Challenge Electronics
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PRODUCT INFORMATION

PART #	CEET050M025-17-204-40MR	Revision: 1-2014

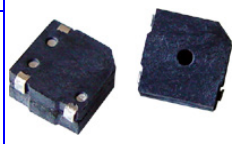
SMD Electro-Magnetic Sound Transducer

DESCRIPTION

Challenge Electronics Electro-Magnetic Transducer, 5.0 mm Square, **M** type SMD case (Square, TOP Sound Port), **2.5** mm Height, **17** Ohms coil resistance, **2** to **4** Vo-p operation **4,000** Hz Resonant Frequency, with a minimum output of 78 dB(A) at,10cm. **M** type SMD Termination, **R**oHS Lead Free compliant

FEATURES

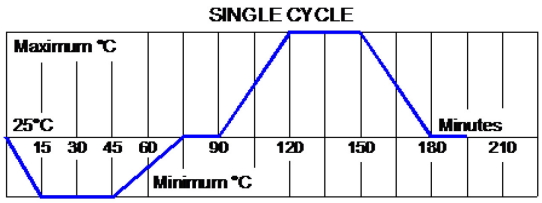
- **RoHS, Lead Free Compliant**
- **ISO 9001**



SPECIFICATIONS

Resonant Frequency	4,000 ± 10% Hz.		Coil Impedance	17 ± 2 Ohms	
Operating Voltage	2.0 - 4.0 Vo-p		Rated Voltage	3.0 Vo-p	
Sound Pressure Level	75 dB(A), at: rated Voltage, 10 cm, Resonant Frequency, Square wave, 50% Duty Cycle				
Maximum Current	80 mA, at rated Voltage, Resonant Frequency, Square wave, 50% Duty Cycle				
Operating Temperature	-30ºC to + 85ºC		Storage Temperature	-40ºC to + 90ºC	
Termination	SMD, M type, 4 soldering pads, Sn plated Brass				
Material	Case	M type SMD, Plastic, LCP VECTRA 130i			
	Diaphragm	Ni Alloy Disc N50	Back Sealed	Epoxy	
Sound Port Direction	Top	Case Standoffs from PCB	No	Removable Washing Label	No
Physical Dimensions	Length or Diameter (L /D)	5.0 mm	Width (W)	5.0 mm	Height (H) 2.5 mm
Approximate Weight	0.5 grams	Compliance	RoHS, Lead Free		
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 below and is three (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 (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	240 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 Rated Voltage
Warranty	For a period of one (1) year from date of shipping under normal operations conditions	

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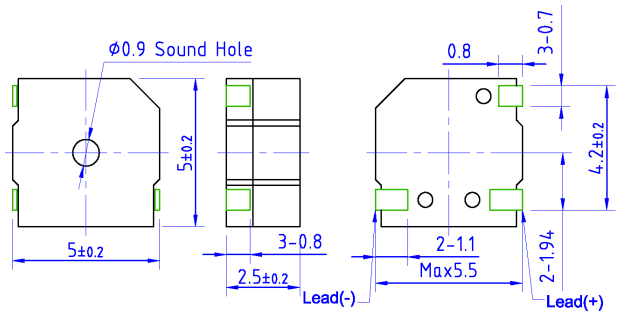
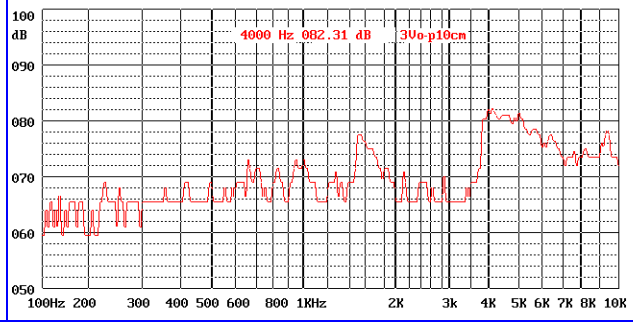
DIMENSIONS

