



## MPA456 1/4-inch Free-field Microphone

### Features:

- 1/4-inch free-field microphone
- Sensitivity (@250 Hz): 0.9 mV/Pa (-60.9dB re 1V/Pa)
- Frequency response: 20 Hz ~ 20 kHz ( $\pm 5$  dB)
- Dynamic range: 63 dBA ~ 150 dB
- Polarization voltage: 0V (prepolarized)
- Pressure equalization: front-vent
- Optional phase-matching
- Built-in preamplifier with ICCP power supply



### Applications:

- Low-cost microphone
- Array application: near-field acoustic holography (NAH), beamforming, etc.
- High sound pressure measurement, product quality inspection of production line, impedance tube measurement

### Introduction

**MPA456** is the 1/4-inch free-field microphone developed by BSWA and suitable for measurement in free-field and semi free-field without reflection. It is prepolarized microphone without external polarization voltage, and equipped with built-in ICCP power supply preamplifier, which suitable for array, impedance tube and common electroacoustic measurement.

**MPA456** is front-vent and can measure the sound pressure level up to 150 dB in the frequency range of 20 Hz ~ 20 kHz ( $\pm 5$  dB). Each MPA456 passed a high sound pressure test before leaving the factory to verify its total distortion  $\leq 3\%$  when the rated maximum sound pressure level is reached.

**MPA456** is suitable for applications which need a large number of microphones with critical cost requirements, such as array applications including near-field acoustic holography (NAH), beamforming, etc.

BSWA can perform phase-matching of microphones before delivery for the users who have phase requirements. If the phase is not required when ordering, the microphone phase will not be tested and matched.

Each MPA456 is supplied with an individual calibration data chart including sensitivity, frequency response and so on.

### Specifications

Sound Field	Free-field
Diameter	1/4"
Class (IEC 61672)	Class 2
Sensitivity@250 Hz (mV/Pa) ( $\pm 3$ dB)	0.9 (-60.9 dB re 1V/Pa)
Polarization Voltage	0 V (prepolarized)
Frequency Response (Hz)	50 ~ 10 k ( $\pm 2$ dB), 20 ~ 20 k ( $\pm 5$ dB)
Dynamic Range (dBA ~ dB)	63 ~ 150
Self-generated Noise (dBA)	63
Maximum Sound Pressure Level (dB)	$\geq 150$ (3% distortion)

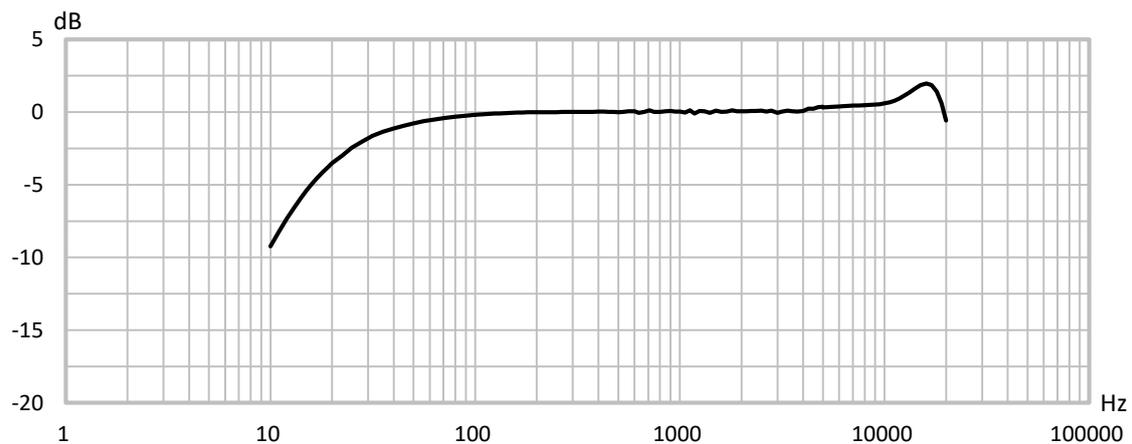


Phase-matching <sup>1</sup>	100 Hz ~ 1 kHz: $\pm 3^\circ$ 1 kHz ~ 3 kHz: $\pm 5^\circ$ 3 kHz ~ 6.3 kHz: $\pm 10^\circ$
Pressure Equalization Vent	Front-vent
Preamplifier	Built-in
Maximum Output Voltage (V <sub>peak</sub> ) <sup>2</sup>	$\pm 5$
Output Impedance ( $\Omega$ )	< 150
Power Supply	ICCP (2mA ~ 20mA, 4mA Typ.)
Operating Temperature Range ( $^\circ\text{C}$ )	-10 ~ 50
Operating Humidity Range (%RH)	0 ~ 90
Dimension (mm)	$\varnothing 7 \times 61$
Output Connector	SMB
Weight (g)	8.0

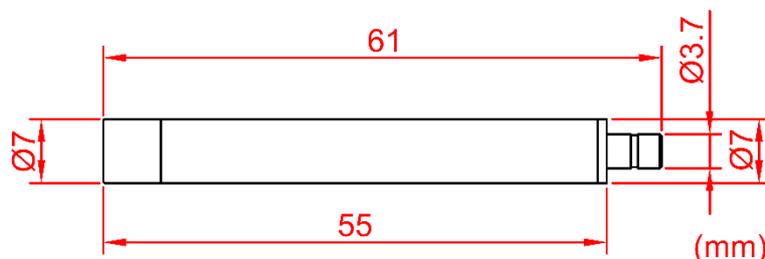
Note 1: phase-matching is only performing for the microphone ordered with phase requirements.

Note 2: guaranteed by the circuit design, the actual maximum output voltage is determined by the sensitivity and the maximum sound pressure level.

### Typical Free-field Frequency Response



### Dimension



**BSWA Technology Co., Ltd.** Room 1003, North Ring Center, No.18 Yumin Road, Xicheng District, Beijing 100029, China • Tel: 86-10-5128 5118 • Fax: 86-10-8225 1626 • E-mail: info@bswa.com.cn • URL: www.bswa-tech.com  
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