

**MODEL:** CMC-4013-SMT-TR | **DESCRIPTION:** ELECTRET CONDENSER MICROPHONE

**FEATURES**

- omnidirectional
- low profile
- surface mount
- tape and reel packaging

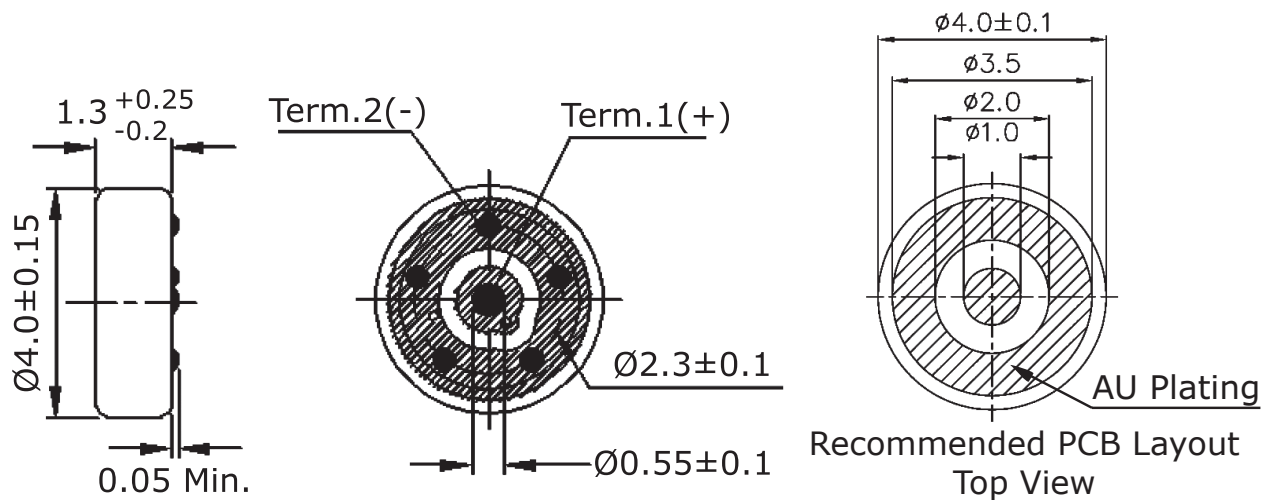

**SPECIFICATIONS**

| parameter                       | conditions/description              | min | typ | max    | units |
|---------------------------------|-------------------------------------|-----|-----|--------|-------|
| directivity                     | omnidirectional                     |     |     |        |       |
| sensitivity (S)                 | f = 1 kHz, 1 Pa, 0 dB = 1 V/Pa      | -45 | -42 | -39    | dB    |
| standard operating voltage (Vs) |                                     |     | 2   |        | Vdc   |
| max operating voltage           |                                     |     |     | 10     | Vdc   |
| output impedance (Zout)         | f = 1 kHz, 1 Pa                     |     | 2.2 |        | kΩ    |
| sensitivity reduction (ΔS-Vs)   | f = 1 kHz, 1 Pa, Vs = 2.0 ~ 1.5 Vdc |     | -3  |        | dB    |
| frequency (f)                   |                                     | 100 |     | 20,000 | Hz    |
| current consumption (IDSS)      | Vs = 2.0 Vdc, RL = 2.2 kΩ           |     |     | 0.5    | mA    |
| signal to noise ratio (S/N)     | f = 1 kHz, 1 Pa, A-weighted         |     | 58  |        | dBA   |
| dimensions                      | Ø4.0 x 1.3                          |     |     |        | mm    |
| material                        | Al                                  |     |     |        |       |
| terminal                        | SMT type                            |     |     |        |       |
| weight                          |                                     |     |     | 0.04   | g     |
| operating temperature           |                                     | -20 |     | 70     | °C    |
| storage temperature             |                                     | -20 |     | 70     | °C    |
| RoHS                            | 2011/65/EU                          |     |     |        |       |

