Challenge Electronics
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PRODUCT INFORMATION

PART # CES150R035F8SMN900UR **Revision: 0-2012**

Lead Free RoHS COMPLIANCE

ROUND SPEAKER

DESCRIPTION: Challenge Electronics Speaker, 15.0 mm Diameter, Round shape, 3.5 mm High, AF = 0.5 W maximum power, 8 Ohm, Plated Steel Frame, Mylar, NdFeB Ferrite magnet, 900 Hz. (Fo) Resonant Frequency, U Solder Points Termination, RoHS Lead Free Compliant

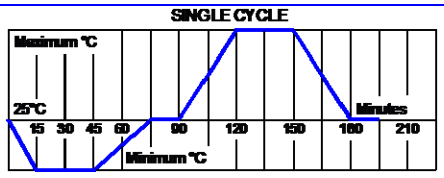
SPECIFICATIONS

Shape	Round		**Impedance**	8 Ω ± 15%, at 2000 Hz, 1.0 V			**DC Resistance**				
Rated Power	**Sine Wave**	0.3 W	**Square Wave**	W		**Maximum Power**	**Sine Wave**	0.5 W	**Square Wave**		
Effective Frequency Band	900 Hz. to 20,000 Hz.					**Resonant Frequency (Fo)**	900 Hz. ±20%, at 1.0 V				
Sound Pressure Level	84 ± 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	-20ºC to + 60ºC			**Storage Temperature**	-30ºC to +60ºC						
Physical Dimensions	**Length or Diameter (L /D)**	15.0mm	**Width (W)**	mm			**Height (H)**	3.5 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**		**Holes**				
Distortion	Less than 5% at 1,000 Hz. at 0.3 W.										
Buzz & Rattle	Not be audible at 1.55 V sine wave between 200Hz and 2,000 Hz.										
Polarity	When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward.										

Material	**Magnet**	Ferrite, NdFeB, 6.5 mm Ø, 0.8 mm t	**Flux Density**	T
	Frame	Plated Steel Frame	**Cone Material**	Mylar
	Termination	PCB Solder Points. (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	2 grams		**Shielding**	No		**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	**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	Parts in Shipping Container are subjected to 15minutes 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 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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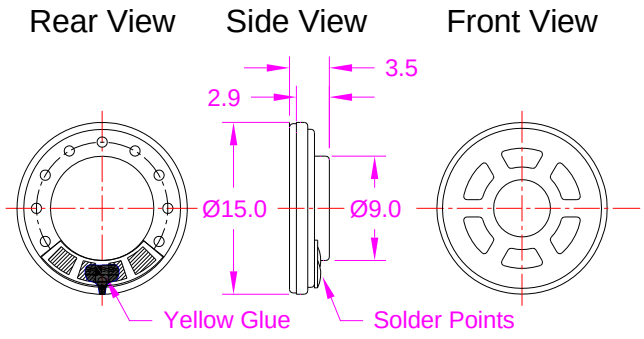
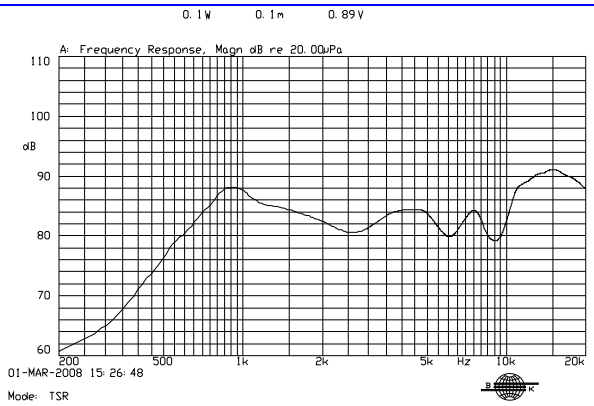
DIMENSIONS

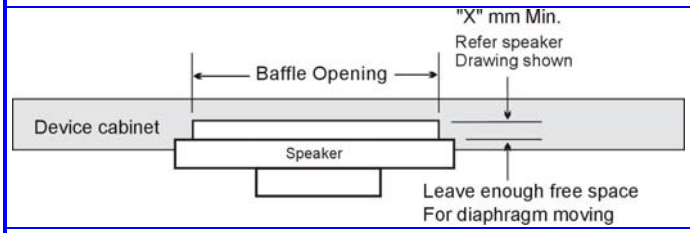
Units in: mm, Tolerance: ± 0.3mm unless specified otherwise.



SPL vs. FREQUENCY RESPONSE



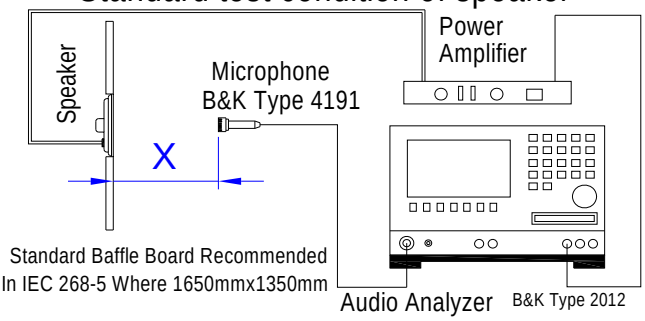
MOUNTING PRECAUTION



In order to keep speaker work normally, there shall leave enough free space for diaphragm moving, minimum distance required is marked in speaker mechanical drawing.

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

Zero Level:	-dB
Mode:	TSR
potentiometer Range:	50dB
Sweep Time:	0.5sec

Input Power:
0.1W (0.89V)

Microphone Distance:
X = 10 cm

PACKAGING

TBD

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