

**PART NUMBER:** CMA-4544PF-W

**DESCRIPTION:** electret condenser microphone

## SPECIFICATIONS

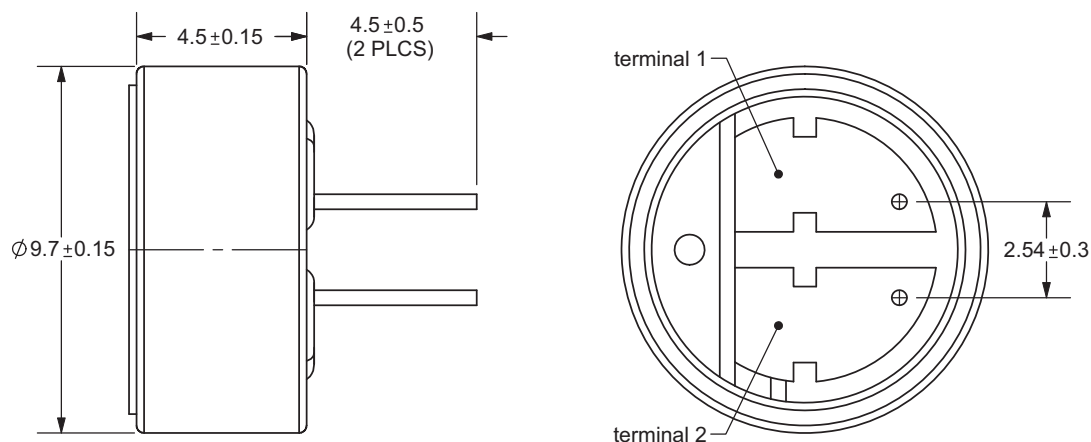
|                               |                                   |                                   |
|-------------------------------|-----------------------------------|-----------------------------------|
| directivity                   | omnidirectional                   |                                   |
| sensitivity (S)               | -44 ±2 db                         | f = 1KHz, 1Pa 0dB = 1V/Pa         |
| sensitivity reduction (ΔS-Vs) | -3 dB                             | f = 1KHz, 1Pa Vs = 3.0 ~ 2.0 V dc |
| operating voltage             | 3 V dc (standard), 10 V dc (max.) |                                   |
| output impedance (Zout)       | 2.2 KΩ                            | f = 1KHz, 1Pa                     |
| operating frequency (f)       | 20 ~ 20,000 Hz                    |                                   |
| current consumption (IDSS)    | 0.5 mA max.                       | Vs = 3.0 V dc RL = 2.2KΩ          |
| signal to noise ratio (S/N)   | 60 dBA                            | f = 1KHz, 1Pa A-weighted          |
| operating temperature         | -20 ~ +70° C                      |                                   |
| storage temperature           | -20 ~ +70° C                      |                                   |
| dimensions                    | ø9.7 x 4.5 mm                     |                                   |
| weight                        | 0.80 g max.                       |                                   |
| material                      | Al                                |                                   |
| terminal                      | pin type (hand soldering only)    |                                   |
| RoHS                          | yes                               |                                   |

note:

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 20dB compared to the "ubar" indication. Example: -60dB (0dB = 1V/ubar) = -40dB (1V/Pa)