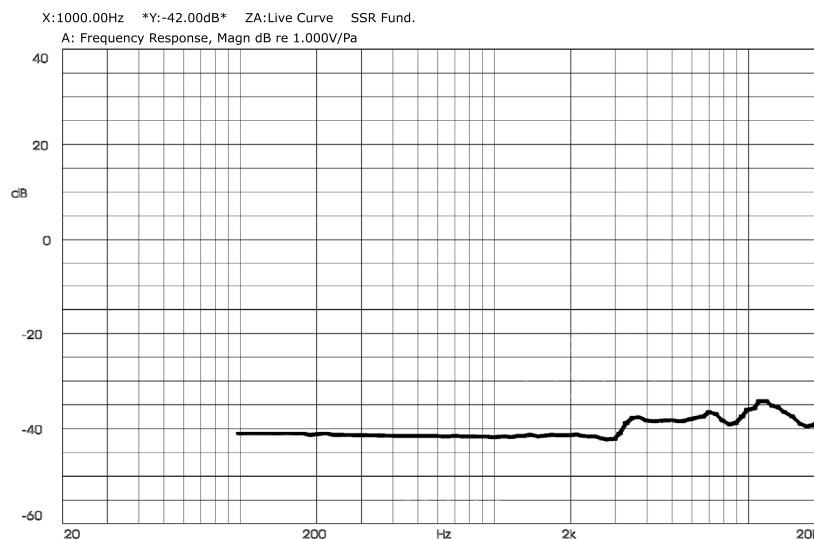
Notes: 1. We use the "Pascal (Pa)" indication of sensitivity as per the recommendation of I.E.C. (International Electrotechnical Commission). The sensitivity of "Pa" will increase 20 dB compared to the "ubar" indication. Example: -60 dB (0 dB = 1 V/ubar) = -40 dB (1V/Pa)  
 2. All specifications measured at 5~35°C, humidity at 45~85%, under 86~106 kPa pressure, unless otherwise noted.

## MECHANICAL DRAWING

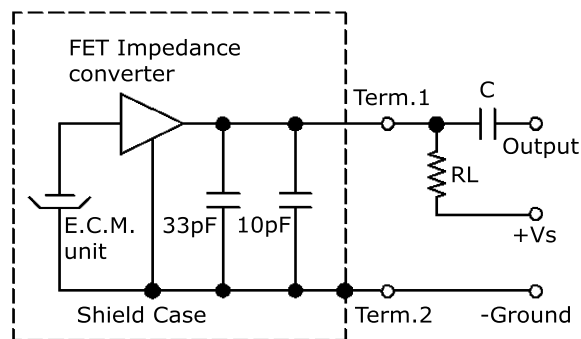
units: mm



## FREQUENCY RESPONSE CURVE



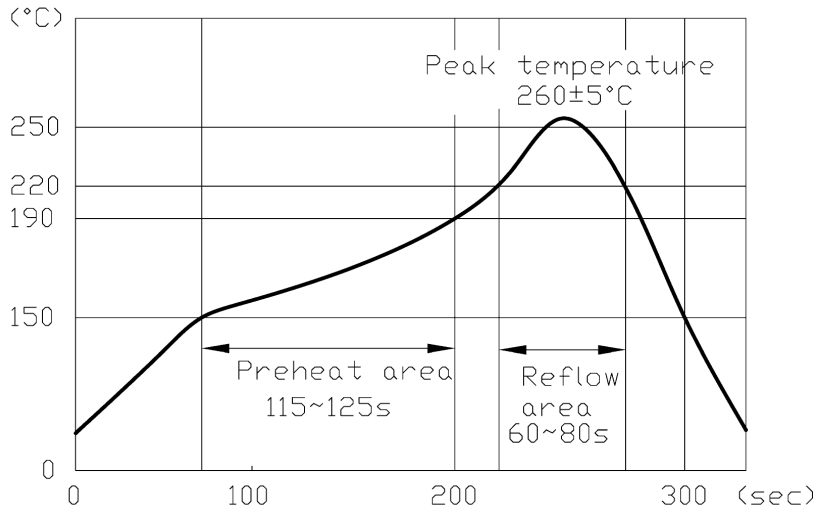
## MEASUREMENT CIRCUIT



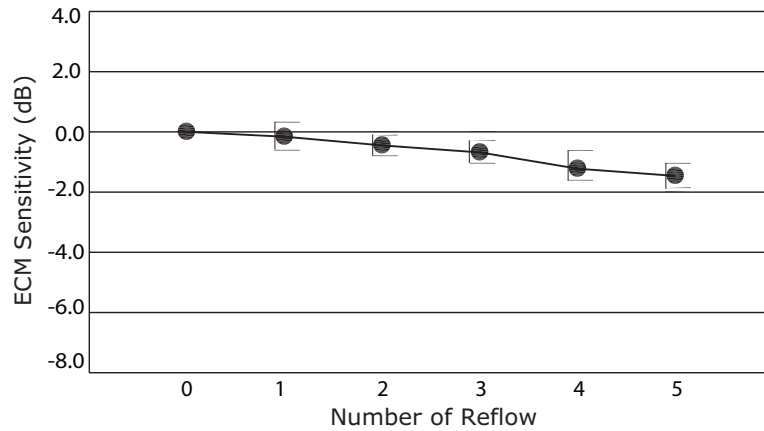
$RL = 2.2 \text{ k}\Omega$   
 $C = 1 \mu\text{F}$

