

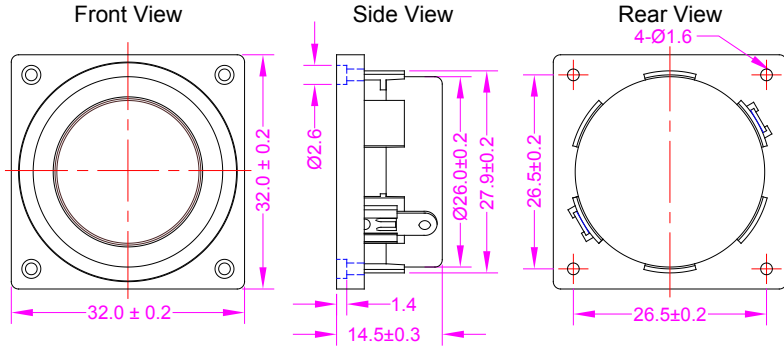


PRODUCT INFORMATION

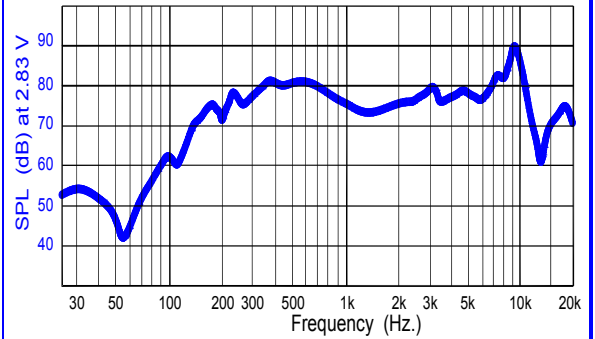
PART #	CES320S145EA8PBR250T							Revision: 2-2013							
	SQUARE SPEAKER														
DESCRIPTION: Challenge Electronics Speaker; 32.0 mm Long; Square shape; 32.0 mm Wide, 14.5 mm High; EA= 4 W maximum power; Impedance 8 Ohm ; Plastic Frame; B Poly Foam Cone; Rare Earth magnet; 250 Hz. (Fo) Resonant Frequency; Solder T erminal Lugs Termination; R oHS Lead Free Compliant															
SPECIFICATIONS															
Shape	Square		Impedance	8 Ω ± 15%, at: 1,000 Hz. 1.0 V			DC Resistance								
Rated Power	Sine Wave	2 W	Square Wave	W	Maximum Power	Sine Wave	4 W	Square Wave	W						
Effective Frequency Band	140 Hz. to 20,000 Hz. SPL within 10 dB Average				Resonant Frequency (Fo)	250 Hz. ± 20%, at 1.0 V									
Sound Pressure Level ₈₆	80 ± 3.0 dB(A), at: 1.0 W, 1.0 m, Average 400, 500, 600, 800 Hz, at 25°C, Baffle board (IEC)														
Operating Temperature	-25°C to + 60°C		Storage Temperature	-40°C to +70°C											
Physical Dimensions	Length or Diameter (L /D)		32.0 mm	Width (W)	32.0 mm	Height (H)	14.5 mm								
Baffle Opening	Diameter (D)		30.0 mm ø	Width (W)	Minimum Opening Recessed			3 mm							
Mounting	Length or Diameter (L /D)		26.5 mm	Width (W)	26.5 mm	Mounting Holes	4	Holes size	1.6 mm ø						
Distortion	Less than 5% at 1,000 Hz. at 1.0 W.														
Buzz & Rattle	Not be audible at 4 V sine wave between Fo to 20,000 Hz.														
Polarity	When a positive DC Current is applied to the voice coil terminal marked + or red, the diaphragm shall move forward														
Material	Magnet	Rare Earth, NdFeB, OD 18.7 mm, H 4.0 mm				Flux Density	± 10% Gauss								
	Frame	Plastic, ABS			Cone Material	Poly Foam									
	Termination	Terminal Lugs for wire leads soldering. (Caution, overheating the terminal may damage connections of voice coil leads)													
	Optional Gasket														
Speaker Parameters	Qms		Qes		Qts		Vas		Mmd		M		M/N		BL
Approximate Weight	28 grams		Shielding	No		Compliance	RoHS Lead Free								
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 at Maximum Rated Storage Temperatures *														
	96 hours 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	15 minutes at 1.5 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	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														



