Challenge Electronics
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PRODUCT INFORMATION

PART #	CEPT170A087-125-20MR	Revision: 1-2011

SMD Piezoelectric Sound Transducer

DESCRIPTION

Challenge Electronics Piezoelectric Transducer, 17.0 mm Long., **A** Style case (Round, Top Sound Port), **8.7** mm High, **12** Vpp Rated Voltage, **1** to **25** Vpp Operating Voltage, **2,0**00 Hz. Resonant Frequency, minimum output of 80 dB(A) at 10 cm at Rated Voltage, **M** Type SMD Termination, **R**oHS Compliance

FEATURES

- **RoHS Compliant**
- **ISO 9001 Certified**

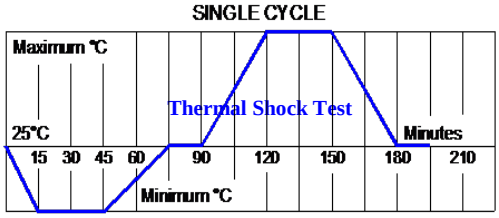
SPECIFICATIONS

Operating Voltage	**1 - 25 Vpp**	**Nominal Rated Voltage**	**12 Vpp, Square Wave, 50% Duty Cycle**		
Sound Pressure Level	**80 dB(A), at: Rated Voltage, 10 cm**		**Resonant Frequency**	**2,000 ± 500 Hz.**	
Operating Current	**2 mA, at: Rated Voltage, Resonant Frequency**		**Capacitance**	**19,000 ± 30% pFD**	
Operating Temperature	**-30 ºC to +85 ºC**	**Storage Temperature**	**-40 ºC to +90 ºC**		

Material	**Case**	**Plastic, PPS A7-03A, Flame Retardant**		**Sound Port Direction**	**Top**
	Diaphragm	**Ni Alloy Disc N42**	**Termination**	**SMD, Soldering pads, Brass, Sn plated**	
	Encapsulation	**PCB Cover**			

Physical Dimensions	**Length or Diameter (L /D)**	**17.0 mm Ø**	**Width (W)**	**mm**	**Height (H)**	**8.7 mm**	
Approximate Weight	**1.6 grams**	**Removable Washing Label**	**No**	**Compliance**	**RoHS**		
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	5 cycles of Minimum and Maximum Operating Temperature, Each cycle shell be set per diagram and is 3 hours long *	
Humidity Test	240 Hours at +40°C±2°C. 90-95% RH *	
Insulation Test	A minimum of 10 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case	
Vibration Test	2 Hours of 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 750 mm height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (6 times total) *	
Solderability	Terminal leads are immersed in rosin for 5 seconds and then immersed in solder-bath of +270°C for 3±1 seconds	
Soldering Heat Resistance	Terminal leads are immersed, up to 1.5 mm from part case, in rosin for 5 seconds and then immersed in solder-bath of +350±5°C for 3±0.5 seconds or +260±5°C for 10±1 seconds	
Reliability Test Performance *	**Parts should conform to original performance within ±3dB, after 3 hours of recovery period**	
Operation Life Test	**Continuous**	Two hundred fifty (250) hours of continuous operation, at **Rated Voltage**, each **at Minimum & Maximum Rated Operating Temperatures**
	Intermittent	One thousand (1,000) hours of: 1 minute ON 4 minutes OFF cycle, **at Room Temperature**, and **Maximum Rated Voltage**
Warranty	For a period of one (1) year from date of shipping under normal operations conditions	

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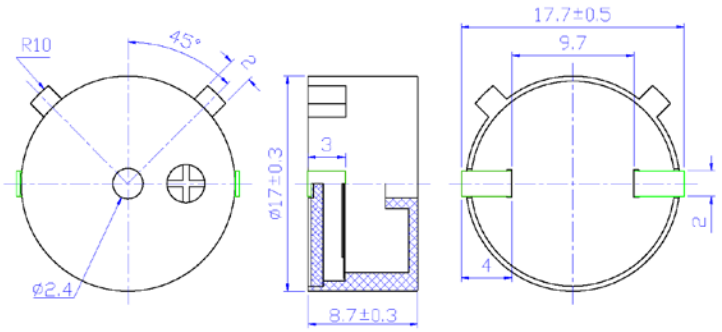
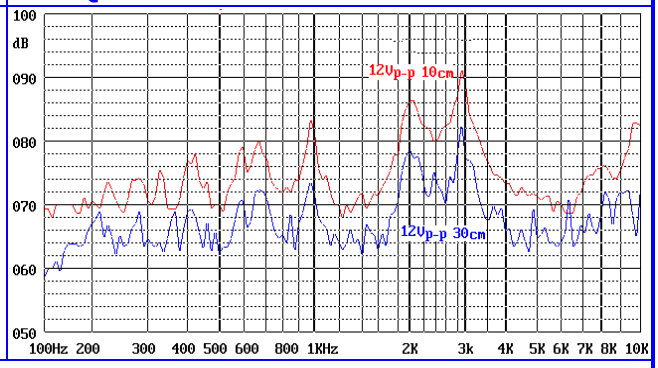
DIMENSIONS Units in: mm Tolerance: ±0.5mm



FREQUENCY REPONSE CURVE

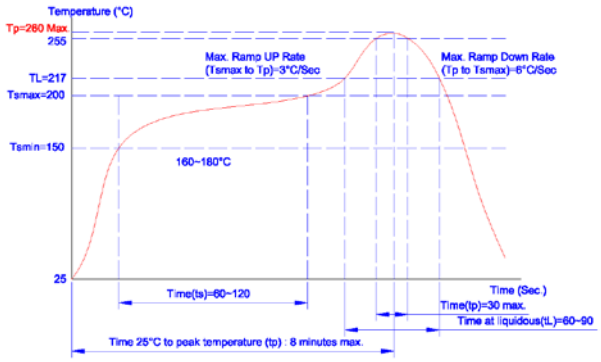


Recommended Land Pattern:

Storage:

1. **Shelf life:** Twelve (12) months when devices are to be stored in factory supplied unopened ESD moisture sensitive bag under maximum environmental conditions of 30°C, 70% R.H.
2. **Exposure:** Devices should not be exposed to high humidity high temperature environment. MSL (moisture sensitivity level) Class 2.

