



# PRODUCT INFORMATION

<b>PART #</b>	<b>CES130S040BA08PPS850MR</b>	<b>Revision: 2-2015</b>
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	<b>Square SMD Speaker</b>
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**DESCRIPTION:** Challenge Electronics Speaker; 13 mm Diameter; Square shape; 4 mm High; BA = 1.0 W maximum power; 8 Ohm; Plastic Frame; Plastic Cone; Samarion Cobalt magnet; 850 Hz. (Fo) Resonant Frequency; SMD Termination; RoHS Lead Free Compliant

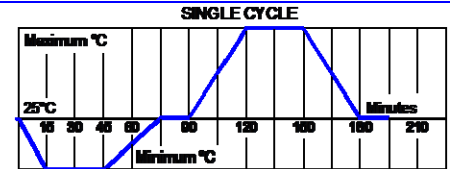


## SPECIFICATIONS

Shape	Square	Impedance	8 Ω ± 15%, at 2 KHz, 1V		DC Resistance			
Rated Power	Sine Wave 0.7 W	Square Wave	W	Maximum Power	Sine Wave 1.0 W	Square Wave		
Effective Frequency Band	850 Hz. to 20 KHz.		Resonant Frequency (Fo)	850 Hz. ± 20%, at 1 V				
Sound Pressure Level	88 ± 3.0 dB (A), at 0.7 W, 0.1 m, Average 1,000, 1,600, 2,000, 3,200 (Hz), at 25°C, Baffle board (IEC)							
Operating Temperature	-30°C to + 85°C		Storage Temperature	-40°C to +85°C				
Physical Dimensions	Length (L)	13 mm ±0.5mm	Width (W)	13 mm ±0.5mm	Height (H)	4 mm ±0.5mm		
Baffle Opening	Diameter (D)	6.5 mm ø	Width (W)		Minimum Opening Recessed	n/a		
Mounting	SMD							
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	Samarion Cobalt			Flux Density	T		
	Frame	Plastic LCP housing			Cone Material	Polyimide		
	Termination	SMD						
	Options							
Speaker Parameters	Qms	Qes	Qts	Vas	Cms	M	M/N	BL
Approximate Weight	1.1 grams		Shielding	N	Compliance	Lead Free, RoHS		
Options								

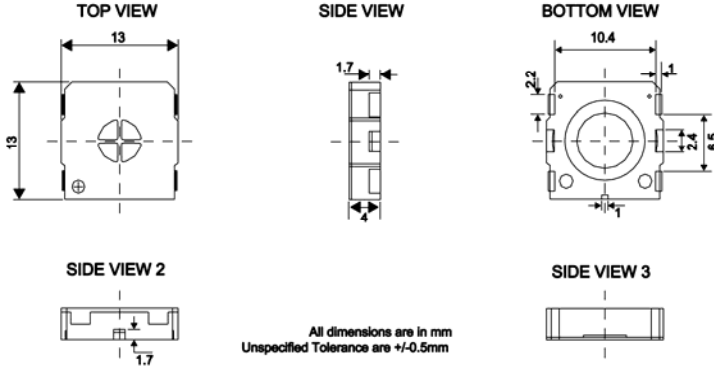
## RELIABILITY

Maximum Power Test	With program White-Noise source <b>Maximum Power</b> , 1 minute on, 2 minutes off, 10 cycles, per (EIA) *
Thermal Operating Temperature Test	<b>96 hours</b> continuous operation at <b>Rated Power</b> , at <b>Maximum Rated Operating Temperature</b> *
	<b>96 hours</b> continuous operation at <b>Rated Power</b> , at <b>Minimum Rated Operating Temperature</b> *
Thermal Storage Temperature Test	<b>96 hours</b> storage at <b>Maximum Rated Storage Temperatures</b> *
	<b>96 hours</b> storage at <b>Minimum Rated Storage Temperatures</b> *
Thermal Shock Test	<p><b>5 cycles of Minimum and Maximum Operating Temperature</b></p> <p>Each cycle shall be set per diagram below and is three (3) hours long *</p>
Humidity Test	<b>96 Hours</b> at +40°C±2°C. 90-95% RH *
Operation Life Test	Must perform normal with program White-Noise source at <b>Rated Power</b> for <b>96 Hours</b> 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 <b>10 seconds</b>
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	<b>Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period.</b>
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

