



**Challenge Electronics**  
95 East Jefry Boulevard  
Deer Park, NY 11729

Tel: 1-800-722-8197  
1-631-595-2217  
Fax: 1-631-667-5484

EMAIL: SALES@CHALLELEC.COM  
WEB: WWW.CHALLENGEELECTRONICS.COM

## PRODUCT INFORMATION

PART #	CE-2808B36						Revision: 2-2013								
	<b>ROUND MICRO SPEAKER</b>														
<b>DESCRIPTION:</b> Challenge Electronics Speaker, 28.0 mm diameter, Round shape, 5.6 mm High, CA = 2.0 W maximum power, 8 Ohm, Fe Steel Plated Frame, Mylar Cone, NdFeB Ferrite magnet, 580 Hz. (Fo) Resonant Frequency, PCB Solder Points Termination, RoHS, Lead Free Compliant.															
<b>SPECIFICATIONS</b>															
Shape	Round	Mounting													
DC Impedance	<b>8 Ω ± 15%, at: 1,000 Hz. 1.0 V</b>			Rated Power	1.5 W	Maximum Power	2.0 W								
Effective Frequency Band	550 Hz. to 5,000 Hz.			Resonant Frequency (Fo)	<b>580 Hz. ± 20%, at 1.0 V</b>										
Sound Pressure Level	<b>92 ± 3.0 dB(A), at: 0.5 W, 10 cm, Average 800, 1,000, 1,200, and 1,500 (Hz), at 25°C, Baffle board (IEC)</b>														
Operating Temperature	<b>-20°C to + 60°C</b>			Storage Temperature			<b>-20°C to +70°C</b>								
Physical Dimensions	Length or Diameter (L /D)	28.0 mm Ø	Width (W)			Height (H)	<b>5.6 mm</b>								
Baffle Opening	Length or Diameter (L /D)	26.0 mm Ø	Width (W)			Minimum Opening Recessed	<b>2.0 mm</b>								
Mounting	Length or Diameter (L /D)		Width (W)			Holes size									
Distortion	Less than 5% at 1,000 Hz. at 0.1 W.														
Buzz & Rattle	Not be audible at 3.46 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	Neodymium Iron Boron, NdFeB Ferrite, 12.5 mm Ø X 2.0 mm t					Flux Density	<b>1,200 Gauss</b>							
	Frame	Steel, Zinc plated			Cone Material	<b>Mylar</b>									
	Termination	PCB with Solder Points													
	Optional Gasket	With ABS Gasket													
Speaker Parameters	Qms	Qes	Qts	Vas	Cms	M	M/N		BL						
Approximate Weight	grams	Shielding	None	Compliance	<b>Lead Free, RoHS</b>										
Options	Flange Mounting														
<b>RELIABILITY</b>															
Maximum Power Test	With program White-Noise source <b>Maximum Power, 1 minute on, 2 minutes off, 10 cycles, per (EIA) *</b>														
Thermal Operating Temperature Test	<b>96 hours continuous operation at Rated Power, at Maximum Rated Operating Temperature *</b>														
	<b>96 hours continuous operation at Rated Power, at Minimum Rated Operating Temperature *</b>														
Thermal Storage Temperature Test	<b>96 hours at Maximum Rated Storage Temperatures *</b>														
	<b>96 hours at Minimum Rated Storage Temperatures *</b>														
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 *														
Humidity Test	96 Hours at +40°C±2°C, 90-95% RH *														
Operation Life Test	Must perform normal with program White-Noise source at <b>Rated Power for 100 Hours</b> 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 *	<b>Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period.</b>														
Warranty	For a period of one (1) year from date of shipping under normal operations conditions														

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.