## APPEARANCE DRAWING

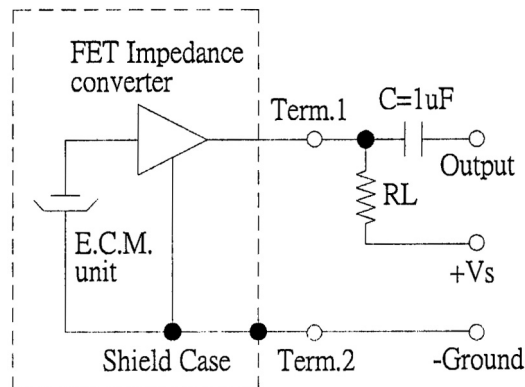
tolerances not shown: ±0.3mm



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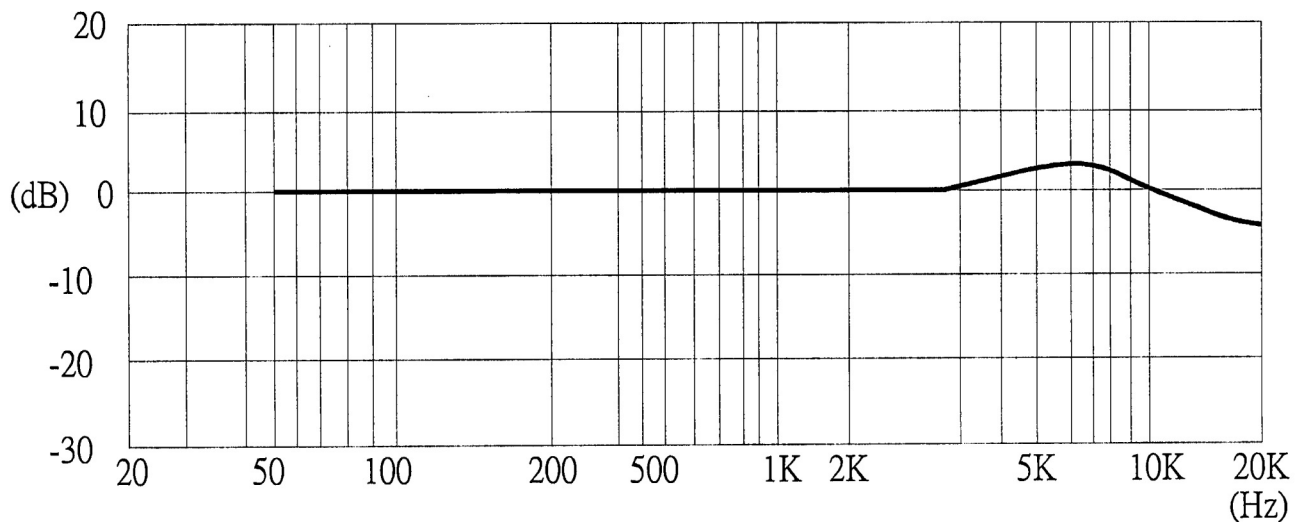
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## MEASUREMENT CIRCUIT



Schematic Diagram **RL=2.2K $\Omega$**

## FREQUENCY RESPONSE CURVE



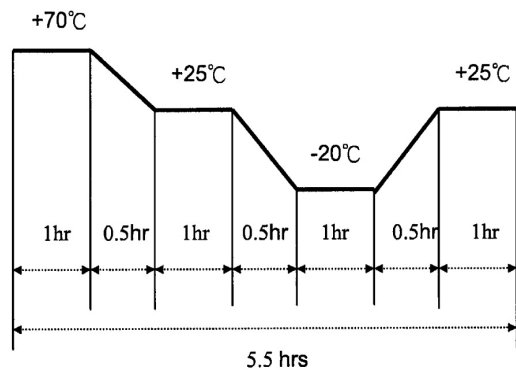
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## MECHANICAL CHARACTERISTICS

| item                      | test condition   | evaluation standard   |
|---------------------------|--|---|
| soldering heat resistance | Lead terminals are immersed in solder bath of $270 \pm 5^{\circ}\text{C}$ for $2 \pm 0.5$ seconds.   | No interference in operation.   |
| PCB wire pull strength    | The pull force will be applied to double lead wire:<br>Horizontal 4.9N (0.5kg) for 30 seconds  | No damage or cutting off.   |
| vibration                 | The part will be measured after applying a vibration amplitude of 1.5 mm with 10 to 55 Hz band of vibration frequency to each of the 3 perpendicular directions for 2 hours. | After any tests, the sensitivity should be within $\pm 3\text{dB}$ compared to the initial measurement. |
| drop test                 | The part will be dropped from a height of 1 m onto a 20 mm thick wooden board 3 times in 3 axes (X, Y, Z) for a total of 9 drops.  |   |

