**Challenge Electronics**
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# PRODUCT INFORMATION

| PART # | CEEB128N095-815C23MR | Revision: 1-2012 |
|---|---|---|

## SMD Electro-Magnetic Buzzer

## DESCRIPTION

**C**hallenge **E**lectronics **E**lectro-**M**agnetic **B**uzzer, **12.8** mm Square, **N** type SMD case (Square, Top Sound Port), **9.5** mm Height, **8** to **15** Vdc operation, **C**ontinuous Tone **2,300** Hz Resonant Frequency, with a minimum output of 85 dB(A) at,10cm Rated Voltage. **M** type SMD Termination, **R**oHS Lead Free compliant

## FEATURES

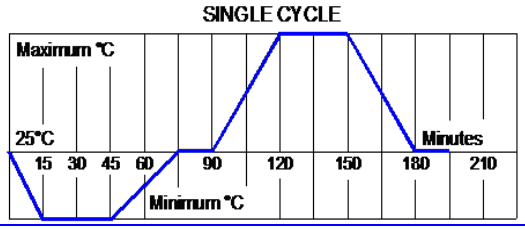
- **RoHS, Lead Free Compliant**
- **ISO 9001**

## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Sound Type** | **Continuous Tone** | | **Resonant Frequency** | **2,300 ± 300 Hz.** | |
| **Operating Voltage** | **8.0 - 15.0 Vdc** | | **Rated Voltage** | **12.0 Vdc** | |
| **Sound Pressure Level** | **Minimum 85 dB(A), at rated Voltage, 10 cm, Square wave, 50% Duty Cycle** | | | | |
| **Maximum Current** | **30 mA, at rated Voltage, Resonant Frequency, Square wave, 50% Duty Cycle** | | | | |
| **Operating Temperature** | **-30ºC to + 85ºC** | | **Storage Temperature** | **-40ºC to + 90ºC** | |
| **Material** | **Case** | **Plastic, PPS** | | **Sound Port Direction** | **Top** |
| | **Diaphragm** | **Ni Alloy Disc N42 or equal** | **Termination** | **SMD, 2 soldering pads, Sn plated Brass** | |
| | **Encapsulation** | **Epoxy** | | | |
| **Physical Dimensions** | **Length or Diameter (L /D)** | **12.8 mm** | **Width (W)** | **12.8 mm** | **Height (H)** **10.0 mm** |
| **Approximate Weight** | **3 grams** | **Removable Washing Label** | **No** | **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** | | 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** | | 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 |
| **Termination Strength** | | Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds |
| **Vibration Test** | | 2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions * |
| **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) * |
| **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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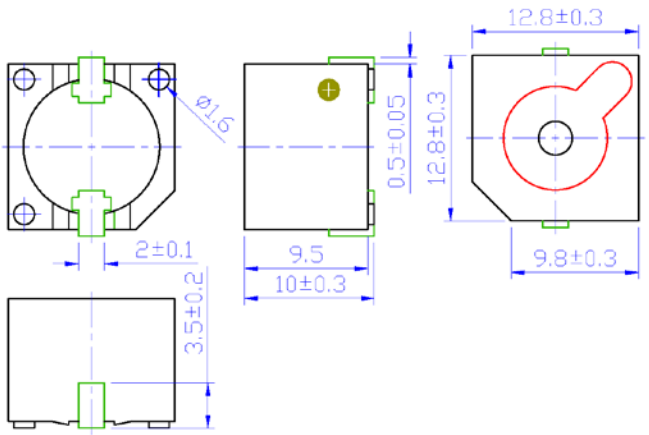
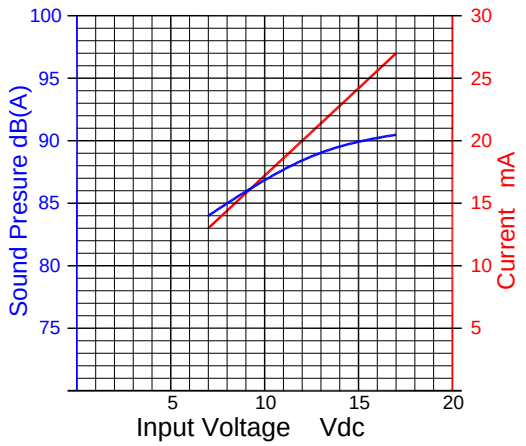
## DIMENSIONS

