**Challenge Electronics**
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**Tel: 1-800-722-8197**
**1-631-595-2217**
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# PRODUCT INFORMATION

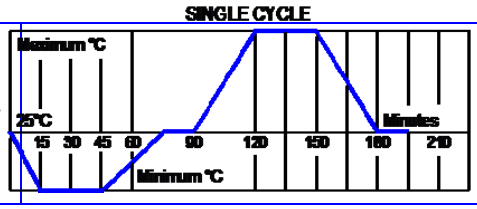
| **PART #** | **51410CE** | **Revision: 2-2012** |
|---|---|---|
| Lead Free RoHS COMPLIANCE | **5.25" SQUARE SPEAKER** | |

**DESCRIPTION:** **C**hallenge **E**lectronics **S**peaker, **134** mm Long, **S**quare shape, **134** mm Wide, **51** mm High, **KF** = 15 W maximum power, **8** Ohm, **F**e Steel Frame, **P**aper Cone, **N**dFeB Ferrite magnet, **121** Hz. (Fo) Resonant Frequency, **T**erminal Lugs Termination,

## SPECIFICATIONS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Shape** | **Square** | **Mounting** | **4 Holes, 10 mm Long, 5 mm Wide, 97.2 mm between holes Horizontal and Vertical** | | | | | | |
| **Impedance** | **8 Ω ± 15%, at: 1,000 Hz. 1.0 V** | **DC Resistance** | **7.2 Ω ± 15%** | **Rated Power** | **8.0 W** | **Maximum Power** | **15.0 W** | | |
| **Effective Frequency Band** | **100 Hz. to 18,000 Hz.** | | **Resonant Frequency (Fo)** | **121Hz. ± 20%, at 1.0 V** | | | | | |
| **Sound Pressure Level86** | **90.5 ± 3.0 dB(A), at: 1 W, 1.0 m, Average 400, 600, 800, 1,000, and 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)** | **134.0 mm** | **Width (W)** | **134.0 mm** | **Height (H)** | **51.0 mm** | | | |
| **Distortion** | **Less than 5% at 1,000 Hz. at 1.0 W.** | | | | | | | | |
| **Buzz & Rattle** | **Not be audible at 4 V sine wave between 20 Hz and 10,000 Hz.** | | | | | | | | |
| **Polarity** | **When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward** | | | | | | | | |
| **Material** | **Magnet** | **Y20 NdFeB Ferrite, OD 80 mm Ø, ID 40 mm Ø, H 12 mm** | **Flux Density** | **± 10% Gauss** | | | | | |
| | **Frame** | **Plated Steel** | **Cone Material** | **Paper** | | | | | |
| | **Termination** | **Terminal Lugs for wire leads soldering. (**Caution, overheating the terminal may damage connections of voice coil leads) | | | | | | | |
| | **Optional Gasket** | **Yes, OD 133 mm Ø, ID 120 mm Ø, H 2 mm, Plastic** | | | | | | | |
| **Speaker Parameters** | **Qts** | **1.288** | **Vas** | **7.041 m** | **Cms** | **549.449 u** | **M** | | **M/N** | | **BL** | **3.303 T** |
| **Approximate Weight** | **1,200 grams** | **Shielding** | **No** | **Compliance** | **Lead Free, RoHS** | | | | |
| **Options** | | | | | | | | | |

