



PRODUCT INFORMATION

PART #	CES30P20H13-80U	Revision: 6-2016
	PIEZOELECTRIC MINI SPEAKER	

DESCRIPTION: Challenge Electronics Speaker, 30 mm Long, Dynamic Piezo, 20 mm Wide, Height 1.3 mm, 800 Hz. (Fo) Resonant Frequency, U Contact or Solder Points Termination, RoHS and REACH Compliant	<ul style="list-style-type: none"> • Low Power • Small Size • RoHS Compliant • ISO/TS 16949, ISO 13485 	
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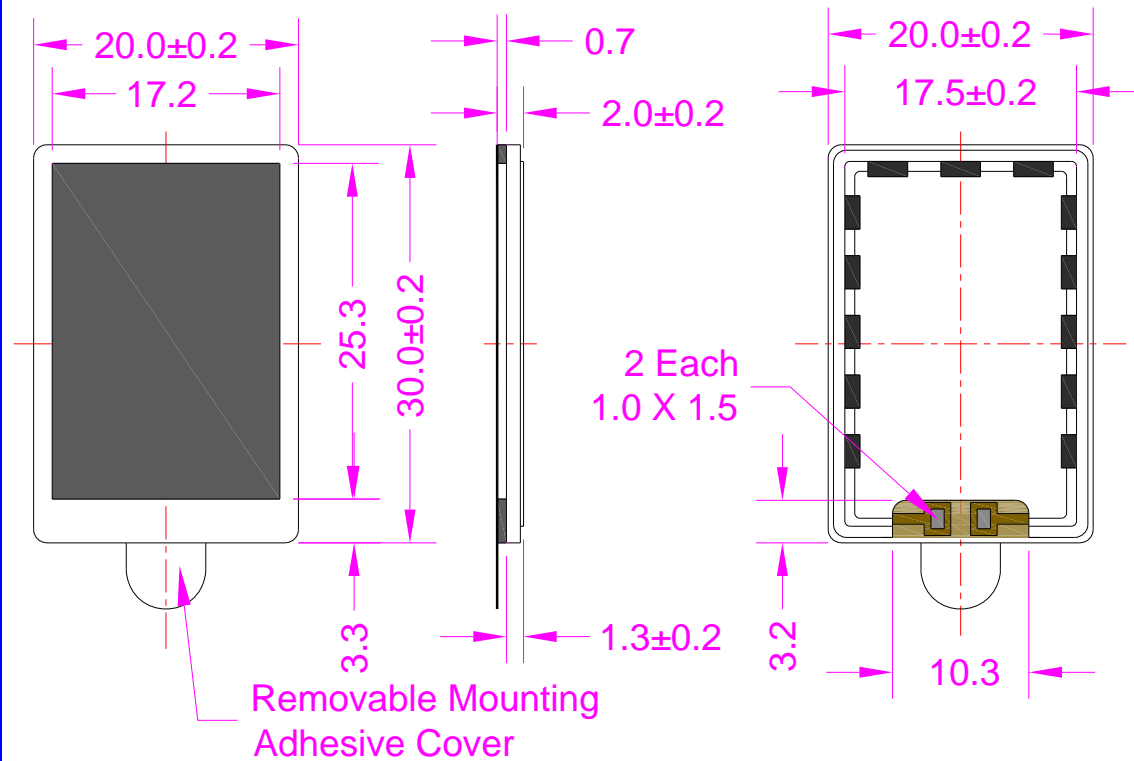
SPECIFICATIONS						
Shape	Square		Capacitance	0.87 μ F at 1,000 Hz.		
Rated Operating Voltage	7.0 V _{RMS}		Maximum Input Voltage	9.0 V _{RMS}		
Resonant Frequency (Fo)	800 \pm 150 Hz.	Frequency Range	700 Hz. to 10,000 Hz. SPL between 86 ~ 104dB			
Sound Pressure Level	96.5 \pm 3.0 dB (A), at 5.0 V _{RMS} , 5 cm, Average 0.8, 1.0, 1.5, 1.8, 2.0, 3.0, 3.5 KHz.					
Operating Temperature	-20°C to + 70°C		Storage Temperature	-30°C to +85°C		
Distortion	Less than 6% at 1,000 Hz. at 5 V _{RMS} sine wave					
Buzz & Rattle	Less than 2% at 5.0 V _{RMS} sine wave between 200 Hz. and 10,000 Hz.					
Physical Dimensions	Length (L)	30.0 mm	Width (W)	20.0 mm	Height (H)	1.3 mm
Material	Stainless Steel Frame, Piezoelectric, PZT (Lead Zirconate Titanate), with Kapton membrane					
Termination	Tinned Copper on Kapton material, dimension 13 mm X 3 mm, bonding pad dim. 1 mm X 1.5 mm					
Mounting Gasket	Poron Foam Material, Double Sided Adhesive Tape, 0.7 mm Thickness					
Approximate Weight	2 grams		Compliance	RoHS and REACH		
Options						

