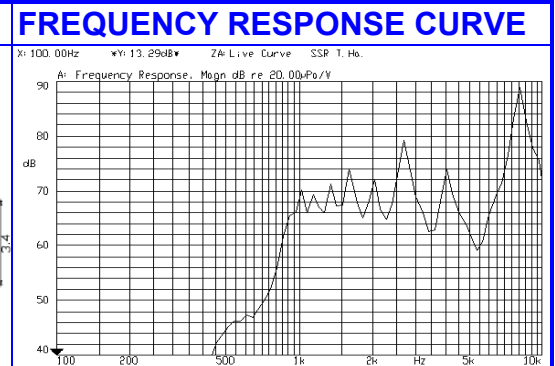
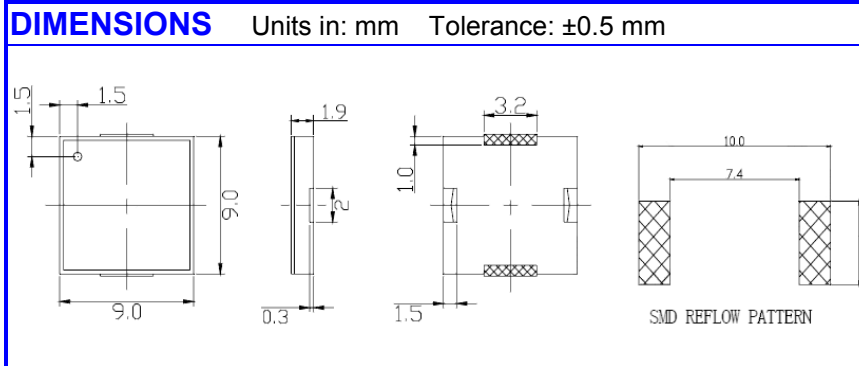


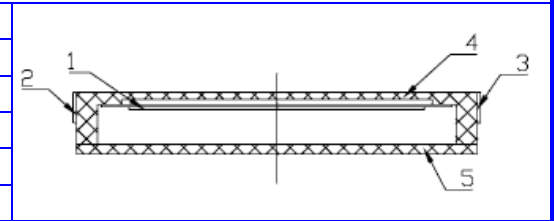


| PRODUCT INFORMATION   |  |  |  |                 |                      |                                    |
|---|--|--|--|-----------------|----------------------|------------------------------------|
| PART #:   |  | <b>CEPT090L019-125-40MR</b>  |  |                 |                      | Revision: <b>0-2014</b>            |
|   |  | <b>SMD Piezoelectric Transducer</b>  |  |                 |                      |                                    |
| <b>DESCRIPTION</b>  |  |  | <b>FEATURES</b>  |                 |                      |                                    |
| Challenge Electronics Piezoelectric Transducer; <b>9.0</b> mm Length; L style case (side port); <b>1.9</b> mm High; <b>1</b> to <b>25</b> Vp-p Operating Voltage; <b>4,000</b> Hz. Resonant Frequency; minimum Sound output of <b>70</b> dB(A) min at <b>10</b> cm at Rated Voltage; <b>SMD</b> Termination, RoHS, Lead Free and REACH Compliance |  |  | <ul style="list-style-type: none"> <li>• RoHS, Lead Free Compliant</li> <li>• REACH Compliant</li> <li>• ISO 9001 Certified</li> </ul> |                 |                      |                                    |
| <b>SPECIFICATIONS</b>   |  |  |  |                 |                      |                                    |
| Operating Voltage   |  | 1- 25 Vp-p   | Nominal Rated Voltage  | 3 Vp-p          | Resonant Frequency   | 4,000 Hz.                          |
| Sound Pressure Level  |  | Minimum 70dB(A), at 10cm, Resonant Frequency, Nominal rated Voltage, Square Wave 50% Duty Cycle  |  |                 |                      |                                    |
| Operating Current   |  | Maximum 1 mA, at: Resonant Frequency, Nominal rated Voltage, Square Wave   |  |                 |                      |                                    |
| Operating Temperature   |  | -30°C to +70°C   | Storage Temperature  | -40°C to + 85°C | Capacitance          | 12,000 ± 30% pFD at 120 Hz. 1 Vrms |
| Material  |  | Housing  |  |                 | Sound Port Direction |                                    |
|   |  | Plastic, LCP Vectra E130i or equal   |  |                 | Side                 |                                    |
|   |  | Element  |  |                 | Encapsulation        |                                    |
|   |  | Termination  |  |                 | SMD                  |                                    |
| Physical Dimensions   |  | Length (L)   | 9.0 mm ± 0.5 mm  | Width (W)       | 9.0 mm ± 0.5 mm      | Height (H) 1.9 mm ± 0.5 mm         |
| Approximate Weight  |  | 0.2 grams  | Removable Washing Label  | No              | Compliance           | RoHS, Lead Free and REACH          |
| Packaging   |  |  |  |                 |                      |                                    |
| <b>RELIABILITY</b>  |  |  |  |                 |                      |                                    |
| 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<br>Each cycle shall be set per diagram and is 3 hours long *   |  |                 |                      |                                    |
| Humidity Test   |  | 96 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) *  |  |                 |                      |                                    |
| * 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   |  |                 |                      |                                    |
|   |  | 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<br>This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair |  |                 |                      |                                    |