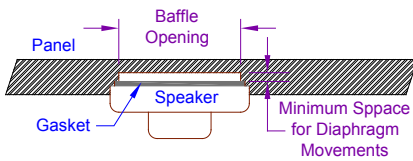
DIMENSIONS Units in: mm; Tolerance: ± 0.5 mm unless specified otherwise



SPL vs. FREQUENCY RESPONSE



MOUNTING PRECAUTION

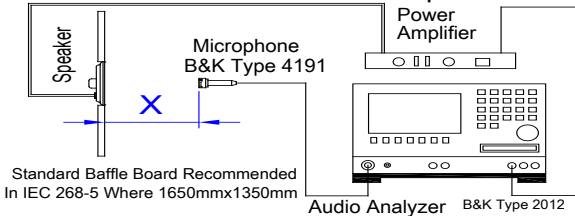


In order to keep speaker working normally, there allow enough free space for diaphragm movements, Minimum distance required is marked in page # 1 under Baffle Opening.

IMPEDANCE vs. FREQUENCY RESPONSE

TEST PROCESS

Standard test condition of speaker



Test Condition

STANDARD
 Temperature: 15 ~ 35°C
 Relative humidity: 45% ~ 85%
 Atmospheric pressure: 860 mbar to 1060 mbar

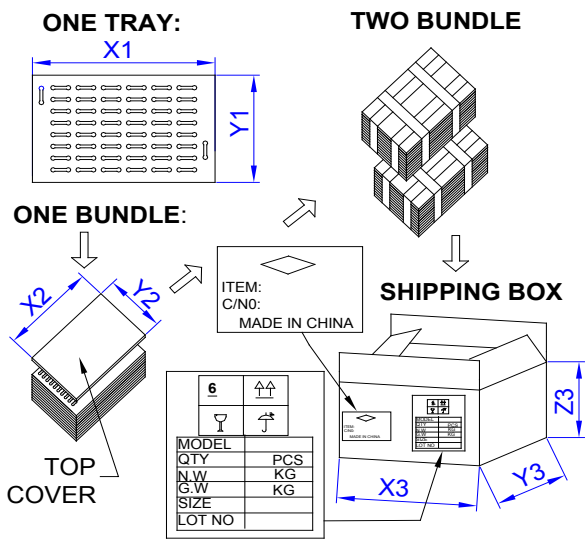
JUDGEMENT
 Temperature: 20±3°C
 Relative humidity: 60% ~ 70%
 Atmospheric pressure: 860mbar to 1060 mbar

Standard Test Fixture

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

Input Power: 1.0 W
Microphone Distance: X = 100 cm

PACKAGING



MARKING		TRAY	
Bundle		X1	cm
Part Number	Dimensions	Y1	cm
Other PN if required		Z1	cm
Quantity		Quantity	
Lot and/or Date Code	BUNDLE		
Bundle Number	Dimensions	X2	cm
Shipping Box		Y2	cm
Part Number		Z2	cm
Other PN (if required)	Quantity		
Quantity	SHIPPING BOX		
Lot and/or Date Code	Dimensions	X3	39.5 cm
PO Number		Y3	35.1 cm
Net Weight		Z3	32 cm
Gross Weighjt	Number of Bundles		
Box Number of Boxes	Quantity		400
Made in China	Approximate Weight		12 Kg.

Revision	Description	By	Date
1-2013	Updated Frame and Cone Materials	Ely Zofan	7/22/2013
2-2013	Added product photo	Walter Sargent	7/25/2013