




# PRODUCT INFORMATION

<b>PART #</b>	<b>CSET8.5M3.6-17-2.7F</b>	<b>Revision: 0-2011</b>
---------------	----------------------------	-------------------------



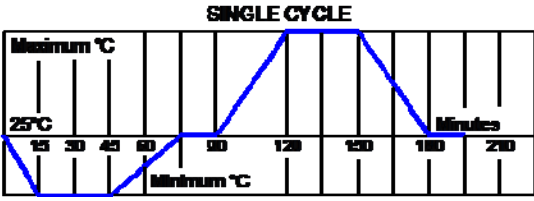
## SMD Electro-Magnetic Sound Transducer

<b>DESCRIPTION</b>	<b>FEATURES</b>	
<p><b>Challenge Electronics Electro-Magnetic Transducer, 8.5 mm Square, M type SMD case (Square, TOP Sound Port), 4.0mm Height, 17 Ohms coil resistance, 2 to 4 Vo-p operation 2,710 Hz Resonant Frequency, with a minimum output of 78 dB(A) at,10cm. M type SMD Termination, RoHS Lead Free compliant</b></p>	<ul style="list-style-type: none"> <li>• RoHS, Lead Free Compliant</li> <li>• ISO 9001</li> </ul>	

### SPECIFICATIONS

<b>Resonant Frequency</b>	<b>2,710 ± 10% Hz.</b>	<b>Coil Impedance</b>	<b>17 ± 3 Ohms</b>
<b>Operating Voltage</b>	<b>2.0 - 4.0 Vo-p</b>	<b>Rated Voltage</b>	<b>3.6 Vo-p</b>
<b>Sound Pressure Level</b>	<b>90 dB(A), at: rated Voltage, 10 cm, Resonant Frequency, Square wave, 50% Duty Cycle</b>		
<b>Maximum Current</b>	<b>80 mA, at rated Voltage, Resonant Frequency, Square wave, 50% Duty Cycle</b>		
<b>Operating Temperature</b>	<b>-30°C to + 85°C</b>	<b>Storage Temperature</b>	<b>-40°C to + 90°C</b>
<b>Termination</b>	<b>SMD, M type, 4 soldering pads, Sn plated Brass</b>		
<b>Material</b>	<b>Case</b>	<b>M type SMD, Plastic, LCP VECTRA 130i</b>	
	<b>Diaphragm</b>	<b>Ni Alloy Disc N50</b>	<b>Back Sealed</b> <b>Epoxy</b>
<b>Sound Port Direction</b>	<b>Top</b>	<b>Case Standoffs from PCB</b>	<b>No</b> <b>Removable Washing Label</b> <b>No</b>
<b>Physical Dimensions</b>	<b>Length or Diameter (L /D)</b>	<b>8.5 mm</b>	<b>Width (W)</b> <b>8.5 mm</b> <b>Height (H)</b> <b>4.0 mm</b>
<b>Approximate Weight</b>	<b>0.6 grams</b>	<b>Compliance</b>	<b>RoHS, Lead Free</b>
<b>Options</b>			