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




## SPL vs. FREQUENCY RESPONSE

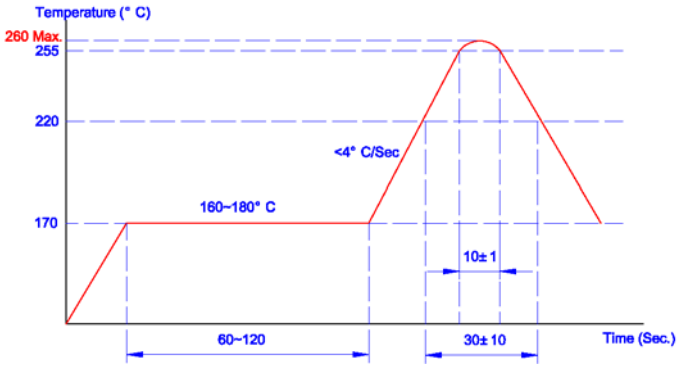



## Recommended Land Pattern:

## 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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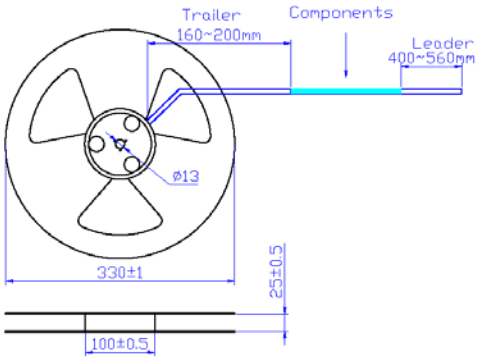
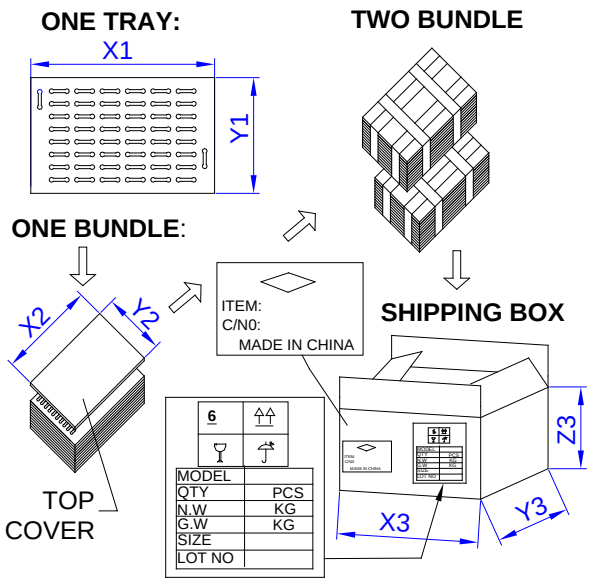
## TAPE and REEL INFORMATION




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 0.3mm 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 4.8 meters per "reel: parts

## PACKAGING




| MARKING | Reel | | |
|---|---|---|---|
| **Bundle** | Dimensions | **X1** | **cm** |
| Customer PN | | **Y1** | **cm** |
| Quantity | | **Z1** | **cm** |
| Lot and/or Date Code | Quantity | | **260** |
| Bundle Number | **Box** | | |
| **Shipping Box** | Dimensions | **X2** | **cm** |
| Customer Part Number | | **Y2** | **cm** |
| Other PN (if required) | | **Z2** | **cm** |
| Quantity | Quantity | | **2,600** |
| Lot and/or Date Code | **SHIPPING BOX** | | |
| PO Number | Dimensions | **X3** | **36 cm** |
| Net Weight | | **Y3** | **35 cm** |
| Gross Weighjt | | **Z3** | **36.5 cm** |
| Box Number | Number of Bundles | | **1** |
| of Number of Boxes | Quantity | | **2,600** |
| **Made in China** | Approximate Weight | | |