## SOLDERABILITY

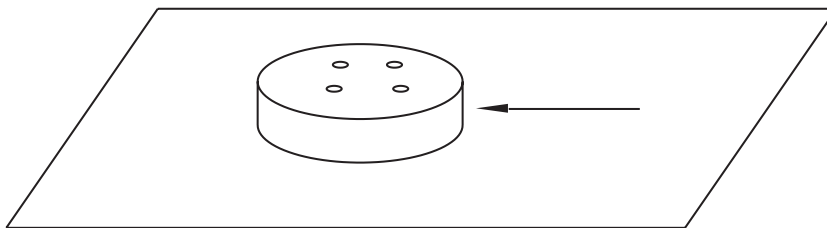
| parameter        | conditions/description       | min | typ | max | units |
|------------------|------------------------------|-----|-----|-----|-------|
| reflow soldering | see reflow soldering profile | 255 | 260 | 265 | °C    |



### Number of Reflow vs. ECM Sensitivity



### Horizontal Loading

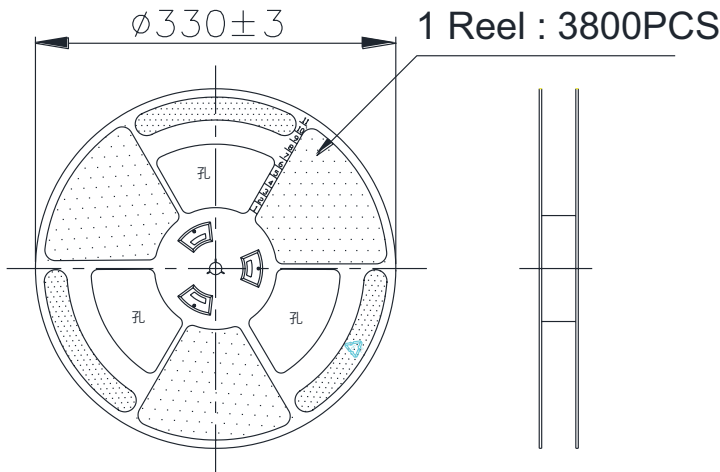
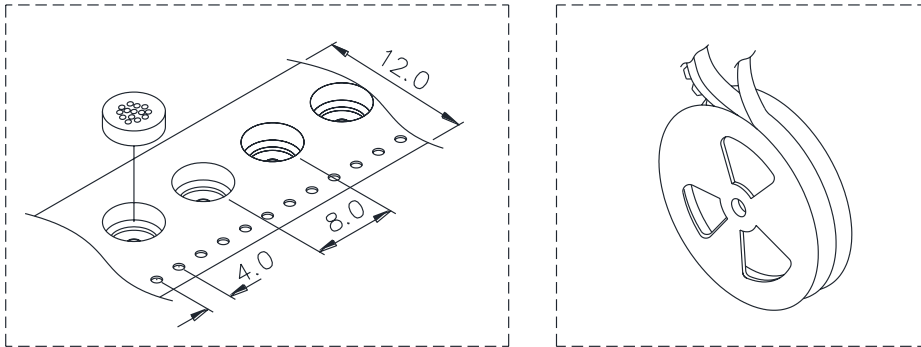


Note: 1. When soldered to PCB, must have >10 N resistance to horizontal loading.

## PACKAGING

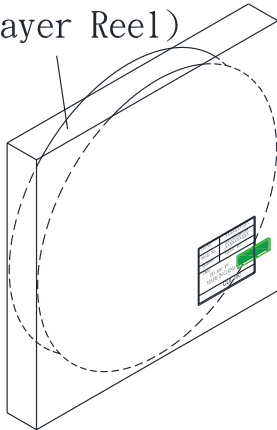
units: mm

Reel Size: Ø330 mm  
 Inner Box Size: 340 x 340 x 30 mm  
 Carton Box Size: 340 x 170 x 340 mm  
 Reel QTY: 3,800 pcs per reel  
 Inner Box QTY: 3,800 pcs per box  
 Carton Box QTY: 19,000 pcs per carton

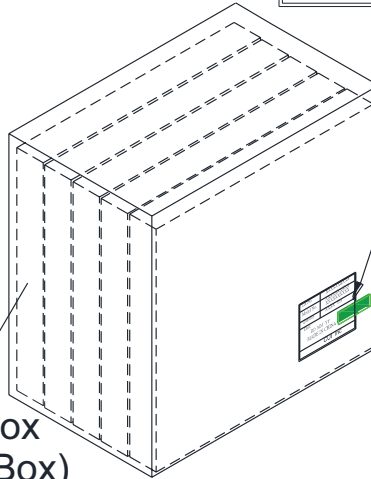


|           |                          |
|-----------|--------------------------|
| Lot No.   | XXXXXXXXXX               |
| Model No. | XXXXXXXXXX<br>XXXXXXXXXX |
| Quantity. | XXXX Pcs                 |
| Date:     | DD MM YY                 |
|           | RoHs Compliant           |
|           | MADE IN CHINA            |
|           | CUI Inc                  |

Inner Box  
(1 Layer Reel)



Carton Box  
(5 Inner Box)



## REVISION HISTORY

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| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 11/28/2016 |

The revision history provided is for informational purposes only and is believed to be accurate.



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CUI offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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