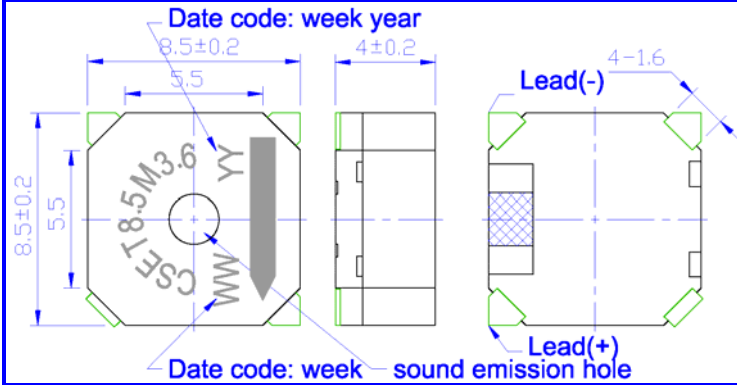
### RELIABILITY

<b>Thermal Operating Temperature Test</b>	240 hours continuous operation <b>at Rated Voltage</b> , at Maximum Rated Operating Temperature *	
	240 hours continuous operation <b>at Rated Voltage</b> , at Minimum Rated Operating Temperature *	
<b>Thermal Storage Temperature Test</b>	240 hours storage at Maximum Rated Storage Temperatures *	
	240 hours storage at Minimum Rated Storage Temperatures *	
<b>Thermal Shock Test</b>	<p>5 cycles of Minimum and Maximum Operating Temperature          Each cycle shall be set per diagram below and is three (3) hours long *</p> <div style="text-align: right;">  </div>	
<b>Humidity Test</b>	240 Hours at +40°C±2°C. 90-95% RH *	
<b>Insulation Test</b>	A minimum of 10 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case	
<b>Vibration Test</b>	2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *	
<b>Termination Strength</b>	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds	
<b>Drop Test</b>	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) *	
<b>Solderability</b>	Terminal leads are immersed in rosin for 5 seconds and then immersed in solder-bath of +270°C for 3±1 seconds	
<b>Soldering Heat Resistance</b>	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	
<b>Reliability Test Performance</b> *	<b>Parts should conform to original performance within ±3dB, after 3 hours of recovery period.</b>	
<b>Operation Life Test</b>	<b>Continuous</b>	240 hours of continuous operation, at Rated Voltage, each at Minimum & Maximum Rated Operating Temperatures
	<b>Intermittent</b>	One thousand (1,000) hours of: 1 minute <b>ON</b> 4 minutes <b>OFF</b> cycle, at Room Temperature, and Rated Voltage
<b>Warranty</b>	For a period of one (1) year from date of shipping under normal operations conditions	

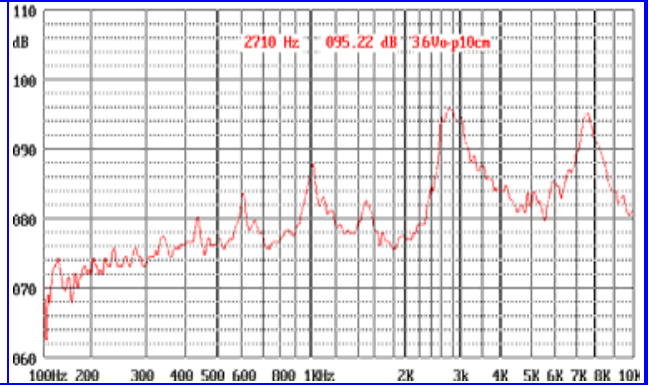


**DIMENSIONS**

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



**SPL vs. FREQUENCY RESPONSE**

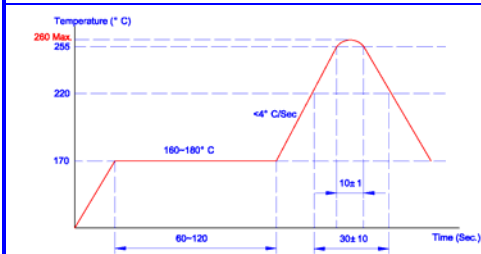


**RECOMMENDED LAND PATTERN**

**STORAGE**

- 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.
- Exposure:** Devices should not be exposed to high humidity high temperature environment. MSL (moisture sensitivity level) Class 2

