



PRODUCT INFORMATION

PART #	CES570R130AD45SMN600STR	Revision: 2-2013
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ROUND SPEAKER

DESCRIPTION: Challenge Electronics Speaker, 57.0 mm Diameter, Round shape, 13.0 mm High, AD= 0.3 W maximum power, 45 Ohm, Steel Plated I frame, Mylar Cone, NdFeB magnet, 600 Hz. (Fo) Resonant Frequency, Shield, T=solder tabs connection, RoHS Lead Free Compliant

SPECIFICATIONS

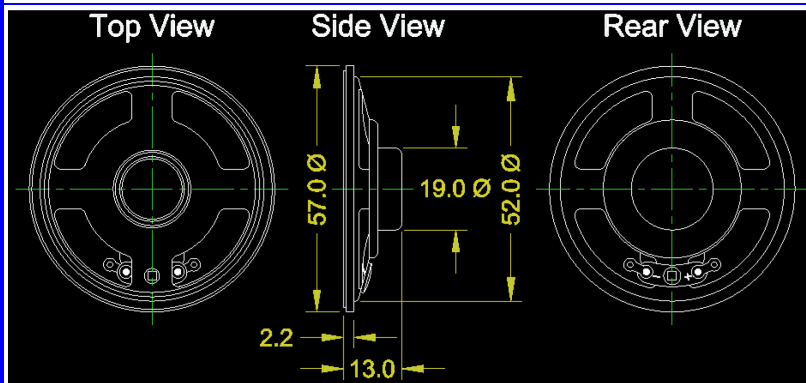
Shape	Round	Impedance	45 Ω ± 15%, at 1,000 Hz, 1.0 V	DC Resistance				
Rated Power:	Sine Wave 0.2 W	Square Wave	Maximum Power:	Sine Wave 0.3 W	Square Wave			
Effective Frequency Band	600 Hz. to 5,000 Hz.		Resonant Frequency (Fo):	600 Hz. ±20%, at 1.0 V				
Sound Pressure Level	93 ± 3.0 dB (A), at 0.1 W, 0.1 m, Average 800, 1,000, 1,200, 1,500 (Hz.), at 25°C, Baffle board (IEC)							
Operating Temperature	-20°C to + 60°C		Storage Temperature	-30°C to +70°C				
Physical Dimensions	Length or Diameter (L /D)	57.0 mm	Width (W)	Height (H)	13.0 mm			
Baffle Opening	Length or Diameter (L /D)	mm Ø	Width (W)	Minimum Opening Recessed	2.0 mm			
Mounting	Length or Diameter (L /D)		Width (W)	Holes size	No. Holes			
Distortion	Less than 5% at 1,000 Hz. at 0.2 W							
Buzz & Rattle	Not be audible at 3 V sine wave between 600 Hz and 5,000 Hz.							
Polarity	When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward							
Material	Magnet	NdFeB, 12.5 mm Ø X 2.0 mm t			Flux Density:	T		
	Housing	Plated Steel			Cone Material	Mylar		
	Termination	Solder tabs (Caution, overheating the terminal may damage connections of voice coil leads)						
	Optional Gasket							
Speaker Parameters	Qms	Qes	Qts	Vas	Cms	M	M/N	BL
Approximate Weight	20 grams		Shielding	Yes	Compliance	Lead Free, RoHS		
Options								

RELIABILITY

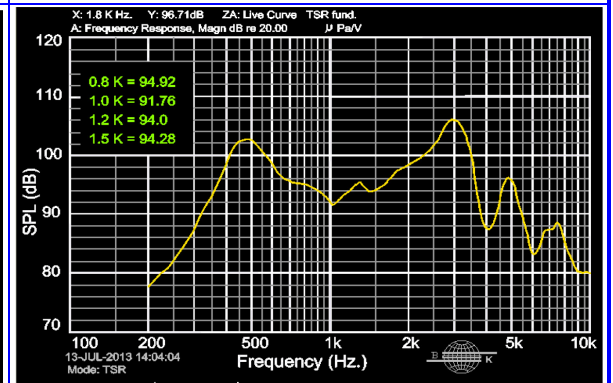
Max. Power Test	With program White-Noise source Maximum Power , 1 minute on, 2 minutes off, 10 cycles, per (EIA) *
Thermal Operating Temperature Test	50 hours continuous operation at Rated Power , at Maximum Rated Operating Temperature *
	50 hours continuous operation at Rated Power , at Minimum Rated Operating Temperature *
Thermal Storage Temperature Test	96 hours storage at Maximum Rated Storage Temperatures *
	96 hours storage at Minimum Rated Storage Temperatures *
Thermal Shock Test	<p>5 cycles of Minimum and Maximum Operating Temperature Each cycle shall be set per diagram below and is three (3) hours long *</p>
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 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	Parts in Shipping Container are subjected to 15 minutes of at 0.75 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	Parts in Shipping Container are subjected to dropped naturally from 70cm height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 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 This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair