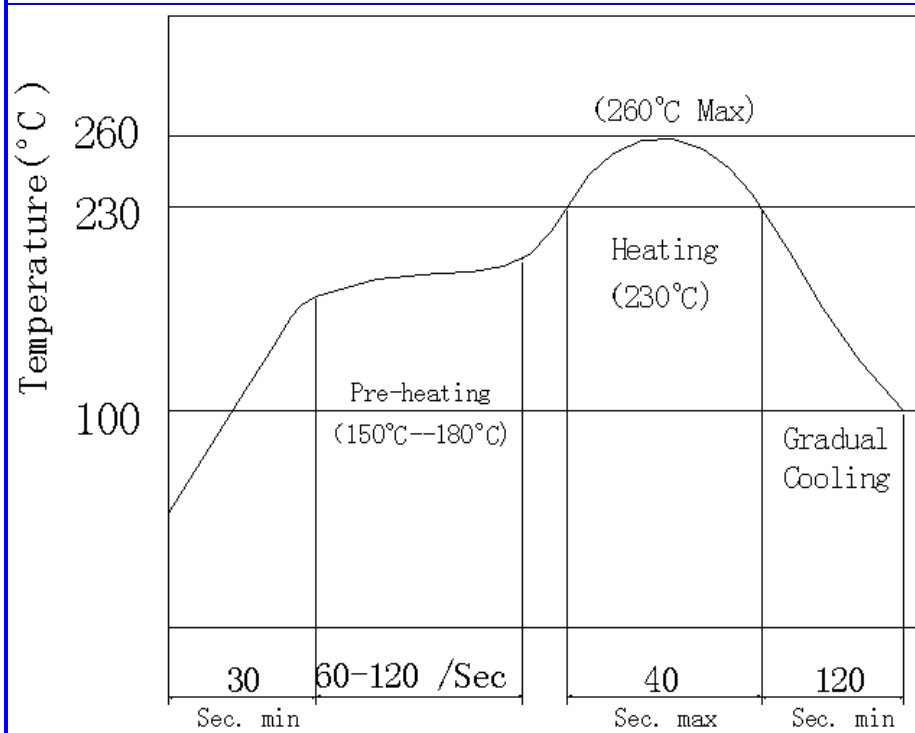


**ASSEMBLY**

|        |               |          |
|--------|---------------|----------|
| 5      | Cover         | 1        |
| 4      | Housing       | 1        |
| 3      | Pin           | 1        |
| 2      | Pin           | 1        |
| 1      | Piezo Element | 1        |
| Number | Part Name     | Quantity |