## RELIABILITY

| | |
|---|---|
| **Maximum Power Test** | With program White-Noise source **Maximum Power**, 1 minute on, 2 minutes off, **10 cycles**, per (EIA) * |
| **Thermal Operating Temperature Test** | **96 hours** continuous operation **at Rated Power**, at Maximum Rated Operating Temperature * |
| | **96 hours** continuous operation **at Rated Power**, at Minimum Rated Operating Temperature * |
| **Thermal Storage Temperature Test** | **96 hours** at Maximum Rated Storage Temperatures * |
| | **96 hours** at Minimum Rated Storage Temperatures * |
| **Thermal Shock Test** | **5 cycles** of **Minimum and Maximum Operating Temperature**. Each cycle shell be set per diagram below and is three (3) hours long *   |
| **Humidity Test** | 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 **100 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** | 15 minutes 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** | 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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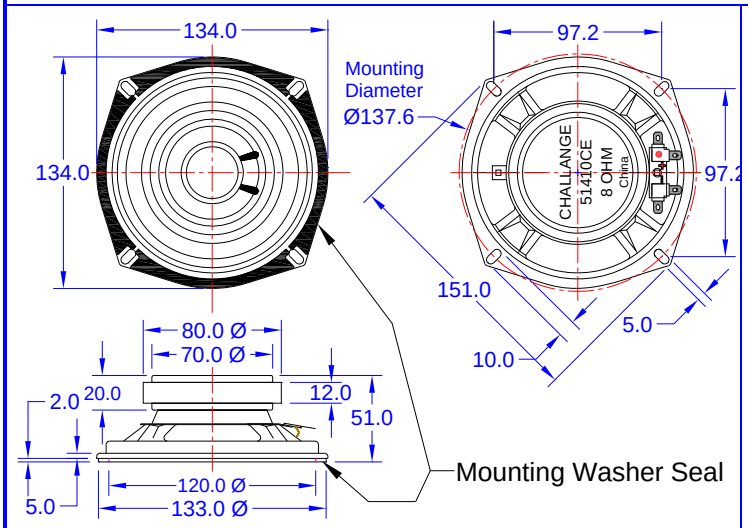
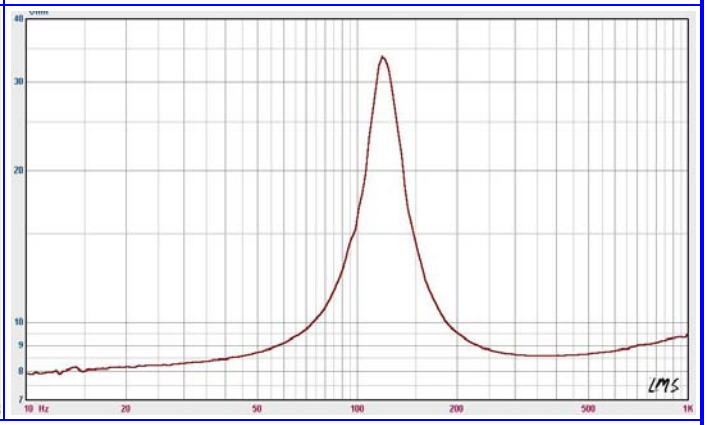
## DIMENSIONS

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

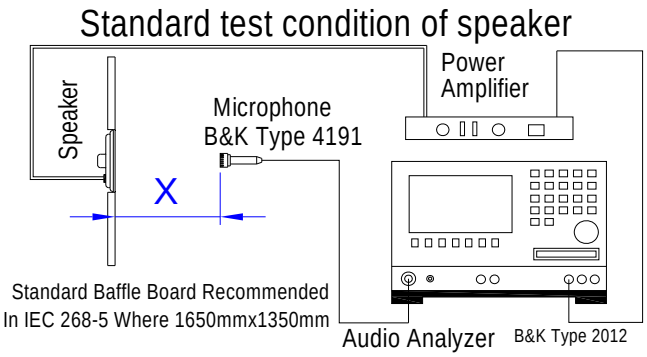



## SPL vs. FREQUENCY RESPONSE

## IMPEADANCE vs. FREQUENCY RESPONSE



## TEST PROCESS




### 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 = 100 cm**

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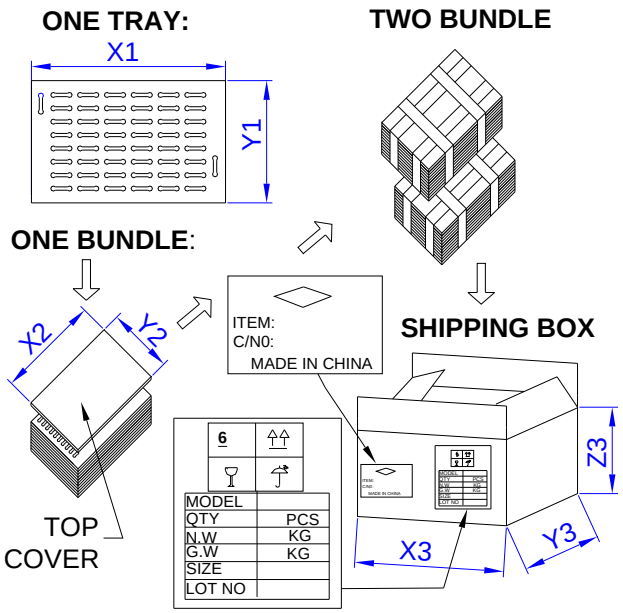
# PACKAGING




| MARKING | TRAY | | |
|---|---|---|---|
| **Bundle** | Dimensions | **X1** | **cm** |
| Customer PN | | **Y1** | **cm** |
| Other PN if required | | **Z1** | **cm** |
| Quantity | Quantity | | |
| Lot and/or Date Code | **BUNDLE** | | |
| Bundle Number | Dimensions | **X2** | **cm** |
| **Shipping Box** | | **Y2** | **cm** |
| Customer Part Number | | **Z2** | **cm** |
| Other PN (if required) | Quantity | | |
| Quantity | **SHIPPING BOX** | | |
| Lot and/or Date Code | Dimensions | **X3** | **cm** |
| PO Number | | **Y3** | **cm** |
| Net Weight | | **Z3** | **cm** |
| Gross Weighjt | Number of Bundles | | |
| Box Number | Quantity | | |
| of Number of Boxes | Approximate Weight | | |
| **Made in China** | | | |