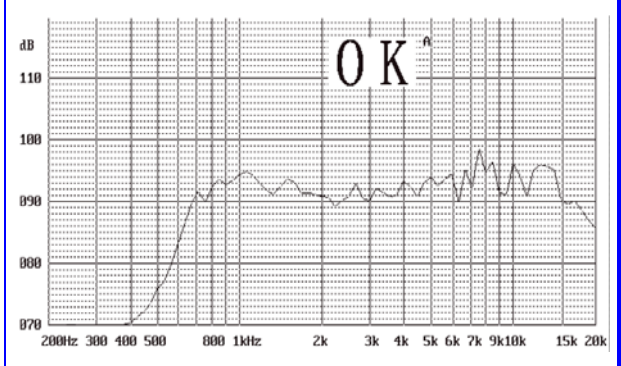




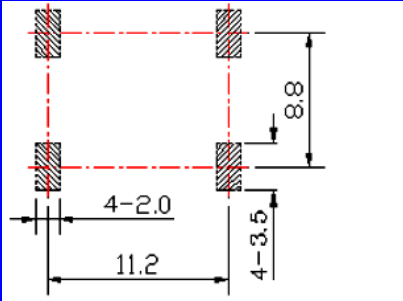
**DIMENSIONS** Units in: mm, Tolerance: ± 0.5mm unless specified otherwise



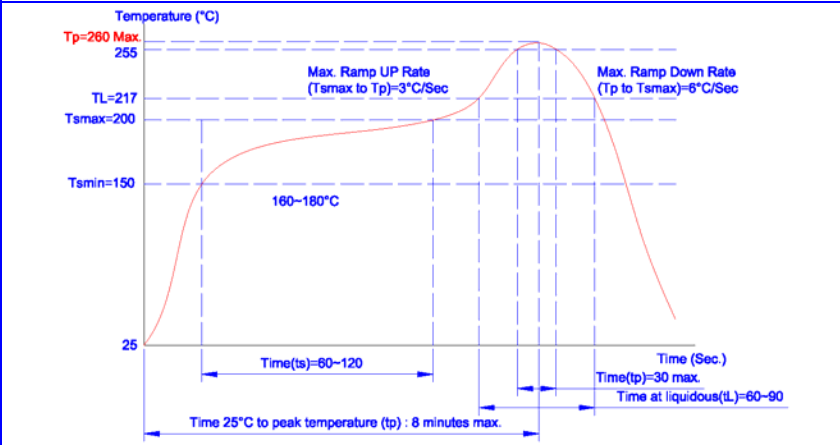
**SPL vs. FREQUENCY RESPONSE**



**PCB LAYOUT DETAIL**

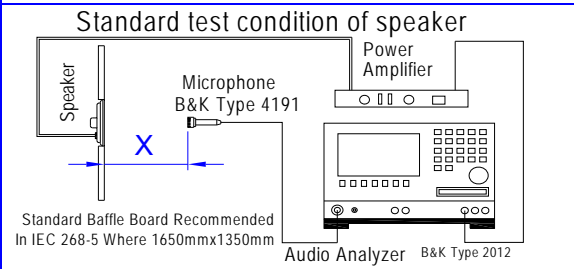


**SOLDER PROFILE**



Stage	Temperature Profile	Maximum Time
Pre-heat	150~180°C	120 sec
Solder Melt	Above 230°C	90 sec
Peak	260°C Maximum	30 sec
Cool Down		90 sec
Total Duration Period		

