Challenge Electronics
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PRODUCT INFORMATION

PART #: CSET8.5L3.6-17-2.7-5F **Revision:** 4-2016

RoHS COMPLIANCE

SMD Electromagnetic Sound Transducer

DESCRIPTION

Challenge Electronics Electromagnetic Transducer; 8.5 mm Long; L style case (Square, SIDE Sound Port); 4.0 mm High; 17 Ohms Impedance; 2 to 4 Vo-p Operation Voltage; 3.6 Vo-p Nominal Rated Voltage; 2,710Hz. Resonant Frequency; minimum output of 94 dB(A) at 10 cm at Rated Voltage; SMD Termination; RoHS, Lead Free Compliance

FEATURES

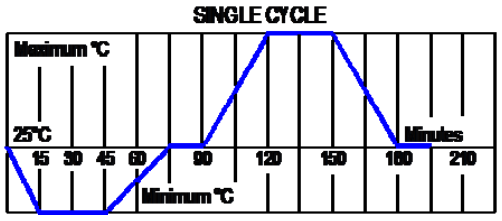
- RoHS complaint
- Small size
- Reflowing Solderable
- Flame Retardant Plastic
- Tape and reel packaging for auto mounting
- ISO 9001 & TS16949 Certified

SPECIFICATIONS

Resonant Frequency (Fo)		2,710 ± 500 Hz.			Coil Impedance	17 ± 3 ohm	
Operating Voltage		2-4 Vo-p			Nominal Rated Voltage	3.6 Vo-p	
Sound Pressure Level		Minimum 94 dB(A), at: 10 cm, 3.6 Vo-p, 2,710 Hz, Square Wave, 50% Duty Cycle					
Operating Current		Average 100 mA, Maximum Peak 200 mA; at: 3.6 Vo-p, 2,710 Hz, Square Wave, 50% Duty Cycle					
Special Testing		Test for no raspy tone at 5.0 Vo-p					
Operating Temperature		-30ºC to +85ºC	Storage Temperature	-40ºC to + 90ºC			
Material	Housing	Plastic, LCP Vectra E130i			Sound Port Direction	Side	
	Diaphragm	Ni Alloy Disc N50 or equal			Encapsulation	Plastic Plate	
	Termination	SMD, 4 Soldering Points					
Physical Dimensions		Length or Diameter (L /D)	8.5 mm	Width (W)	8.5 mm	Height (H)	4.0 mm
Approximate Weight		0.6 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	**96 Hours** at +40°C±2°C, 90-95% RH *
Drop Test	Dropped naturally from 750 mm height onto the surface of 10 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 times total) *
Vibration Test	**2 Hours** of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *
Shock	98 m/s^2 (=10g) shock for each mutually perpendicular directions, half sine wave, 3 times each
Soldering Heat Resistance	Samples put through reflowing soldering oven 2 twice *
Solderability	Samples put through reflowing soldering oven 1 times, *90% min. soldering pads shall be with solder (except the edge of pad)*
Termination Strength	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for **10 seconds**
* Reliability Test Performance	**Parts should conform to original performance within ±3dB, after 3 hours of recovery period**
Operation Life Test	thousand (1,000) hours of continuous operation, at **Rated Voltage**, at Room Temperature
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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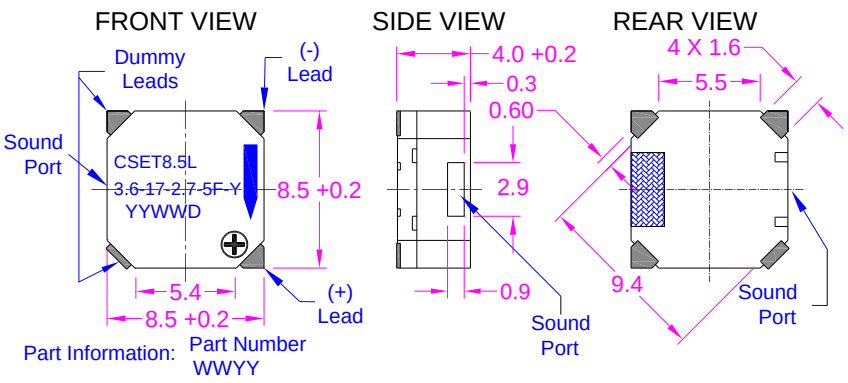
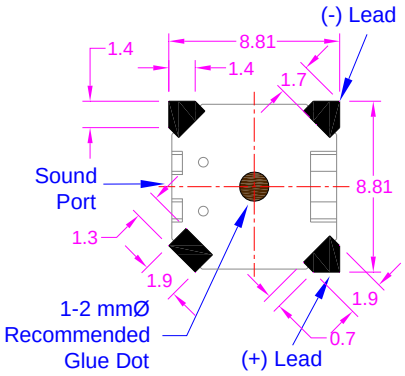
DIMENSIONS