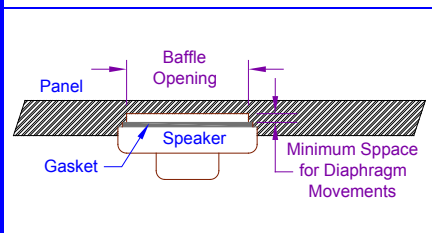
DIMENSIONS Units in: mm, Tolerance: ± 0.5 mm unless specified otherwise



SPL vs. FREQUENCY RESPONSE



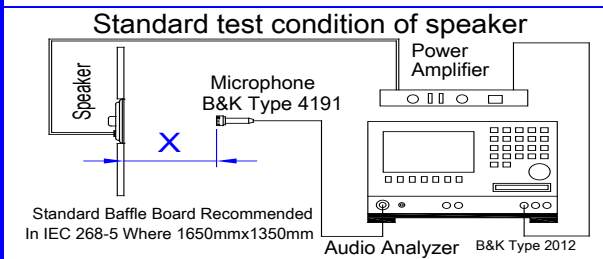
MOUNTING PRECAUTION



In order to keep speaker working normally, there allow enough free space for diaphragm movements, Minimum distance required is marked in page # 1 under Baffle Opening.

IMPEDANCE vs. FREQUENCY RESPONSE

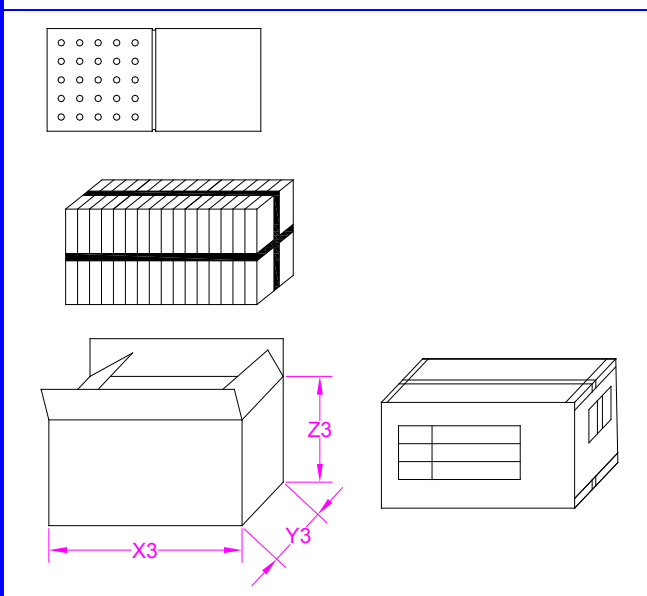
TEST PROCESS



Test Condition	
STANDARD	
Temperature:	15 ~ 35°C
Relative humidity:	45% ~ 85%
Atmospheric pressure:	860 mbar to 1060mbar
JUDGEMENT	
Temperature :	20±3°C
Relative humidity:	60% ~ 70%
Atmospheric pressure:	860mbar to 1060 mbar

Standard Test Fixture	
Zero Level:	-dB
Mode:	TSR
potentiometer Range:	50 dB
Sweep Time:	0.5 sec
Input Power:	
0.1 W	
Microphone Distance:	
X = 10 cm	

PACKAGING



MARKING		TRAY	
Bundle		X1	cm
Part Number	Dimensions	Y1	cm
Other PN if required			
Quantity	Quantity	25	
Lot and/or Date Code	BUNDLE		
Bundle Number	Dimensions	X2	cm
Shipping Box		Y2	cm
Part Number			
Customer PN (if required)	Quantity	400	
Quantity	SHIPPING BOX		
Lot and/or Date Code	Dimensions	X3	32 cm
PO Number		Y3	30.5 cm
Net Weight		Z3	31.5 cm
Gross Weighjt	Number of Bundles	1	
Box Number of Boxes	Quantity	400	
Made in China	Approximate Weight		

Revision	Description	By	Date
1-2013	Modified Frequency Response curve and dimensions tolerance	Ely Zofan	7/16/2013
2-2013	Replaced Mechanical Drawing (Dimensions) and SPL vs. Freq. Response	W. Sargent	7/17/2013