Challenge Electronics
95 East Jefryn Boulevard
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PRODUCT INFORMATION

PART #	CEPT120L030-3-125-40MR	Revision: 2-2015

RoHS COMPLIANCE

SMD Piezoelectric Sound Transducer

DESCRIPTION

Challenge Electronics Piezoelectric Transducer, 12.0 mm Long. Square, **L** Style case (Square, Side Sound Port), **3.0** mm High, **3** Vpp Rated Voltage, **1** to **25** Vpp Operating Voltage, **4,0**00 Hz. Resonant Frequency, minimum output of 75 dB(A) at 10 cm at Rated Voltage, **M** Type SMD Termination, **R**oHS Compliance

FEATURES

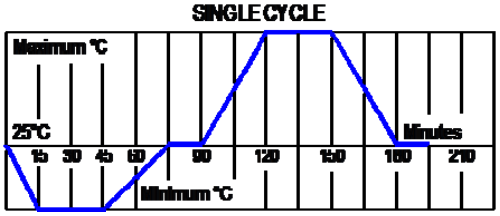
- **RoHS**
- **ISO 9001**

SPECIFICATIONS

Operating Voltage	**1- 25 Vpp**	**Rated Voltage**	**3.0 Vpp, Square Wave, 50% Duty Cycle**				
Sound Pressure Level	**Minimum 75 dB(A),** at: 10 cm, Rated Voltage, Resonant Frequency			**Resonant Frequency**	**4,000 ± 500 Hz.**		
Operating Current	**1 mA, at: Rated Voltage, Resonant Frequency**			**Capacitance**	**15,000 pFD ± 30% 100 Hz. 1 Vrms**		
Operating Temperature	**-20ºC to + 70ºC**	**Storage Temperature**	**-30ºC to +80ºC**				
Material	**Case**	**Plastic, LCP or equal**			**Sound Port Direction**	**Side**	
	Diaphragm	**Ni Alloy Disc N42 or equal**		**Termination**	**SMD, 2 soldering pads, Sn plated Brass**		
	Encapsulation	**Plastic Plate**					
Physical Dimensions	**Length or Diameter (L /D)**	**12.0 mm**	**Width (W)**	**12.0 mm**	**Height (H)**	**3.0 mm**	**Pins Spacing**	**mm**
Approximate Weight	**0.3 grams**	**Removable Washing Label**	**No**	**Compliance**	**RoHS**		
Options							

RELIABILITY

Thermal Operating Temperature Test	**96 hours** continuous operation **at Rated Voltage**, at **Maximum Rated Operating Temperature** *
	96 hours continuous operation **at Rated Voltage**, at **Minimum Rated Operating Temperature** *
Thermal Storage Temperature Test	**96 hours** storage at **Maximum Rated Storage Temperatures** *
	96 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	**140 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 (9 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**
Operation Life Test – **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 This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair



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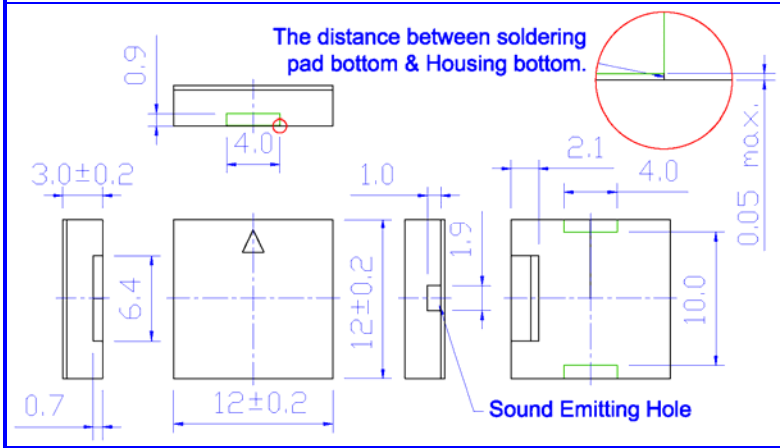
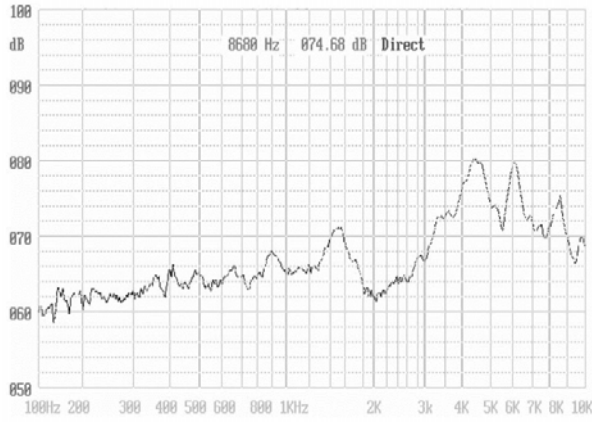
DIMENSIONS