## ENVIRONMENT TEST

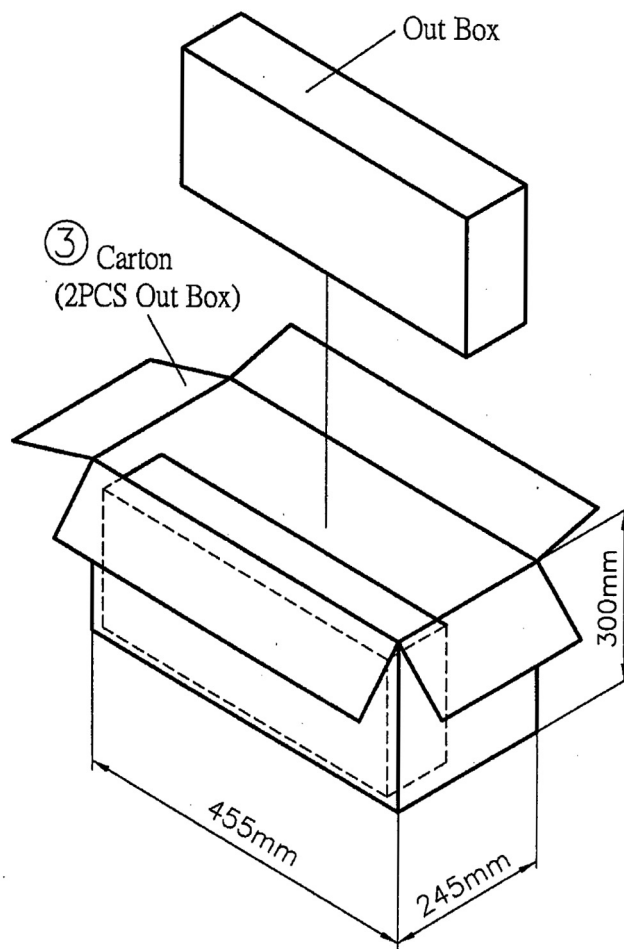
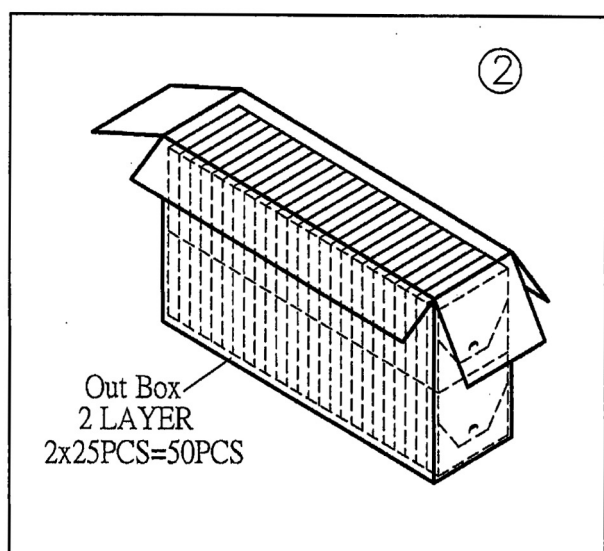
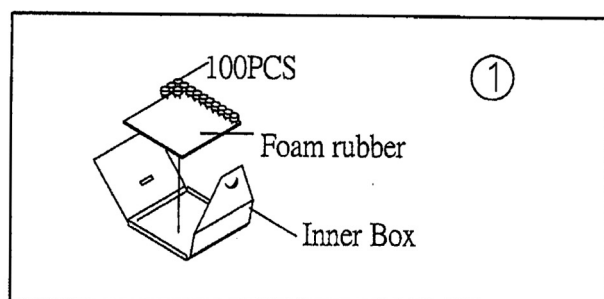
| item             | test condition   | evaluation standard  |
|------------------|--|--|
| high temp. test  | After being placed in a chamber at $+70^{\circ}\text{C}$ for 72 hours.   | The part will be measured after being placed at $+25^{\circ}\text{C}$ for 6 hours. After any tests, the sensitivity should be within $\pm 3\text{dB}$ compared to the initial measurement. |
| low temp. test   | After being placed in a chamber at $-20^{\circ}\text{C}$ for 72 hours.   |  |
| humidity test    | After being placed in a chamber at $+40^{\circ}\text{C}$ and $90 \pm 5\%$ relative humidity for 240 hours.   |  |
| temp. cycle test | The part shall be subjected to 10 cycles. One cycle will consist of:<br> |  |

## TEST CONDITIONS

|                          |   |                       |                            |
|--------------------------|---|-----------------------|----------------------------|
| standard test condition  | a) temperature: $+5 \sim +35^{\circ}\text{C}$ | b) humidity: 45 - 85% | c) pressure: 860-1060 mbar |
| judgement test condition | a) temperature: $+25 \pm 2^{\circ}\text{C}$   | b) humidity: 60 - 70% | c) pressure: 860-1060 mbar |

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**PACKAGING**


|            |                   |                      |
|------------|-------------------|----------------------|
| Inner Box  | 100mmx100mmx15mm  | 100PCSx1=100PCS      |
| Out Box    | 435mmx120mmx280mm | 100PCSx50=5,000PCS   |
| Carton Box | 455mmx245mmx300mm | 5,000PCSx2=10,000PCS |