



# PRODUCT INFORMATION

<b>PART #</b>	<b>CES500R190AE8SMN550TR</b>	<b>Revision: 1-2014</b>
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## ROUND SPEAKER

**DESCRIPTION:** Challenge Electronics Speaker; 50.0 mm Diameter; Round shape; 19.0 mm High; AE= 0.4 W maximum power; 8 Ohm, Zinc-Plated Steel frame; Transparent Mylar Cone; NdFeB magnet; 550 Hz. (Fo) Resonant Frequency; Solder Tabs connection; Waterproof; RoHS Lead Free Compliant

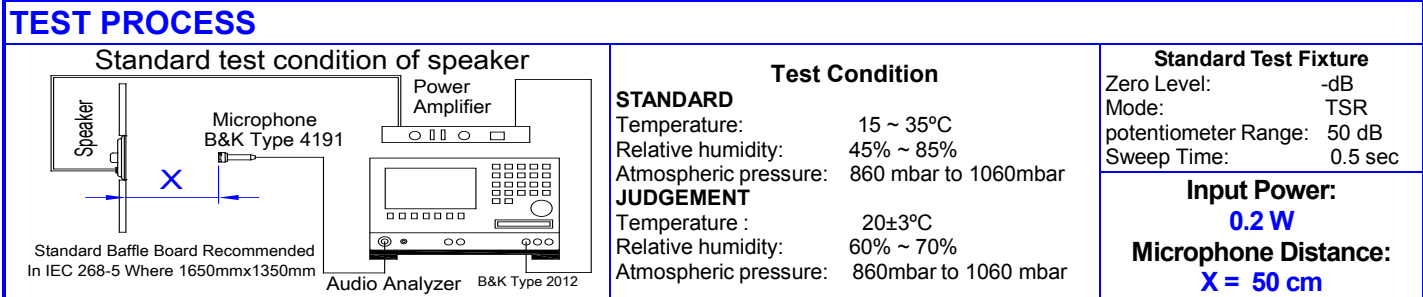
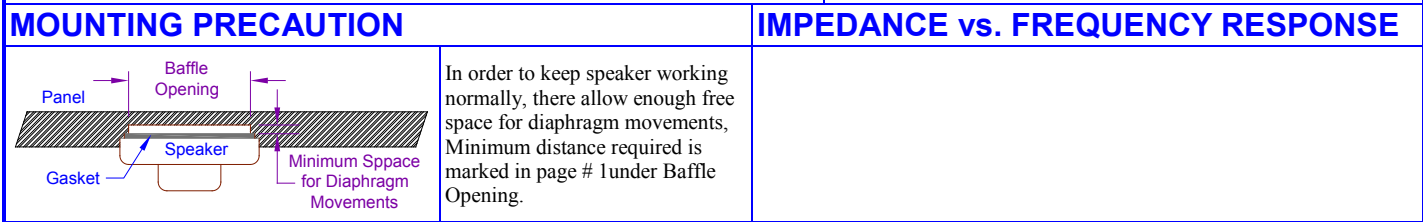
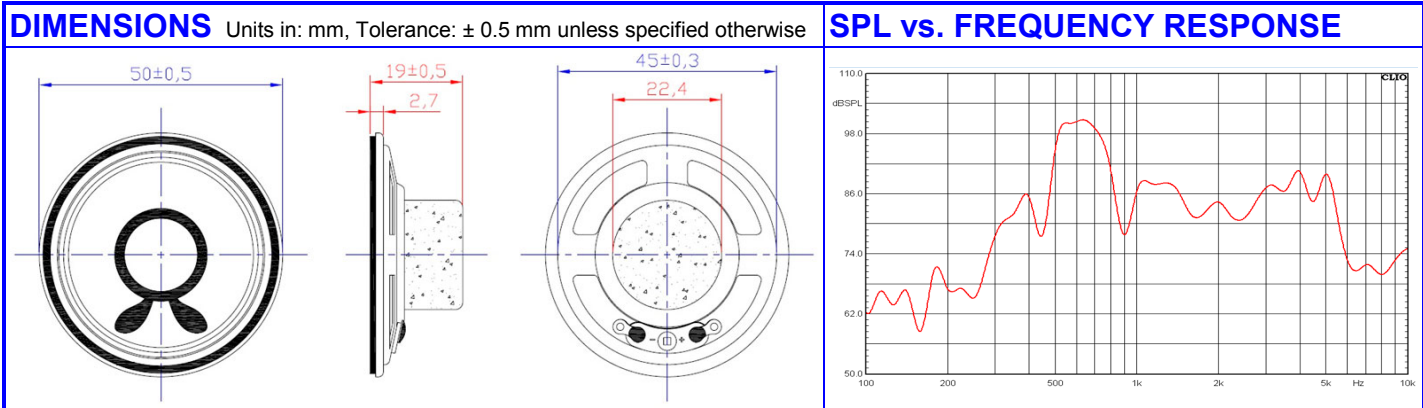