RELIABILITY	
Thermal Operating Temperature Test	240 hours continuous operation at Rated Voltage , at Maximum Rated Operating Temperature * 240 hours continuous operation at Rated Voltage , at Minimum Rated Operating Temperature *
Thermal Storage Temperature Test	240 hours storage at Maximum Rated Storage Temperatures * 240 hours storage at Minimum Rated Storage Temperatures *
Thermal Shock Test	10 cycles of Minimum and Maximum Operating Temperature , Transfer time between temperature <10 seconds, with dwell time at each temperature of 30 minutes, (per IEC 68-2-14) *
Humidity Test	240 Hours at +40°C \pm 2°C, 90-95% RH, (per IEC 68-2-67) *
Drop Test	Part mounted in a 100 grams fixture and dropped naturally from 75 cm height onto the surface of concrete or steel, 3 axes (X, Y, Z) directions, 3 times (9 times total) *
Termination Strength	Maximum of 22 N (2.24 K _F) load pull test, applied to each terminal in axial direction for 10 seconds
* Reliability Test Performance	Parts should conform to original performance after 3 hours of recovery period Sound Pressure Level: within \pm 3 dB tested with Rated Voltage Resonant Frequency (Fo): with maximum Deviation of \pm 20% Hz.
Life Test	240 hours continuous operation at Rated Voltage , with Sine Wave 1,000 Hz.
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

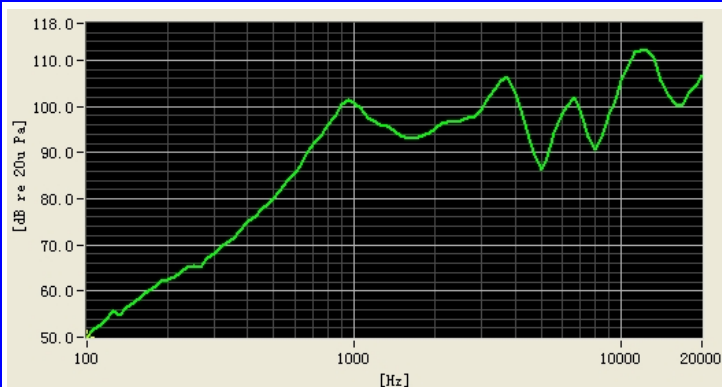
TEST PROCESS		
<p>Standard test condition of speaker</p> <p>Standard Baffle Board Recommended In IEC 268-5 Where 1650mmx1350mm</p>	<p>Test Condition</p> <p>STANDARD Temperature: 15 ~ 35°C Relative humidity: 45% ~ 85% Atmospheric pressure: 860 mbar to 1060mbar</p> <p>JUDGEMENT Temperature: 20\pm3°C Relative humidity: 60% ~ 70% Atmospheric pressure: 860 mbar to 1060 mbar</p>	<p>Standard Test Fixture</p> <p>Zero Level: -dB Mode: TSR potentiometer Range: 50 dB Sweep Time: 0.5 sec</p>
	<p>Input Voltage: 5 V_{RMS} Distance: X = 5 cm</p>	



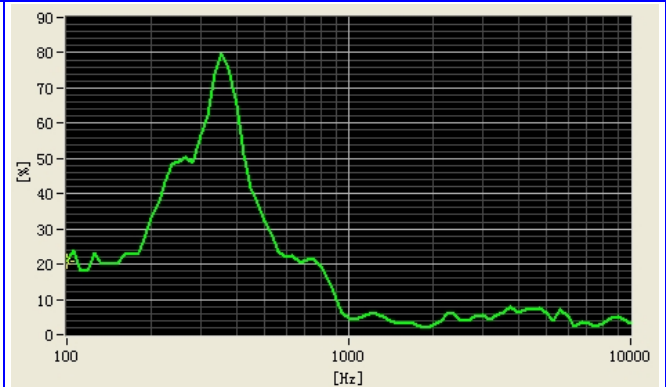
DIMENSIONS Units in: mm, Tolerance: ± 0.5 mm unless specified otherwise.



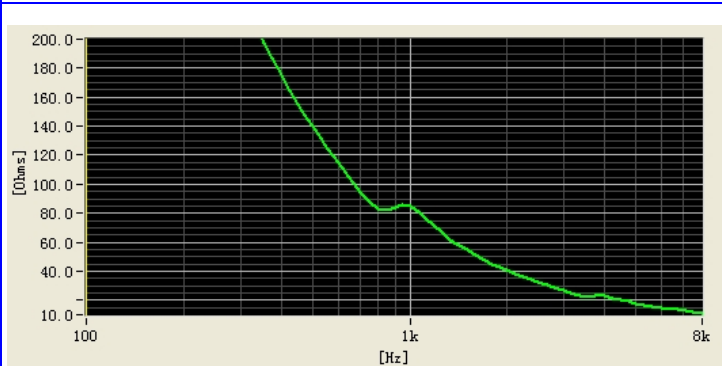
SPL vs. FREQUENCY RESPONSE
 (only for reference)