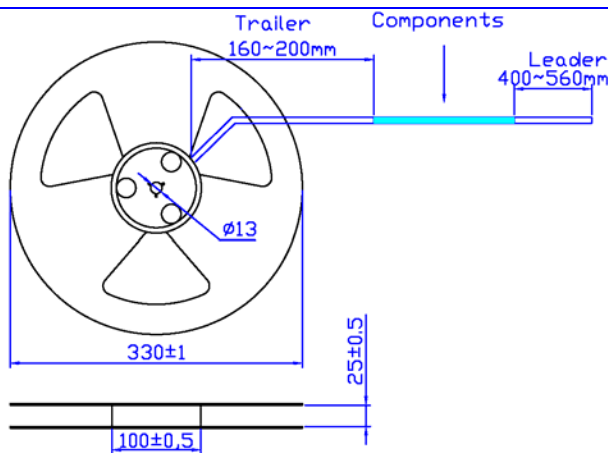
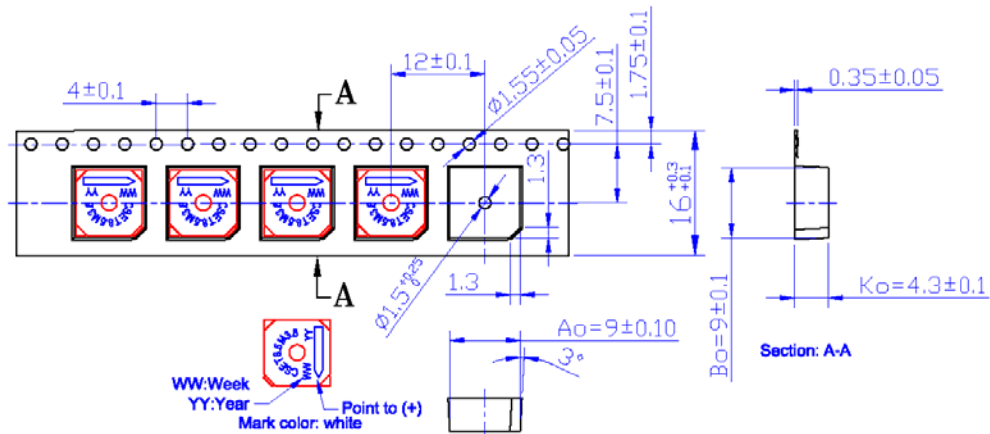
**SOLDER REFLOW PROFILE**



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

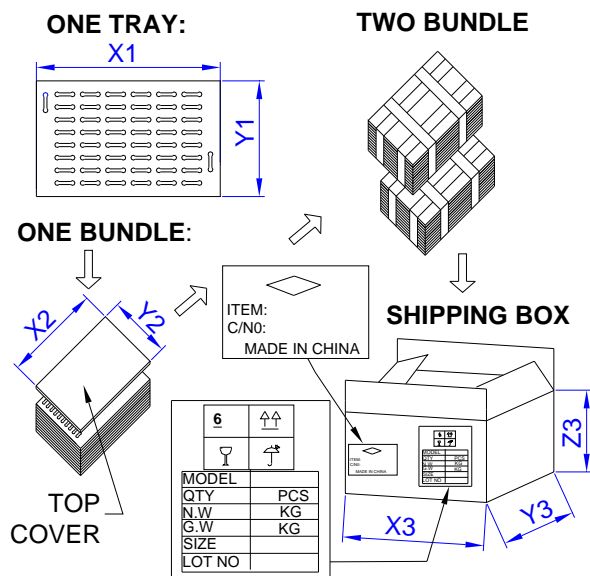


### TAPE & REEL DIMENSIONS (Unit: mm)



1. 10 pocket holes pitch cumulative tolerance  $\pm 0.20$  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 1,200 parts

### PACKAGING



### MARKING

Bundle		TRAY	
Customer PN	Dimensions	X1	cm
Quantity		Y1	cm
Lot and/or Date Code		Z1	cm
Bundle Number	Quantity	1,200	
Shipping Box		BUNDLE	
Customer Part Number	Dimensions	X2	cm
Other PN (if required)		Y2	cm
Quantity		Z2	cm
Lot and/or Date Code	Quantity		
Shipping Box		SHIPPING BOX	
PO Number	Dimensions	X3	cm
Net Weight		Y3	cm
Gross Weight		Z3	cm
Box Number	Number of Bundles		
of Number of Boxes	Quantity		
<b>Made in China</b>	Approximate Weight		