### SPECIFICATIONS

<b>Shape</b>	Round		<b>Impedance</b>	8 Ω ± 15%, at 1,000 Hz, 1.0 V			<b>DC Resistance</b>				
<b>Rated Power:</b>	Sine Wave	0.2 W	Square Wave	Maximum Power:			Sine Wave	0.4 W	Square Wave		
<b>Effective Frequency Band</b>	550 Hz. to 5,500 Hz.			Resonant Frequency (Fo):			550 Hz. ±110Hz, at 1.0 V				
<b>Sound Pressure Level</b>	80 ± 3.0 dB (A), at 1.0 W, 0.5 m, Average 800, 1,000, 1,200, 1,500 (Hz.), at 25°C, Baffle board (IEC)										
<b>Operating Temperature</b>	-20°C to + 60°C		Storage Temperature		-30°C to +70°C						
<b>Physical Dimensions</b>	Length or Diameter (L /D)		50.0 mm	Width (W)		Height (H)		19.0 mm			
<b>Baffle Opening</b>	Length or Diameter (L /D)		mm ∅	Width (W)		Minimum Opening Recessed		mm			
<b>Mounting</b>	Length or Diameter (L /D)		Width (W)		Holes size		No. Holes				
<b>Distortion</b>	Less than 5% at 1,000 Hz. at 0.2 W										
<b>Buzz &amp; Rattle</b>	Not be audible at 3 V sine wave between 550 Hz and 5,500 Hz.										
<b>Polarity</b>	When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward										
<b>Material</b>	<b>Magnet</b>	NdFeB					<b>Flux Density:</b>	T			
	<b>Housing</b>	Zinc Plated Steel			<b>Cone Material</b>	Mylar (transparent)					
	<b>Termination</b>	Solder tabs (Caution, overheating the terminal may damage connections of voice coil leads)									
	<b>Optional Gasket</b>										
<b>Speaker Parameters</b>	Qms	Qes	Qts	Vas	Cms	M	M/N	BL			
<b>Approximate Weight</b>	31 grams		<b>Shielding</b>	No		<b>Compliance</b>	Lead Free, RoHS				
<b>Options</b>											

### RELIABILITY

<b>Maximum Power Test</b>	With program White-Noise source <b>Maximum Power</b> , 1 minute on, 2 minutes off, 10 cycles, per (EIA) *	
<b>Thermal Operating Temperature Test</b>	96 hours continuous operation at <b>Rated Power</b> , at <b>Maximum Rated Operating Temperature</b> *	
	96 hours continuous operation at <b>Rated Power</b> , at <b>Minimum Rated Operating Temperature</b> *	
<b>Thermal Storage Temperature Test</b>	96 hours (no power) storage at <b>Maximum Rated Storage Temperatures</b> *	
	96 hours (no power) storage at <b>Minimum Rated Storage Temperatures</b> *	
<b>Thermal Shock Test</b>	<p>5 cycles of <b>Minimum and Maximum Operating Temperature</b></p> <p>Each cycle shall be set per diagram below and is three (3) hours long *</p>	<p style="text-align: center;">SINGLE CYCLE</p>
<b>Humidity Test</b>	48 Hours at +40°C±2°C. 90-95% RH *	
<b>Operation Life Test</b>	Must perform normal with program White-Noise source at <b>Rated Power</b> for <b>96 Hours</b> per (EIA) *	
<b>Insulation Test</b>	A minimum of 1 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case	
<b>Vibration Test</b>	Parts in Shipping Container are subjected to 15 minutes of at 0.75 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *	
<b>Drop Test</b>	Parts in Shipping Container are subjected to dropped naturally from 70cm height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 times total) *	
<b>Termination Strength</b>	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds	
<b>* Reliability Test Performance</b>	Parts should conform to original performance within ±5 dB tested with <b>Rated Power</b> , after 3 hours of recovery period.	
<b>Warranty</b>	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	



<b>PACKAGING</b>				
	<b>MARKING</b>	<b>TRAY</b>		
	<b>Bundle</b>	Dimensions	<b>X1</b>	<b>cm</b>
	Part Number		<b>Y1</b>	<b>cm</b>
	Other PN if required			
	Quantity	Quantity		<b>25</b>
	Lot and/or Date Code	<b>BUNDLE</b>		
	Bundle Number	Dimensions	<b>X2</b>	<b>cm</b>
	<b>Shipping Box</b>		<b>Y2</b>	<b>cm</b>
	Part Number			
	Customer PN (if required)	Quantity		<b>400</b>
	Quantity	<b>SHIPPING BOX</b>		
	Lot and/or Date Code	Dimensions	<b>X3</b>	<b>cm</b>
PO Number	<b>Y3</b>		<b>cm</b>	
Net Weight	<b>Z3</b>		<b>cm</b>	
Gross Weighjt	Number of Bundles			
Box Number of Boxes	Quantity			
<b>Made in China</b>	Approximate Weight			

Revision	Description	By	Date
1-2014	Revised SPL, Resonant Freq. Tolerance and Humidity Test duration.	W. Sargent	3/24/2014