



PRODUCT INFORMATION

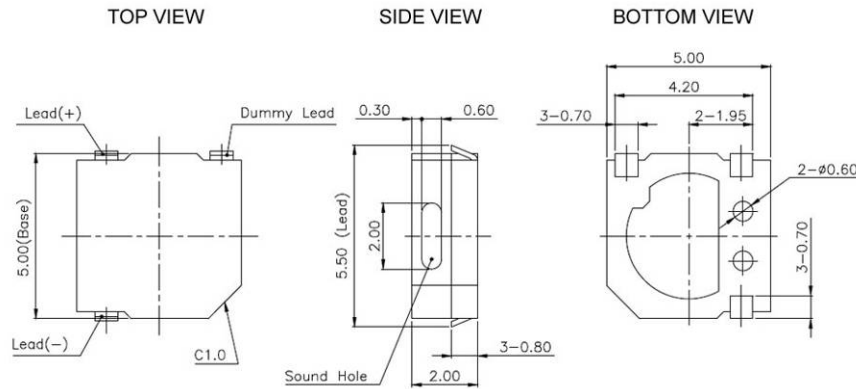
PART #	CET050R020-12-205-40MR				Revision: 0-2012	
	SMD Electro-Magnetic Sound Transducer					
DESCRIPTION				FEATURES		
<p>Challenge Electronics Electro-Magnetic Transducer, 5.0 mm Long, 5.0 mm Wide, R type SMD case (Square, SIDE Sound Port), 2.0 mm Height, 12 Ohms coil resistance, 2 to 5 Vop operation 4,000 Hz Resonant Frequency, with a Typical Sound Pressure output of 78 dB(A) at 10 cm Rated Voltage, M type SMD Termination, RoHS Lead Free compliant</p>				<ul style="list-style-type: none"> ● Flame Retardant Plastic ● RoHS, Lead Free Compliant ● ISO 9001 		
SPECIFICATIONS						
Resonant Frequency	4,000 Hz.		Coil Impedance	12 ± 2 Ohms		
Operating Voltage	2.0 - 5.0 Vop		Rated Voltage	3.0 Vop		
Minimum SPL	78 dB(A), at rated Voltage, 10 cm, Resonant Frequency, Square wave, 50% Duty Cycle					
Maximum Current	100 mA, at rated Voltage, Resonant Frequency, Square wave, 50% Duty Cycle					
Operating Temperature	-30°C to + 70°C		Storage Temperature	-40°C to + 85°C		
Material	Case	Plastic, LCP Vectra E130i		Sound Port Direction	Side	
	Diaphragm	Ni Alloy Disc N50 or equal		Termination	SMD, 3 soldering pads, Sn plated Brass	
	Encapsulation	Plastic back				
Physical Dimensions	Length or Diameter (L /D)	5.0 mm		Width (W)	5.0 mm	Height (H) 2.0 mm
Approximate Weight	0.12 grams	Removable Washing Label	No		Compliance	RoHS, Lead Free
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	<p>5 cycles of Minimum and Maximum Operating Temperature Each cycle shall be set per diagram and is 3 hours long *</p>			<p style="text-align: center;">SINGLE CYCLE</p>		
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) *					
* Reliability Test Performance	Parts should conform to original performance within ±3dB, after 3 hours of recovery period					
Life Test	Intermittent	1,000 hours of a 1 minute on 4 minutes off cycle at room temperature and maximum rated voltage				
	Continuous	250 hours continuous operation at maximum rated Voltage and maximum Operating Temperatures				
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					



