

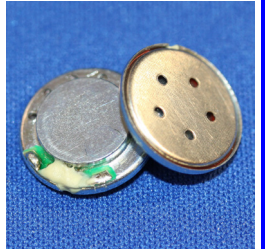


PRODUCT INFORMATION

PART #	CES130R028AC8SMN1100UR	Revision: 2-2013
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	ROUND SPEAKER
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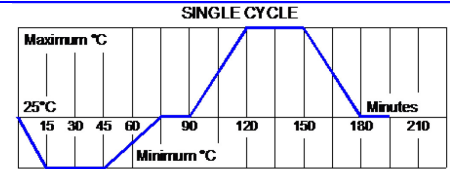
DESCRIPTION: Challenge Electronics Speaker, 13.0 mm Diameter, Round shape, 2.8 mm High, AC = 0.3 W maximum power, 8 Ohm, Plated Steel Frame, Mylar, NdFeB Ferrite magnet, 1,100 Hz. (Fo) Resonant Frequency, U Solder Points Termination, RoHS Lead Free Compliant



SPECIFICATIONS

Shape	Round	Impedance	8 Ω ± 15%, at 2,000 Hz, 1.0 V			DC Resistance										
Rated Power	Sine Wave	0.2 W	Square Wave	W	Maximum Power	Sine Wave	0.3 W	Square Wave								
Effective Frequency Band	700 Hz. to 5,000 Hz.			Resonant Frequency (Fo)		1,100 Hz. ± 20%, at 1.0 V										
Sound Pressure Level	85 ± 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 +60°C									
Physical Dimensions	Length or Diameter (L /D)	13.0mm	Width (W)	mm	Height (H)	2.8 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 0.2 W.															
Buzz & Rattle	Not be audible at 1.55 V sine wave between 700Hz 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	Ferrite, NdFeB, 6.5 mm Dia. X 1.0 mm high					Flux Density	T								
	Frame	Plated Steel Frame			Cone Material	Clear 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	0.8 grams		Shielding	No		Compliance	Lead Free, RoHS									

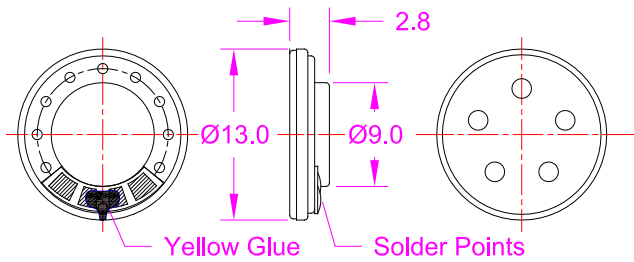
RELIABILITY

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	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</p> <p>Each cycle shall be set per diagram below and is three (3) hours long *</p> 
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

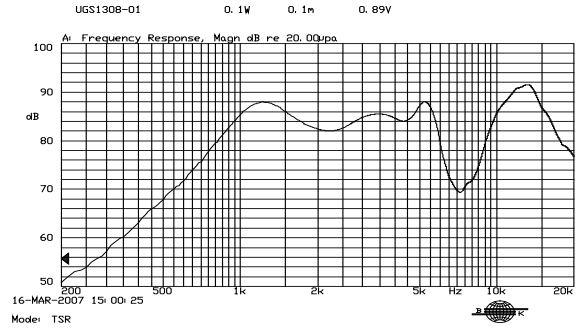
DIMENSIONS

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

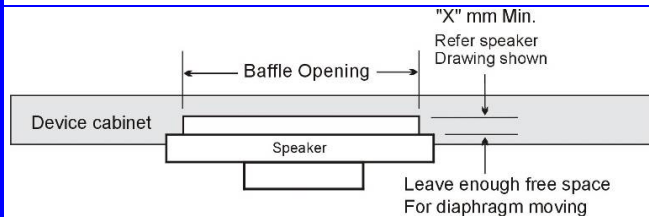
Rear View Side View Front View



SPL vs. FREQUENCY RESPONSE



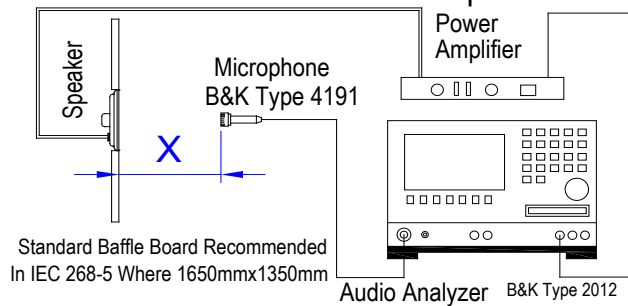
MOUNTING PRECAUTION



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



Standard Baffle Board Recommended
 In IEC 268-5 Where 1650mmx1350mm

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 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

	MARKING		TRAY		
	Bundle		Dimensions	X1	42 cm
	Customer PN			Y1	27 cm
	Other PN if required				
	Quantity		Quantity		200
	Lot and/or Date Code		BUNDLE		
	Bundle Number		Dimensions	X2	42 cm
	Shipping Box			Y2	27 cm
	Customer Part Number			Z2	13 cm
	Other PN (if required)		Quantity		2,000
	Quantity		SHIPPING BOX		
	Lot and/or Date Code		Dimensions	X3	43 cm
	PO Number			Y3	28 cm
	Net Weight			Z3	26.5 cm
Gross Weighjt		Number of Bundles			
Box Number		Quantity		4,000	
of Number of Boxes		Approximate Weight			
Made in China					

Revision	Description	By	Date
1-2013			
2-2013	Added product photo	Walter Sargent	7/25/2013