



PRODUCT INFORMATION

PART #	CES180R033AE32SMN1000UR	Revision: 1-2016
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Round Speaker



DESCRIPTION: Challenge Electronics Speaker; 18.0 mm Diameter; Round shape; 3.3 mm High; AE = 0.5 W maximum power; 32 Ohm; Steel Plated Frame; Mylar Cone; NdFeB Ferrite magnet; 1,000 Hz. (Fo) Resonant Frequency; PCB Solder Point Termination (U); RoHS Lead Free Compliant

SPECIFICATIONS

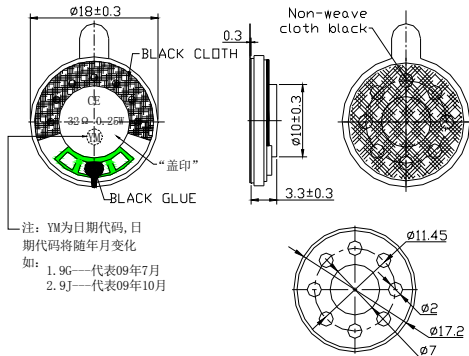
Shape	Round	Impedance	32 Ω ± 15%, at 2,000 Hz., 1.0 V	DC Resistance				
Rated Power	Sine Wave 0.25 W	Square Wave	W	Maximum Power	Sine Wave 0.5 W			
Effective Frequency Band	Fo to 5,000 Hz.		Resonant Frequency (Fo)	1,000 Hz. ± 20%				
Sound Pressure Level	86 ± 3.0 dB (A), at 0.1 W, 0.1 m, Average 800,1,000, 1,200, 1,500 (Hz), at 25°C, Baffle board (I EC)							
Operating Temperature	-30°C to + 85°C.		Storage Temperature	-30°C to + 85°C.				
Physical Dimensions	Diameter (D)	18.0 mm Ø		Height (H)	3.3 mm			
Baffle Opening	Diameter (D)			Minimum Opening Recessed	3 mm			
Mounting								
Distortion	Less than 5% at 1,000 Hz. at 0.25 V							
Buzz & Rattle	Not be audible at 2.93 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	NdFeB, 7.8mm Dia. X 1.0mm high			Flux Density	0.6T		
	Frame	Plated steel			Cone Material	Mylar		
	Termination	PCB Solder Points						
	Grill	Metal						
Speaker Parameters	Qms	Qes	Qts	Vas	Cms	M	M/N	BL
Approximate Weight	1.4 grams		Shielding	No	Compliance	Lead Free, RoHS and REACH		
Options								

RELIABILITY

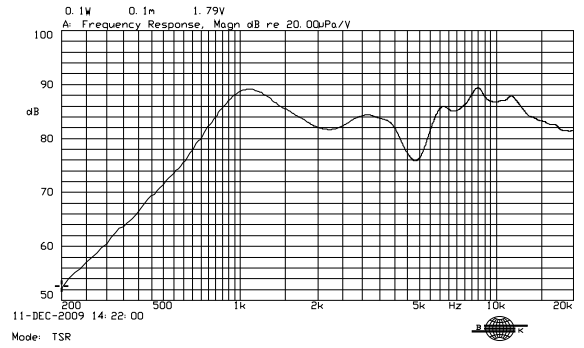
Maximum Power Test	With program White-Noise source Maximum Power , 1 minute on, 2 minutes off, 10 cycles, per (EIA) *
Thermal Operating Temperature Test	96 hours continuous operation at Rated Power , at Maximum Rated Operating Temperature *
	96 hours continuous operation at Rated Power , at Minimum Rated 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 *
	<p>The graph shows a temperature cycle starting at 25°C, rising to 120°C over 90 minutes, staying at 120°C for 30 minutes, falling back to 25°C over 30 minutes, and staying at 25°C for 60 minutes. The total cycle time is 210 minutes.</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 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



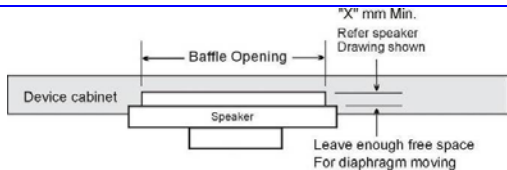
DIMENSIONS Units in: mm, Tolerance: ± 0.3mm unless specified otherwise



SPL vs. FREQUENCY RESPONSE

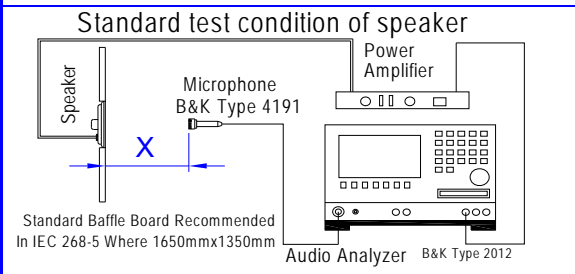


MOUNTING PRECAUTION



The speaker must be mounted so that the diaphragm can move freely without mechanical interference from the baffle, enclosure or other parts. The required clearance (if specified) will be given in the mechanical drawing and/or detailed specifications above.

TEST PROCESS



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

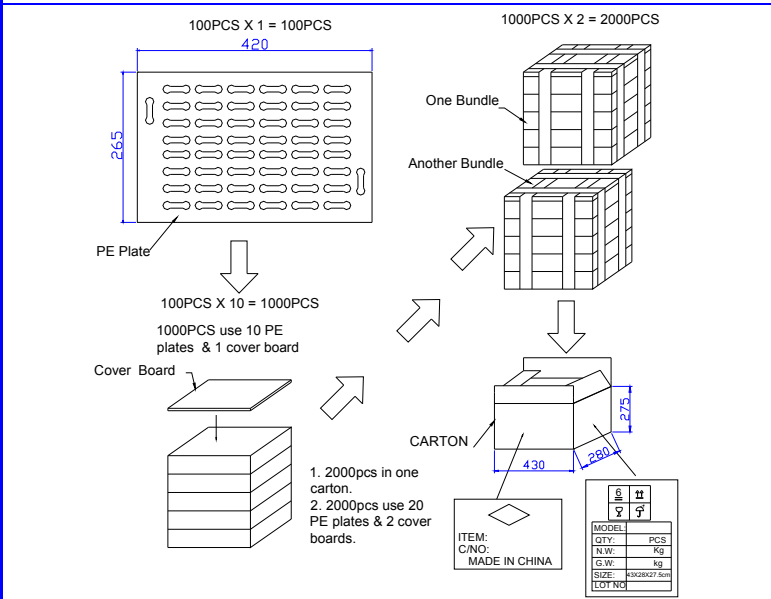
Input Power:
0.1 W

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



MARKING		TRAY	
Bundle	Dimensions	X1	42 cm
Part Number		Y1	26.5 cm
Other PN if required		Z1	cm
Quantity	Quantity	100	
Lot and/or Date Code	BUNDLE		
Bundle Number	Dimensions	X2	cm
Shipping Box		Y2	cm
Part Number		Z2	cm
Other PN (if required)	Quantity	1,000	
Quantity	SHIPPING BOX		
Lot and/or Date Code	Dimensions	X3	43 cm
PO Number		Y3	28 cm
Net Weight		Z3	27.5 cm
Gross Weight	Number of Bundles	2	
Box Number of Boxes	Quantity	2,000	
Made in China	Approximate Weight		

Revision	Description	By	Date
1-2016	Change impedance measurement condition from 1kHz to 2kHz	WS	2016-11-02