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



SPL vs. FREQUENCY RESPONSE

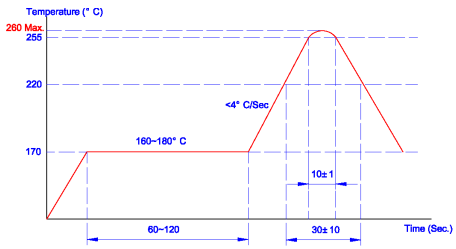


RECOMMENDED LAND PATTERN

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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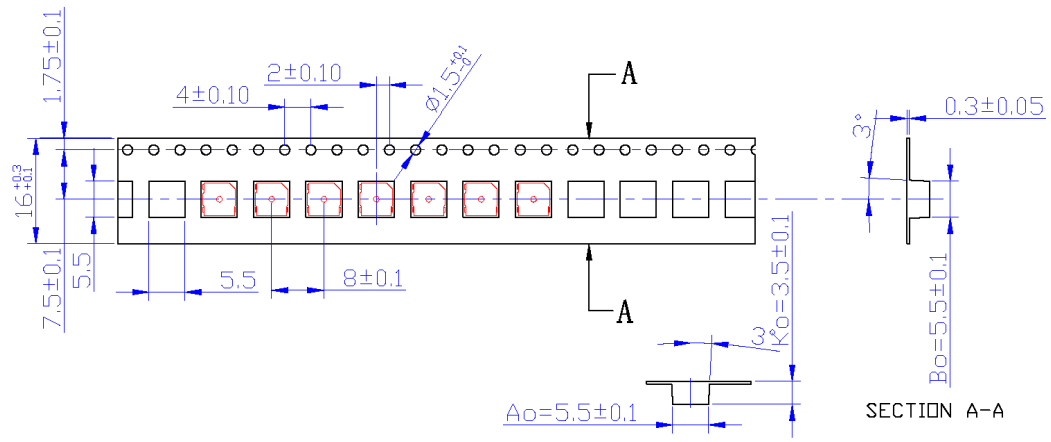
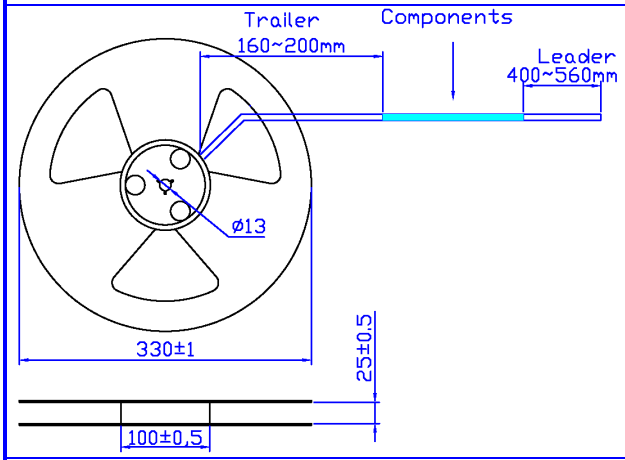
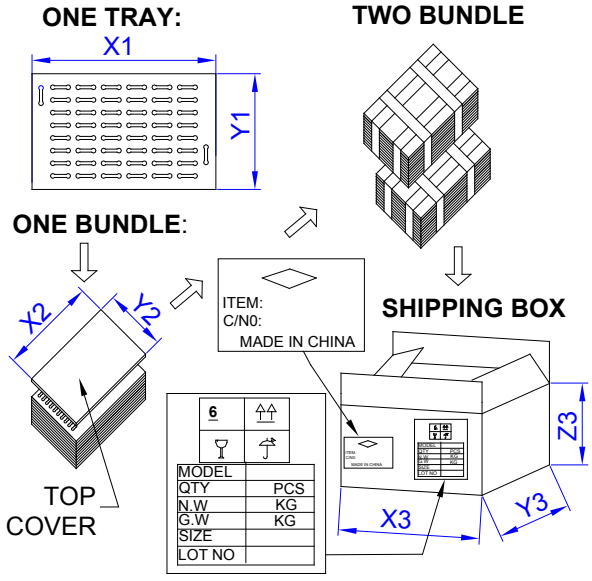
TAPE & REEL DIMENSIONS (Unit: mm)





1. 10 pocket holes pitch cumulative tolerance ± 0.20 mm.
2. Carrier camber is 1 mm in 100 mm.
3. A0 and B0 measured on a plane on a place 0.30 mm above the bottom of the pocket.
4. K0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
5. All dimensions meet EIA-481-2-A requirements.
6. Reel Size 13"
7. Parts per Reel 2,000 parts

PACKAGING



MARKING	TRAY		
Bundle	Dimensions	**X1**	**cm**
Customer PN		**Y1**	**cm**
Quantity		**Z1**	**cm**
Lot and/or Date Code	**BUNDLE**		
Bundle Number	Dimensions	**X2**	**cm**
Shipping Box		**Y2**	**cm**
Customer Part Number		**Z2**	**cm**
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 Bundles		
Box Number	Quantity		
of Number of Boxes	Approximate Weight		
Made in China			

Revision	Description	By	Date
1-2014	Corrected SPL (from 82 to 75)	Walter Sargent	1/14/2014