



PRODUCT INFORMATION

PART #	CES100R028AE8SMN1200SR	Revision: 2-2015
	Low Profile Dynamic Speaker	
DESCRIPTION: Challenge Electronics Speaker; 10.0 mm Diameter; Round shape; 2.8 mm High; AE = 0.5 W maximum power; 8 Ohm; Steel Plated Frame; Mylar PET Cone; NdFeB Ferrite magnet; 1,200 Hz. (Fo) Resonant Frequency; Solder Points Termination; RoHS Lead Free and REACH Compliant		

SPECIFICATIONS

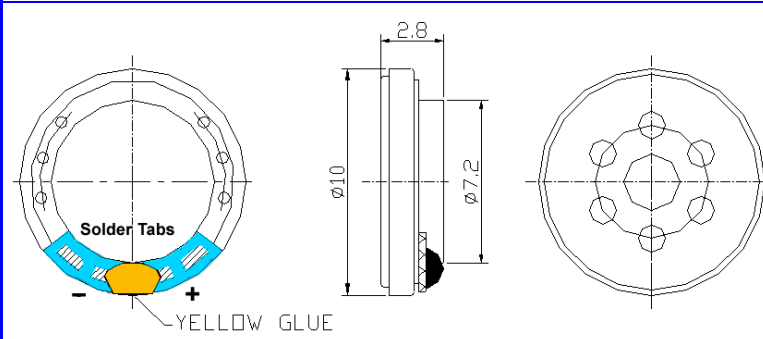
Shape	Round	Impedance	8 Ω ± 15%, at 2,000 Hz. 1 V		DC Resistance				
Rated Power	Sine Wave 0.3 W	Square Wave	W	Maximum Power	Sine Wave 0.5 W	Square Wave			
Effective Frequency Band	1,200 Hz. to 6,000 Hz.		Resonant Frequency (Fo)		1,200 Hz. ± 20%, at 1 V				
Sound Pressure Level	86 ± 3.0 dB (A), at 0.3W/0.1m, at 1000Hz, 1200Hz, 1500, 2000 (Hz.), at 25°C, Baffle board (IEC)								
Operating Temperature	-20° C to +60° C		Storage Temperature	-20° C to +60° C					
Physical Dimensions	Diameter (D)	10.0 mm Ø			Height (H)	2.8 mm			
Baffle Opening	Diameter (D)	7.0 mm Ø		Width (W)	Minimum Opening Recessed	2.0 mm			
Mounting									
Distortion	Less than 5% at 1,000 Hz. at 1.0 V								
Buzz & Rattle	Not be audible at 2 V sine wave between 500 Hz and 6,000 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, OD 5.5 mm Ø X 0.8 mm High				Flux Density	T		
	Frame	SPCC Plated Steel			Cone Material	Mylar PET			
	Termination	Solder Points, 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	0.8 grams		Shielding	No	Compliance	Lead Free, RoHS and REACH			
Options									

RELIABILITY

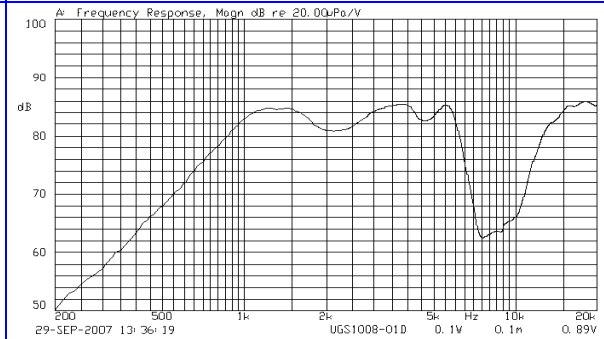
Maximum Power Test	With program White-Noise source Maximum Power , 1 minute on, 2 minutes off, 10 cycles, per (EIA) *
Thermal Operating Temperature Test	96 hours continuous operation at Rated Power , at Maximum Rated Operating Temperature *
	96 hours continuous operation at Rated Power , at Minimum Rated Operating Temperature *
Thermal Storage Temperature Test	96 hours 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 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 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 (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: ± 0.3mm unless noted otherwise



SPL vs. FREQUENCY RESPONSE



CONSTRUCTION DETAIL

ITEM	PART NAME	QTY	MATERIAL	MEET STDs
1	Frame	1	SPCC	GU-001
2	Diaphragm	1	PET	GU-001
3	Voice coil	1	Self-bonding wire	GU-001
4	Plate	1	SPCC	GU-001
5	Magnet	1	NdFeB	GU-001
6	PCB	1	FR4	GU-001
7	Front cover	1	SUS	GU-001

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 1060 mbar

JUDGEMENT
 Temperature: 20±3°C
 Relative humidity: 60% ~ 70%
 Atmospheric pressure: 860 mbar 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

SUBSTANCE OF VERY HIGH CONCERN (SVHC)

This product does NOT contain any of the REACH Substances of Very High Concern (SVHC), and is in compliance with European Union REACH Regulation No.1907/2006 regarding chemical substances which must be registered or disclosed.

PACKAGING

Shipping Box MARKING		Tray	
Part Number	Dimensions	X1	26.5 cm
Other PN if required		Y1	42 cm
Quantity		Z1	
Lot or Date Code	Quantity	100	
PO Number	SHIPPING BOX		
Net Weight	Dimensions	X3	28 cm
Gross Weight		Y3	43 cm
Box Number of Boxes		Z3	28 cm
Made in China	Number of Bundles	2	
	Quantity	2,000	
	Approximate Weight		

Revision	Description	By	Date
1-2014	Add Product Photo	W. Sargent	2014-OCT-27
2-2015	Updated SPL measurement condition	W. Sargent	2015-JAN-22