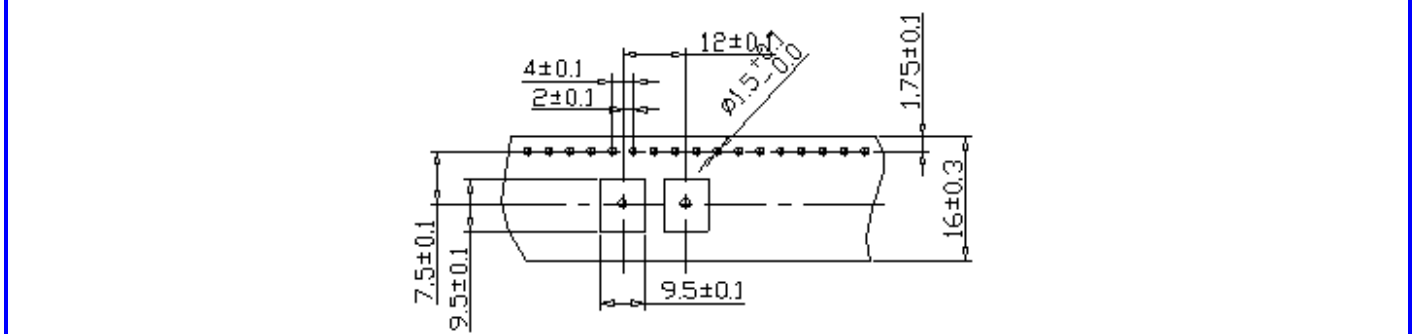


**SOLDER REFLOW PROFILE**



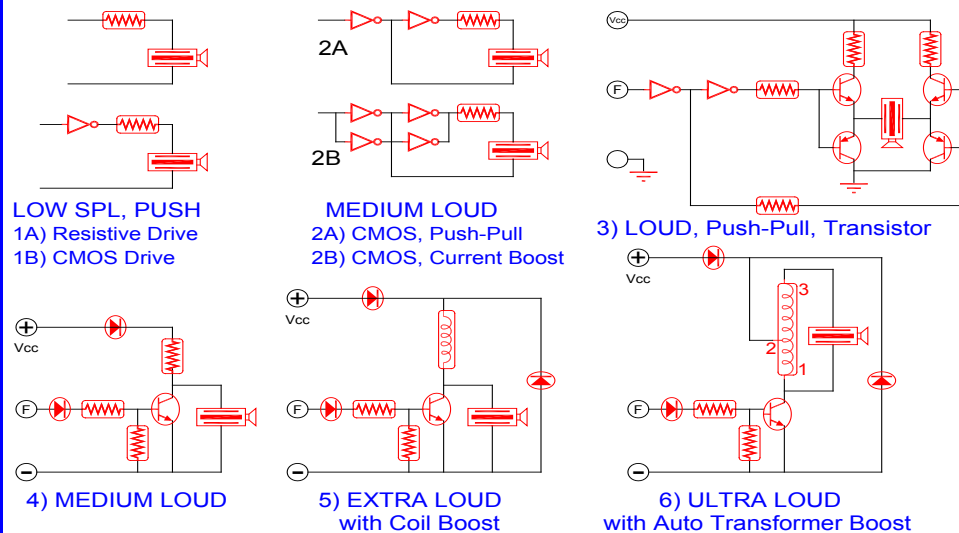
| Stage                 | Temperature Profile | Maximum Time |
|-----------------------|---------------------|--------------|
| Pre-heat              | 150~200°C           | 120 sec      |
| Solder Melt           | Above 230°C         | 40 sec       |
| Peak                  | 260°C Maximum       |              |
| Cool Down             |                     | 120 sec      |
| Total Duration Period |                     |              |

**TAPE INFORMATION**





**RECOMMENDED CIRCUIT DRIVE**



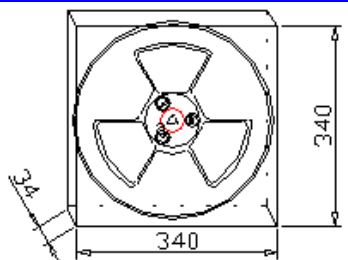
**STORAGE**

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

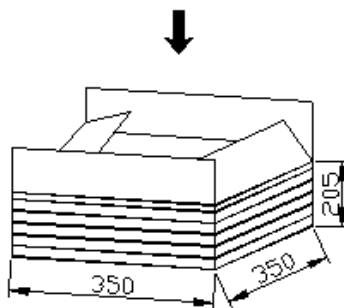
**SUBSTANCE OF VERY HIGH CONCERN**

This product does NOT contain any of the REACH Substances of Very High Concern (SVHC), and is in compliance with European Union REACH Regulation No.1907/2006 regarding chemical substances which must be registered or disclosed.

**PACKAGING**



1ROLL CARRIER REEL/INNER BOX;



10000PCS/CTN

|                           |                     |                |                |
|---------------------------|---------------------|----------------|----------------|
| <b>MARKING</b>            |                     | <b>Reel</b>    |                |
| <b>Reel</b>               | Reel Diameter       |                |                |
| Part Number               | Quantity            | <b>2,000</b>   |                |
| Quantity                  | <b>Inner Box</b>    |                |                |
| Lot and/or Date Code      | Dimensions          | X              | <b>34 cm</b>   |
| <b>Shipping Box</b>       |                     | Y              | <b>34 cm</b>   |
| Part Number               |                     | Z              | <b>3.4 cm</b>  |
| Customer PN (if required) | Quantity            | <b>5 Reels</b> |                |
| Quantity                  | <b>Shipping Box</b> |                |                |
| Lot and/or Date Code      | Dimensions          | X              | <b>35 cm</b>   |
| PO Number                 |                     | Y              | <b>35 cm</b>   |
| Net Weight                |                     | Z              | <b>20.5 cm</b> |
| Gross Weight              | Number of Bundles   |                |                |
| Box Number of Boxes       | Quantity            | <b>10,000</b>  |                |
|                           | Approximate Weight  | <b>Kg</b>      |                |
| <b>Made in</b>            |                     |                | <b>China</b>   |

|                 |                    |            |              |
|-----------------|--------------------|------------|--------------|
| <b>Revision</b> | <b>Description</b> | <b>By:</b> | <b>Date:</b> |
|                 |                    |            |              |
|                 |                    |            |              |