**TEST PROCESS**



**Test Condition**

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

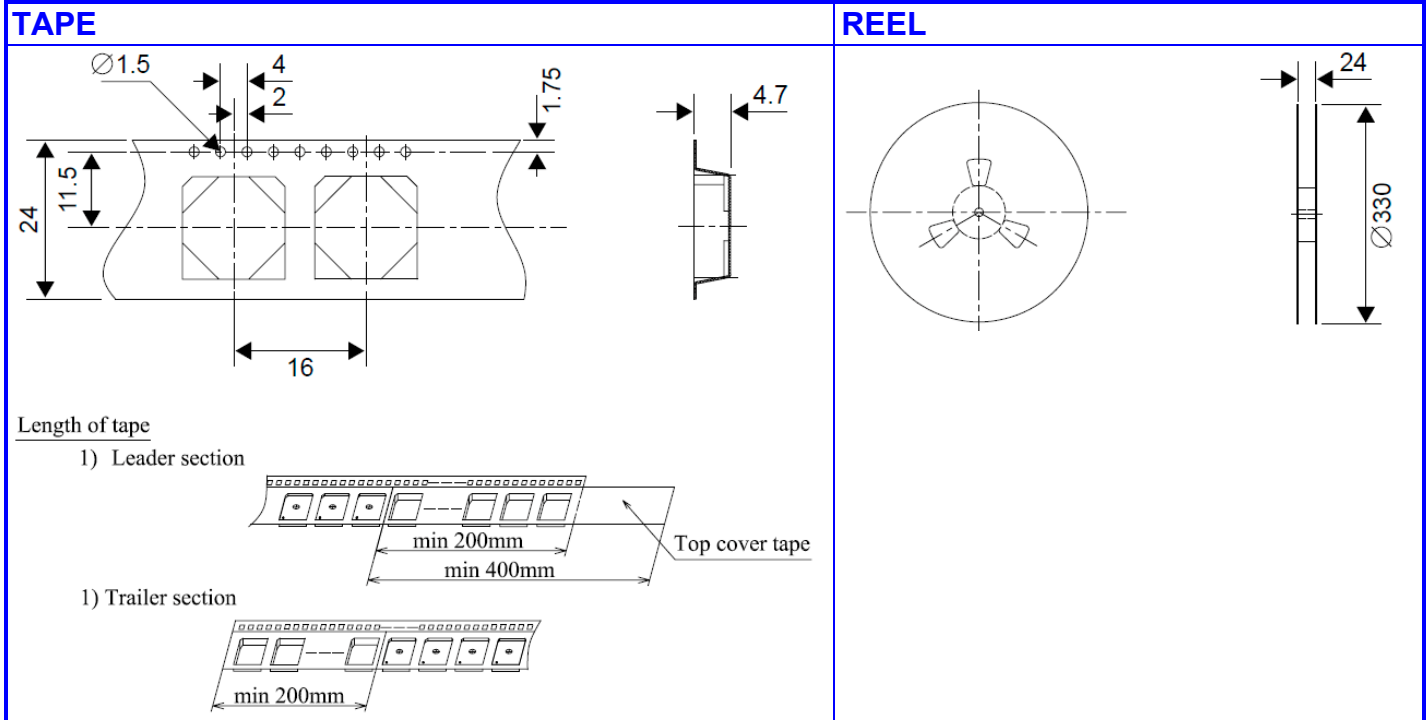
**JUDGEMENT**  
 Temperature : 20±3°C  
 Relative humidity: 60% ~ 70%  
 Atmospheric pressure: 860mbar to 1060mbar

**Standard Test Fixture**

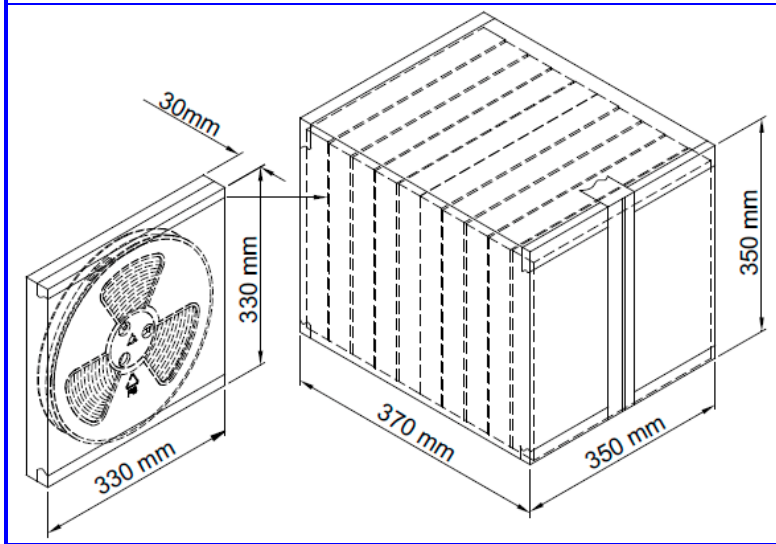
Zero Level: -dB  
 Mode: TSR  
 potentiometer Range: 50dB  
 Sweep Time: 0.5sec

**Input Power:**  
**0.1 W**

**Microphone Distance:**  
**X = 10 cm**



**PACKAGING**



MARKING		REEL BOX	
Bundle	Dimensions	X1	30 mm
Part Number		Y1	330 mm
Other PN if required		Z1	330 mm
Quantity	Quantity	<b>600 PCS</b>	
Lot and/or Date Code			
		X2	
		Y2	
		Z2	
Shipping Box		Dimensions	
Part Number			
Other PN (if required)	Quantity		
		SHIPPING BOX	
Lot and/or Date Code		X3	370 mm
PO Number		Y3	350 mm
Net Weight		Z3	350 mm
Gross Weight	Number of Reels	<b>10</b>	
Box Number of Boxes	Quantity	<b>6,000 PCS</b>	
<b>Made in China</b>	Approximate Weight	<b>10Kg</b>	

Revision	Description	By	Date
1-2015	Add Solder Profile	WS	2015-11-02
2-2015	Add PCB Layout Detail	WS	2015-12-02