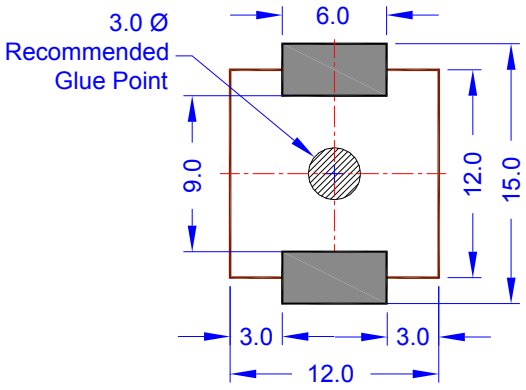
Units in: mm, Tolerance: ± 0.5mm unless specified otherwise.



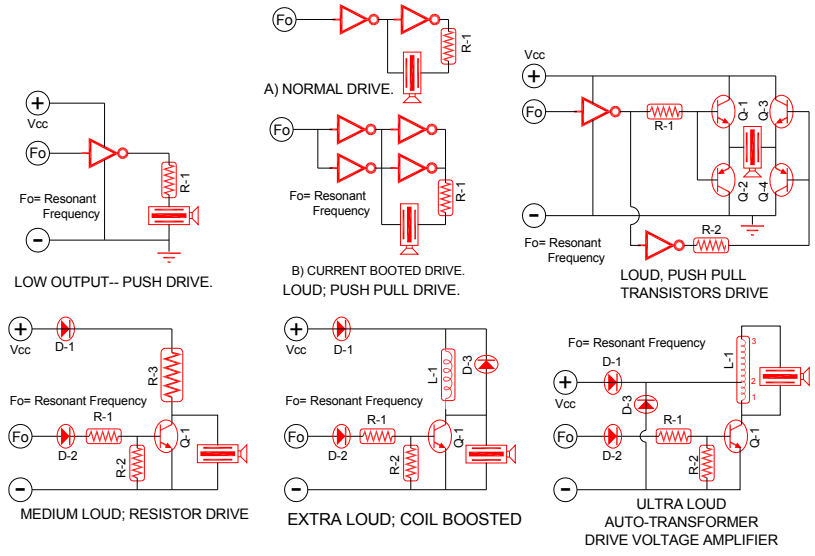
SPL vs. FREQUENCY RESPONSE



RECOMMENDED LAND PATTERN



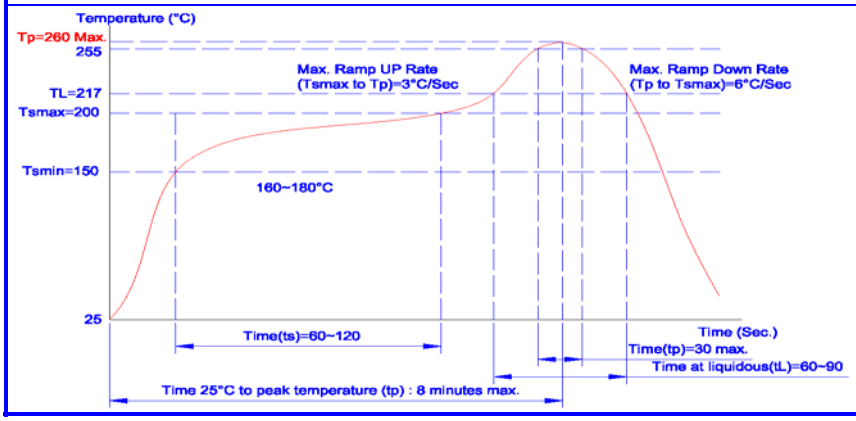
RECOMMENDED CIRCUIT DRIVE



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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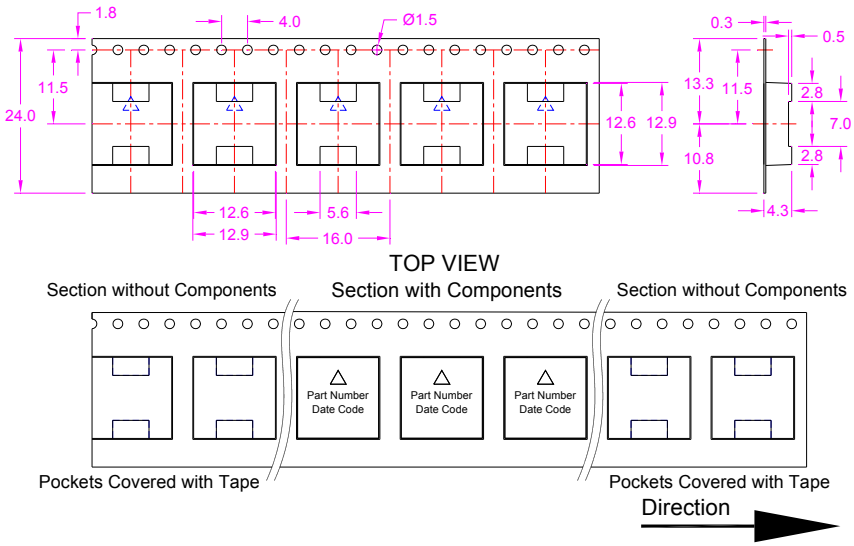
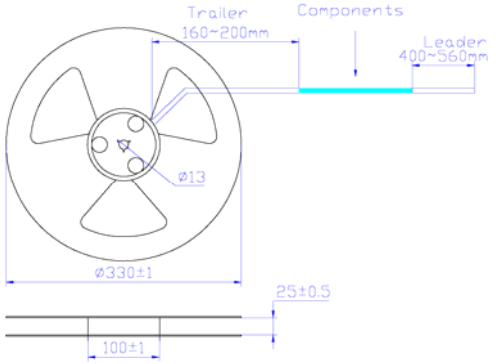
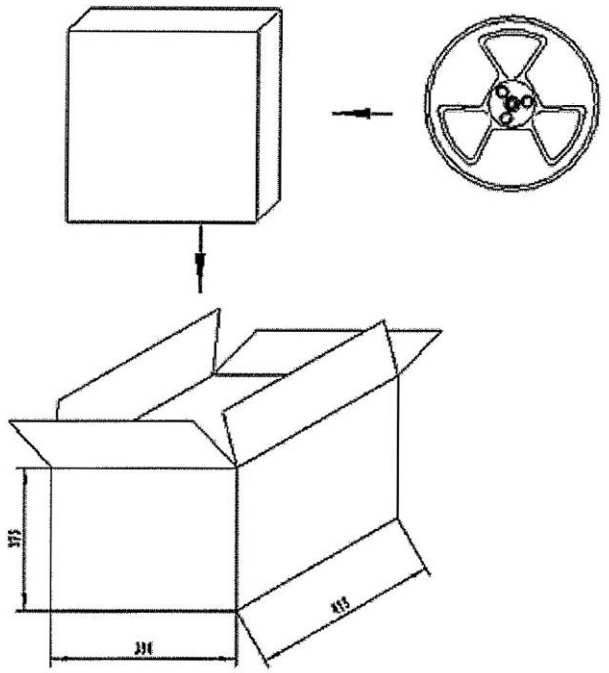
TAPE and REEL INFORMATION





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 15" reel: 1,000 parts

PACKAGING



MARKING	Reel		
Bundle	Dimensions	X1	
Customer PN		Y1	
Other PN if required		Z1	
Quantity	Quantity		1,000
Lot and/or Date Code	Box		
Bundle Number	Dimensions	X2	35 cm
Shipping Box		Y2	35 cm
Customer Part Number		Z2	3 cm
Other PN (if required)	Quantity		1,000
Quantity	**SHIPPING BOX**		
Lot and/or Date Code	Dimensions	X3	37.5 cm
PO Number		Y3	37.5 cm
Net Weight		Z3	35 cm
Gross Weighjt	Number of Box		10
Box Number	Quantity		10,000
of Number of Boxes	Approximate Weight		
Made in China			

Revision	Description	By	Date
2-2015	Replaced Product Photo	W.Sargent	2015-11-02