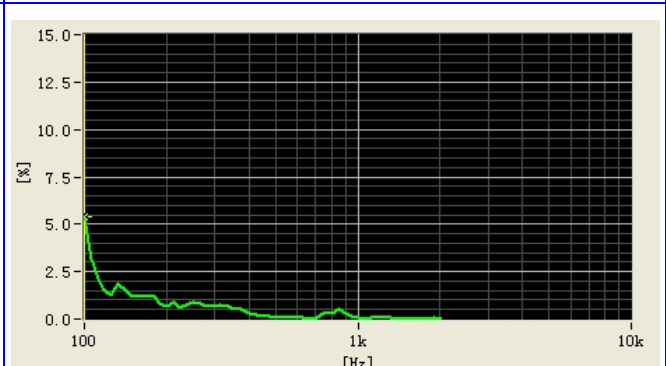
TOTAL HARMONIC DISTORTION
 (only for reference)



IMPEDANCE RESPONSE
 (only for reference)



BUZZES and RATTLES
 (only for reference)

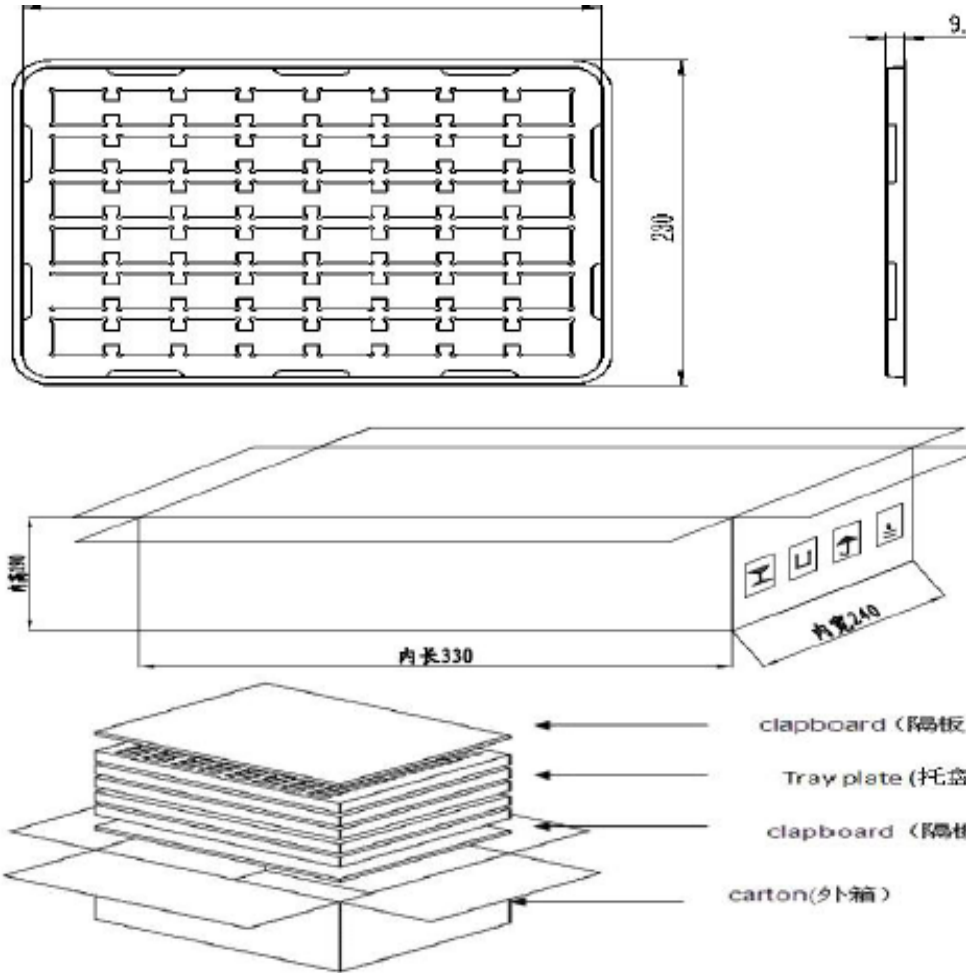




SUBSTANCE OF VERY HIGH CONCERN (SVHC)

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			SHIPPING BOX		
Bundle	Shipping Box	Dimensions	X1	32 cm	Dimensions	X3	33 cm
Customer PN	Customer Part Number		Y1	23 cm		Y3	24 cm
Other PN if required	Other PN (if required)		Z1	1 cm		Z3	19 cm
Quantity	Quantity	Quantity	50 Parts		Number of Trays	48	
Lot and/or Date Code	Lot and/or Date Code				Quantity	2,400 Parts	
Bundle Number	PO Number	Dimensions	X2		Approximate Weight	7 kg	
	Net Weight		Y2		Approximate Net Weight	5.5 kg	
	Gross Weight		Z2				
	Box Number	Quantity					
	Total Number of Boxes						
	Manufacturing Country						

Revision	Description	By	Date
6-2016	Changed SPL magnitude and measurement conditions. (from 98.5 to 96.5 dB). Changed shipping details. Remove Back Dust Cover.	WS	2016-04-14