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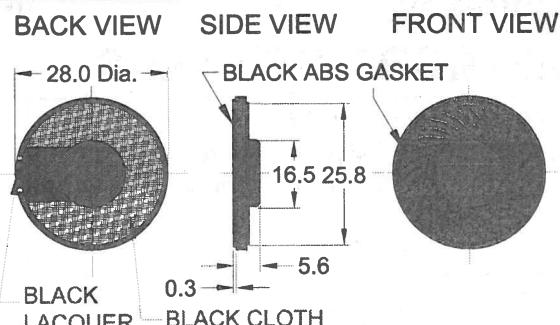
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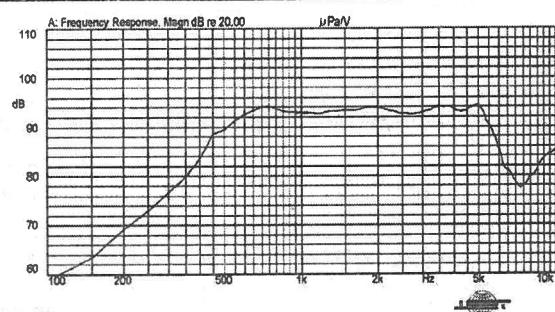
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## DIMENSIONS

Units in: mm, Tolerance:  $\pm 0.3$  mm unless specified otherwise.

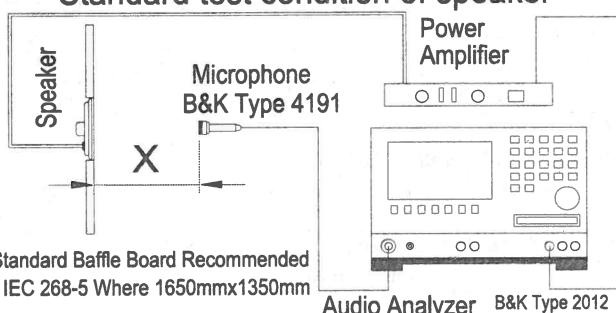


## SPL vs. FREQUENCY RESPONSE



## TEST PROCESS

### Standard test condition of speaker



### Test Condition

#### STANDARD

Temperature: 15 ~ 35°C  
Relative humidity: 45% ~ 85%  
Atmospheric pressure: 860 mbar to 1060mbar

#### JUDGEMENT

Temperature: 20 $\pm$ 3°C  
Relative humidity: 60% ~ 70%  
Atmospheric pressure: 860mbar to 1060mbar

### Standard Test Fixture

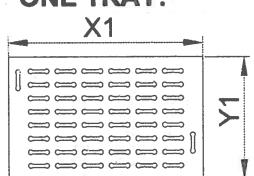
Input Power: 0.1W (3.46)  
Zero Level: -dB  
Mode: TSR  
potentiometer Range: 50dB  
Sweep Time: 0.5sec

### Microphone Distance:

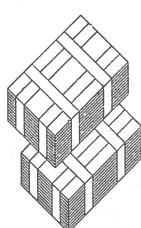
X = 0.1 m

## PACKAGING

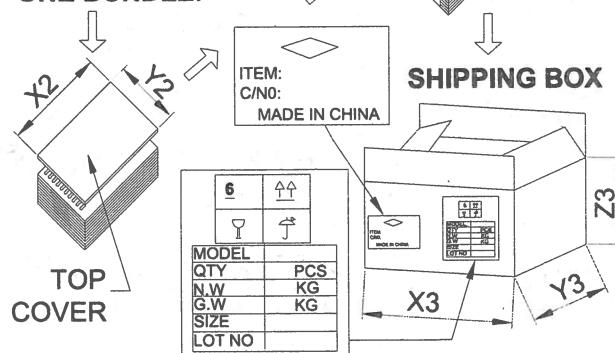
### ONE TRAY:



### TWO BUNDLE



### ONE BUNDLE:



### MARKING

### TRAY

#### Bundle

X1 cm

#### Customer PN

Y1 cm

#### Other PN if required

Z1 cm

#### Quantity

Quantity

#### Lot and/or Date Code

### BUNDLE

#### Bundle Number

X2 cm

#### Shipping Box

Y2 cm

#### Customer Part Number

Z2 cm

#### Other PN (if required)

Quantity

#### Quantity

### SHIPPING BOX

#### Lot and/or Date Code

X3 cm

#### PO Number

Y3 cm

#### Net Weight

Z3 cm

#### Gross Weight

Number of Bundles

#### Box Number

Quantity

#### of Number of Boxes

Approximate Weight

#### Made in China

Revision	Description	By	Date
2-2013	Corrected diameter in Description	W.Sargent	10/28/2013

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