Solder Reflow Profile:



Stage	Temperature Profile	Maximum Time
Pre-heat	**170~230ºC**	**120 sec**
Solder Melt	**Above 230ºC**	**100 sec**
Peak	**260ºC Maximum**	
Cool Down		**100 sec**
Total Duration Period		**6 Minutes Maximum**

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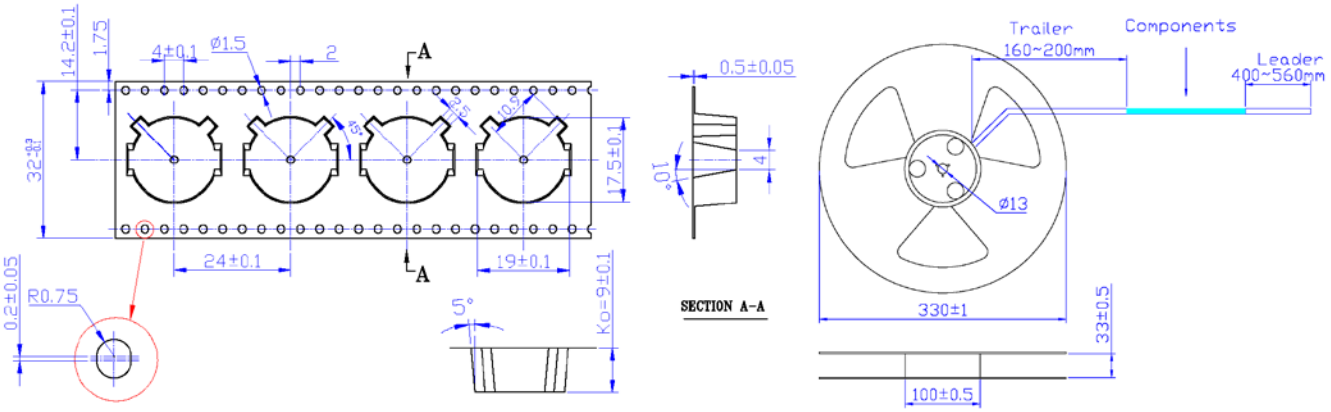
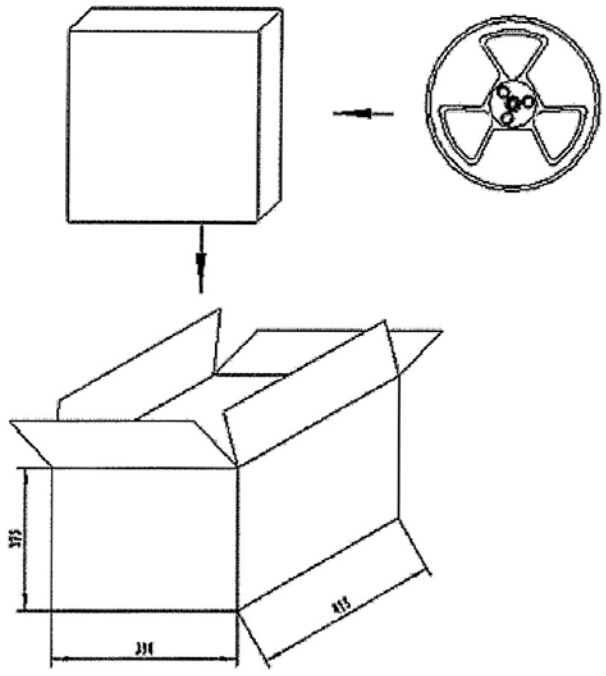
TAPE and REEL INFORMATION



1. 110 sprocket holes pitch cumulative tolerance ± 0.20 mm
2. Carrier camber not to exceed 1 mm in 100 mm
3. Ao & Bo measured on a place 0.3mm above the bottom of the pocket
4. Ko measured from a plane on the inside bottom of pocket to the top surface of the carrier
5. All dimensions meet EIA-481-2-A requirements
6. Component loaded 4.8meters per 13" reel: 350 parts

PACKAGING



MARKING	Reel		
Bundle	Dimensions	**X1**	
Customer PN		**Y1**	
Other PN if required		**Z1**	
Quantity	Quantity		**350**
Lot and/or Date Code	Box		
Bundle Number	Dimensions	**X2**	
Shipping Box		**Y2**	
Customer Part Number		**Z2**	
Other PN (if required)	Quantity		
Quantity	**SHIPPING BOX**		
Lot and/or Date Code	Dimensions	**X3**	**cm**
PO Number		**Y3**	**cm**
Net Weight		**Z3**	**cm**
Gross Weighjt	Number of Box		
Box Number	Quantity		
of Number of Boxes	Approximate Weight		
Made in China			