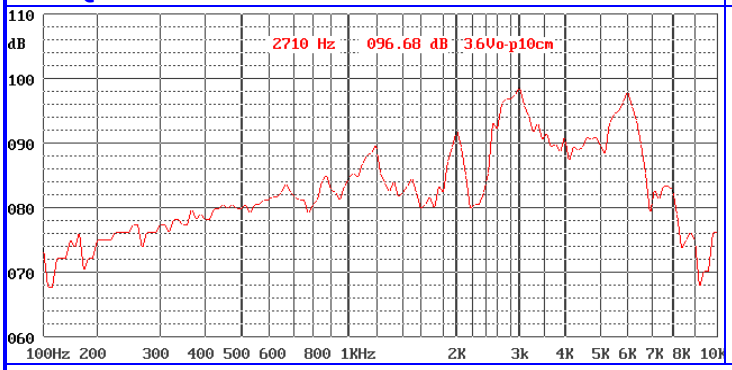
Units in: mm Tolerance: ±0.5 mm



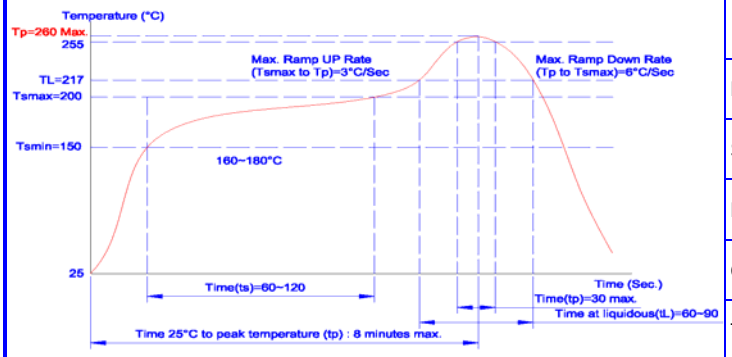
Recommended Land Pattern



FREQUENCY RESPONSE CURVE

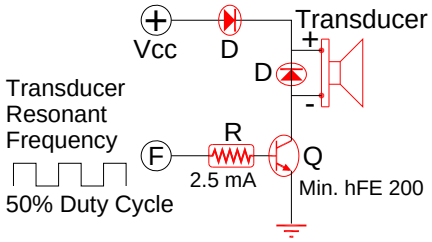


SOLDER REFLOW PROFILE



Stage	Temperature Profile	Maximum Time
Pre-heat	**150~230ºC**	**120 sec**
Solder Melt	**Above 230ºC**	**100 sec**
Peak	**260ºC Maximum**	
Cool Down		**100 sec**
Total Duration Period		**6 Minutes Maximum**

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

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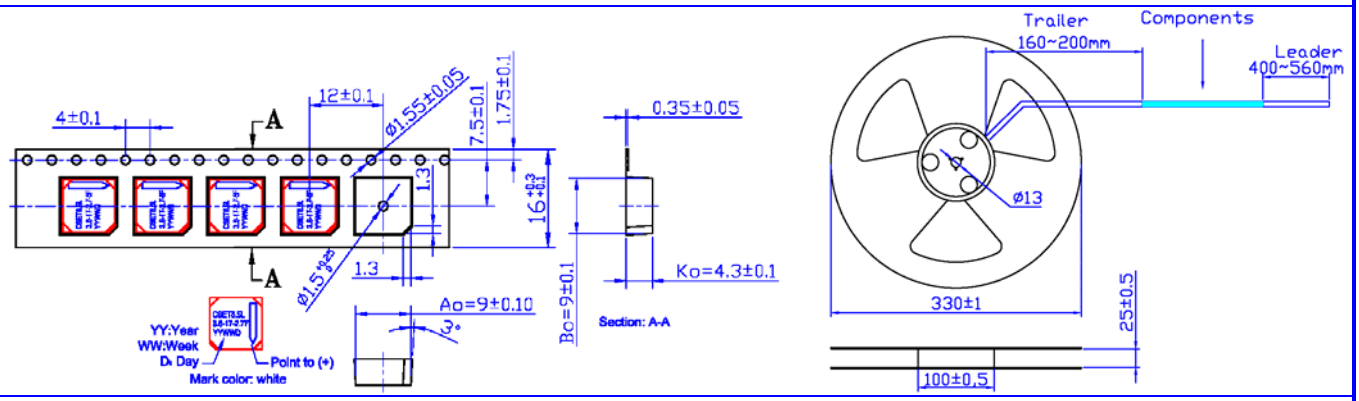
TAPE and REEL INFORMATION



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 0.3 mm 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 13" (330 mm) Reel: **1,200** parts

PACKAGING

MARKING	**Reel**		
Reel	Reel Diameter		**33 cm**
Part Number	**Reel Box**		
Quantity	Dimensions	X	**cm**
Lot and/or Date Code		Y	**cm**
Shipping Box		Z	**cm**
Part Number	Quantity		
Customer PN (if required)	**Shipping Box**		
Quantity	Dimensions	X	**cm**
Lot and/or Date Code		Y	**cm**
PO Number		Z	**cm**
Net Weight	Number of Reels		
Gross Weight	Quantity		
Box Number of Boxes	Approximate Weight		**Kg**
Made in			**China**

Revision	Description	By:	Date:
090611	To update the Recommend Reflowing Profile as per IPC/JEDEC J-STD-020D after test done, PN is updated to CSET8.5L3.6-17-2.7-5F	Sun Hailian	6/11/2009
1-2013	Added PCB Layout	Ely Zofan	8/19/2013
2-2013	Corrected PCB Layout	Ely Zofan	9/3/2013
3-2013	Corrected PCB Layout in relationship to Dimension Drawing	Ely Zofan	10/25/2013
4-2016	Changed operating range from 2-7 to 2-4 V	WS	2/11/2016