

**MODEL:** CMA-4544PF-W | **DESCRIPTION:** ELECTRET CONDENSER MICROPHONE

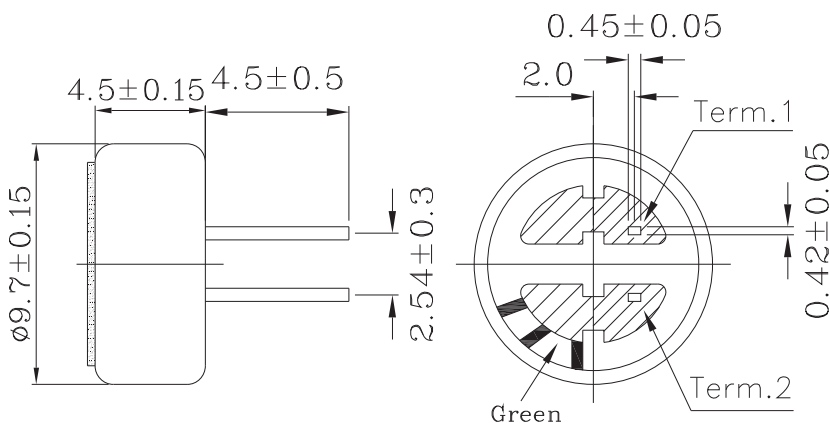
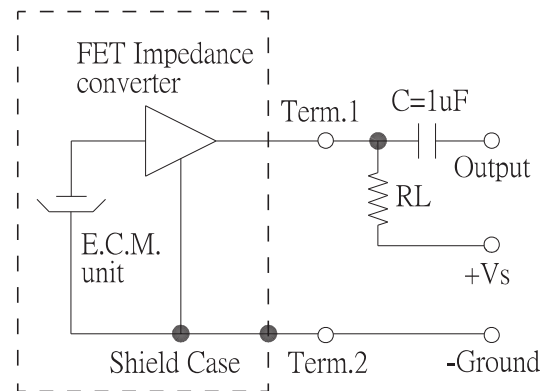
**SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	f = 1 kHz, 1 Pa, 0 dB = 1 V/1 Pa	-46	-44	-42	dB
operating voltage			3	10	Vdc
output impedance (Zout)	f = 1 kHz, 1 Pa		2.2		K $\Omega$
sensitivity reduction ( $\Delta S$ -Vs)	f = 1 kHz, 1 Pa, Vs = 3.0 to 2.0 Vdc		-3		dB
frequency (f)		20		20,000	Hz
current consumption (IDSS)	Vs = 3.0 Vdc, RL = 2.2 K $\Omega$			0.5	mA
signal to noise ratio (S/N)	f = 1 kHz, 1 Pa, A-weighted		60		dBA
operating temperature		-20		70	°C
storage temperature		-20		70	°C
dimension	$\varnothing 9.7 \times 4.5$ mm				
weight				0.8	g
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)

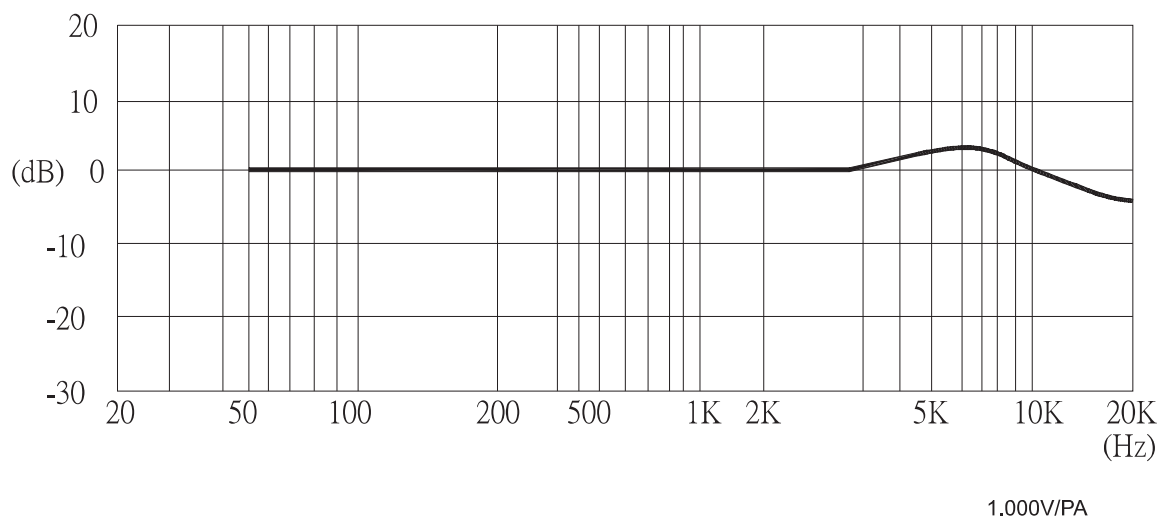
**MECHANICAL DRAWING**

unit: mm


**MEASUREMENT CIRCUIT**
RL = 2.2 K $\Omega$ 

Schematic Diagram

## FREQUENCY RESPONSE CURVE



## MECHANICAL CHARACTERISTICS

item	test condition	evaluation standard
soldering heat resistance	Soldering iron of $+270 \pm 5^{\circ}\text{C}$ should be placed on the terminal for $2 \pm 0.5$ seconds.	No interference in operation.
terminal mechanical strength	Apply to the terminal 4.9 N (0.5 kg) for 30 seconds	No damage or cutting off.
vibration test	The part should be measured after a vibration amplitude of 1.5 mm with 10~55 Hz band of vibration frequency to each of the 3 perpendicular directions for 2 hours.	After any tests, the sensitivity should be within $\pm 3$ dB of the initial sensitivity.
drop test	The part without packaging is subjected to 3 drops on each axis from the height of 1 m onto a 20 mm thick wooden board.	

## ENVIRONMENT TEST

item	test condition	evaluation standard
high temperature test	After being placed in a chamber at $+70^{\circ}\text{C}$ for 72 hours.	After any tests and 6 hours of conditioning at $+25^{\circ}\text{C}$ , the sensitivity should be within $\pm 3$ dB of the initial sensitivity.
low temperature test	After being placed in a chamber at $-20^{\circ}\text{C}$ for 72 hours.	
thermal shock	After being placed in a chamber at $+40^{\circ}\text{C}$ and $90 \pm 5\%$ RH for 240 hours.	
temperature cycle test	<p>The part will be subjected to 10 cycles. One cycle will consist of:</p>	

## TEST CONDITIONS

standard test conditions	a) Temperature: $+5 \sim +35^{\circ}\text{C}$	b) Humidity: 45 ~ 85%	c) Pressure: 860 ~ 1060 mbar
judgement test conditions	a) Temperature: $+25 \pm 2^{\circ}\text{C}$	b) Humidity: 60 ~ 70%	c) Pressure: 860 ~ 1060 mbar