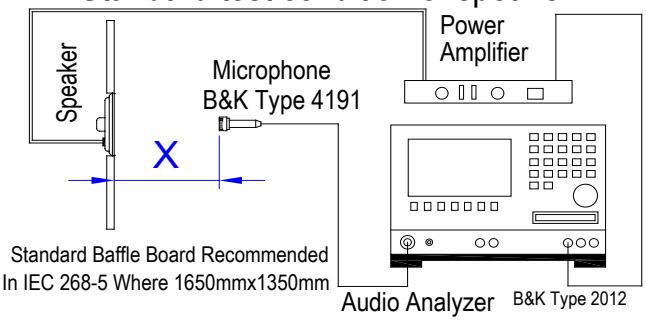



## SPL vs. FREQUENCY RESPONSE




## TEST PROCESS

Standard test condition of speaker




**Test Condition**

**STANDARD**

| | |
|---|---|
| Temperature: | 15 ~ 35ºC |
| Relative humidity: | 45% ~ 85% |
| Atmospheric pressure: | 860 mbar to 1060mbar |

**JUDGEMENT**

| | |
|---|---|
| Temperature : | 20±3ºC |
| Relative humidity: | 60% ~ 70% |
| Atmospheric pressure: | 860mbar to 1060mbar |

**Standard Test Fixture**

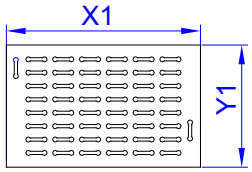
| | |
|---|---|
| Input Power: | 0.1W (0.89V) |
| Zero Level: | -dB |
| Mode: | TSR |
| potentiometer Range: | 50dB |
| Sweep Time: | 0.5sec |

**Microphone Distance:**

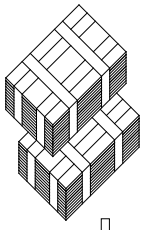
**X = 50 cm**

## PACKAGING

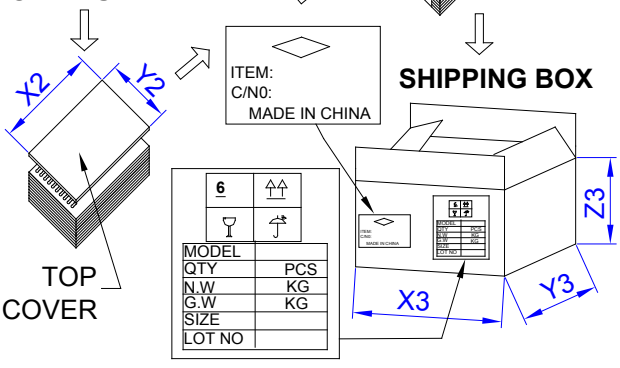
**ONE TRAY:**




**TWO BUNDLE**



**ONE BUNDLE:**




| MARKING | TRAY | | |
|---|---|---|---|
| **Bundle** | Dimensions | X1 | 34.8 cm |
| Customer PN | | Y1 | 28.8 cm |
| Other PN if required | Quantity | | 50 |
| Quantity | **BUNDLE** | | |
| Lot and/or Date Code | Dimensions | X2 | 29.5 cm |
| Bundle Number | | Y2 | 35 cm |
| **Shipping Box** | Quantity | | 500 |
| Customer Part Number | **SHIPPING BOX** | | |
| Other PN (if required) | Dimensions | X3 | 60 cm |
| Quantity | | Y3 | 37 cm |
| Lot and/or Date Code | | Z3 | 20.5 cm |
| PO Number | Number of Bundles | | 2 |
| Net Weight | Quantity | | 1,000 |
| Gross Weighjt | Approximate Weight | | |
| Box Number | | | |
| of Number of Boxes | | | |
| **Made in China** | | | |

| Revision | Description | By | Date |
|---|---|---|---|
| 1-2014 | Revised applied W from 0.25 W to 1.0 W for SPL measurement | Walter Sargent | 3/25/2014 |
| | | | |

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