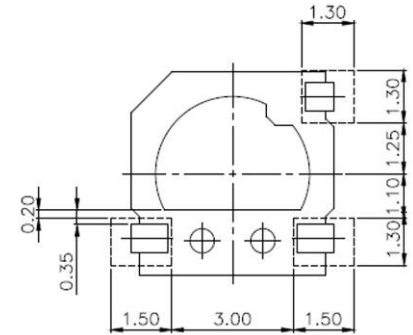


DIMENSIONS

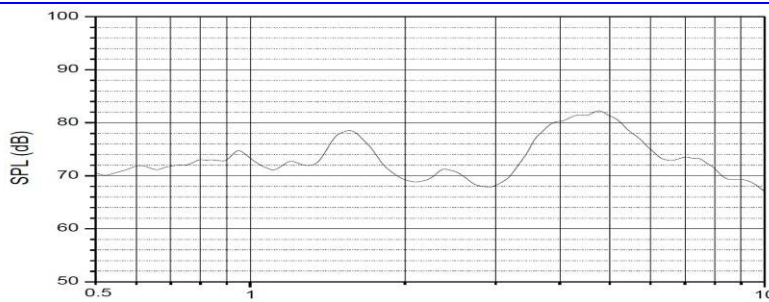
Units in: mm, Tolerance: $\pm 0.5\text{mm}$ unless specified otherwise.



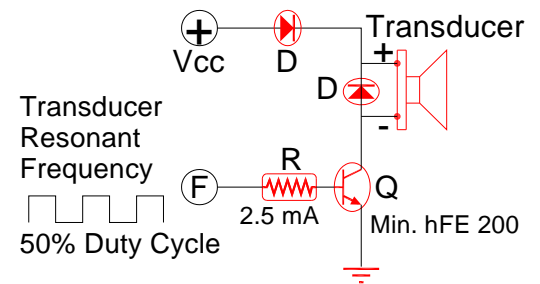
RECOMMENDED LAND PATTERN



SPL vs. FREQUENCY RESPONSE



RECOMMENDED DRIVING CIRCUIT



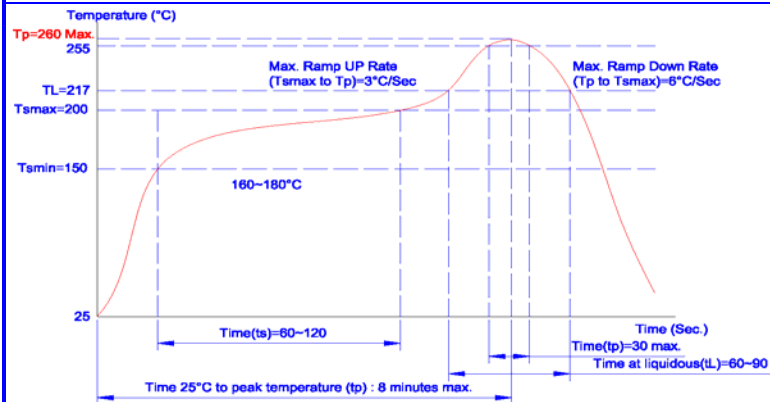
STORAGE

- 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

ENVIRONMENTAL IMPACT

Ozone guarantee: Certificate on the elimination of ozone layer destroying substances such as Freon

SOLDER REFLOW PROFILE as per IPC/JEDEC J-STD-020D



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

Washing Conditions

This product CAN NOT be sealed for washing

Flux Removing Solvents

In the view of the recent requirement for total elimination of ozone-depleting chemicals, we have decided to recommend our customers to use deionized water for their cleaning process at the condition given below instead of "CFC" that was conventionally used.

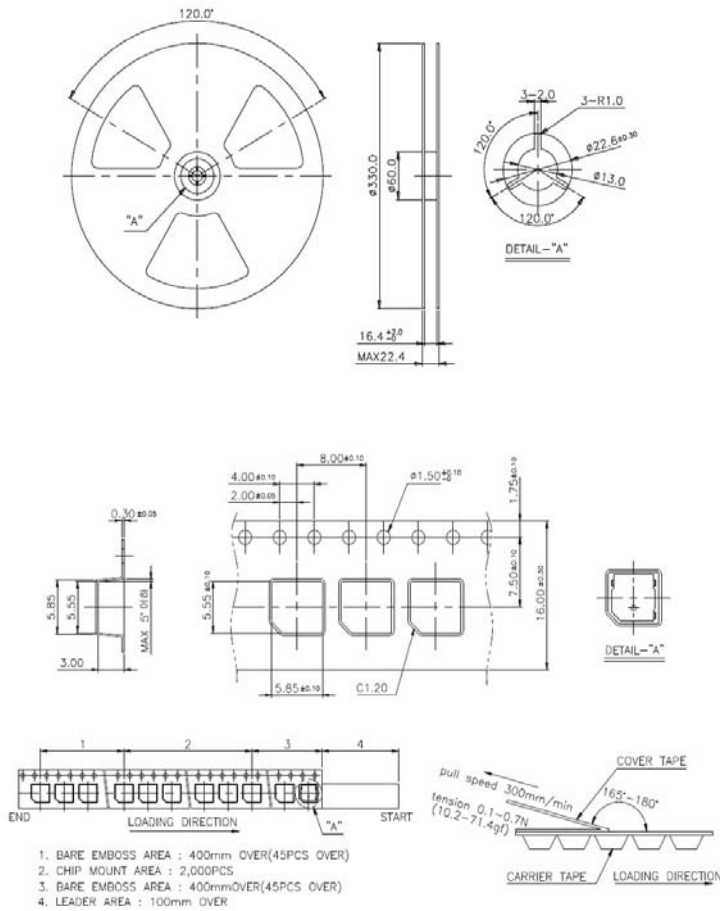
Cleaning solvent: deionized water
Solvent temperature: $55 \pm 5^\circ\text{C}$
Immersion time: 5 ± 0.5 minutes

Date Code Marking

Date Code is marked by 3 characters, 2 NUMERICAL Characters designate the Production Year and 1 ALPHA Character Represent the Production Month

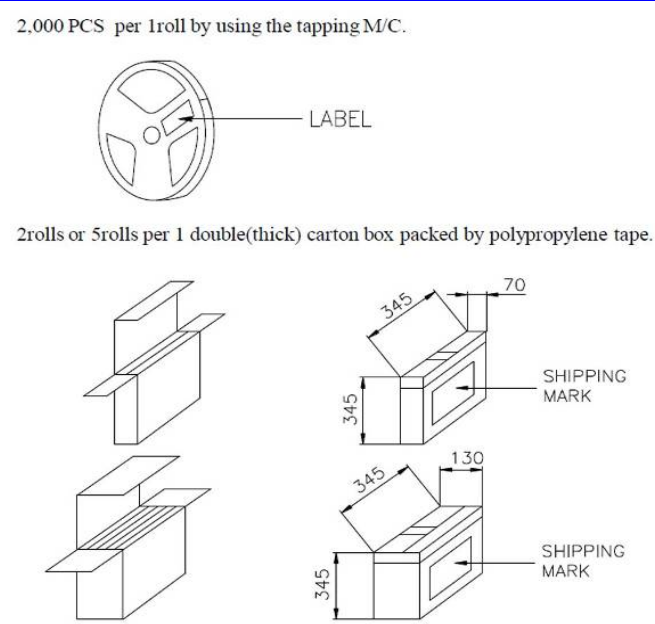


TAPE & REEL DIMENSIONS (Unit: mm)



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

PACKAGING



MARKING		REEL BOX	
Reel Box			
Part Number	Dimensions	X1	34 cm
Lot and/or Date Code		Y1	7 cm
		Z1	34 cm
	Quantity	2,000	
Quantity		SHIPPING BOX 2 Rolls	
Shipping Box			
Customer Part Number	Dimensions	X2	34.5 cm
Other PN (if required)		Y2	7 cm
		Z2	34.5 cm
Quantity	Quantity	4,000	
Lot and/or Date Code	Approximate Weight		
PO Number	SHIPPING BOX 5 Rolls		
Net Weight	Dimensions	X3	34.5 cm
Gross Weightjt		Y3	13 cm
Box Number		Z3	34.5 cm
of Number of Boxes	Quantity	10,000	
Made in China	Approximate Weight		

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