



MPA436A 1/4-inch Free-field Microphone

Features:

- 1/4-inch free-field microphone
- Sensitivity (@250 Hz): 11.2 mV/Pa (-39 dB re 1V/Pa)
- Frequency response: 10 Hz ~ 20 kHz (± 3 dB)
- Dynamic range: 29 dBA ~ 140 dB
- Polarization Voltage: 0V (prepolarized)
- Pressure equalization: front-vented
- Optional phase-matching
- Built-in preamplifier with ICCP power supply
- Optional TEDS (IEEE.1451.4)



Applications:

- Low-cost microphone
- Array applications such as near-field acoustic holography (NAH), beamforming, etc.
- Product quality inspection of production line

Introduction

MPA436A is the new 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 (optional TEDS).

MPA436A is front-vent and can measure the sound pressure level up to 140 dB in the frequency range of 10 Hz ~ 20 kHz. Each MPA436A 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.

MPA436A 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.

Moreover, the optional TEDS function support data acquisition equipment to read microphone information directly, including microphone model, serial number, sensitivity, etc. BSWA microphone supports the IEEE 1451.4 standard. The v0.9 version is used by default to be compatible with more data acquisition equipment. The v1.0 version can also be selected according to user requirements.

Each MPA436A 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 1
Sensitivity@250 Hz (mV/Pa) (± 3 dB)	11.2 (-39 dB re 1V/Pa)
Polarization Voltage	0 V (prepolarized)
Frequency Response (Hz)	20 ~ 10 k (± 2 dB), 10 ~ 20 k (± 3 dB)
Dynamic Range (dBA ~ dB)	29 ~ 140
Self-generated Noise (dBA)	29
Maximum Sound Pressure Level	≥ 140 (3% distortion)

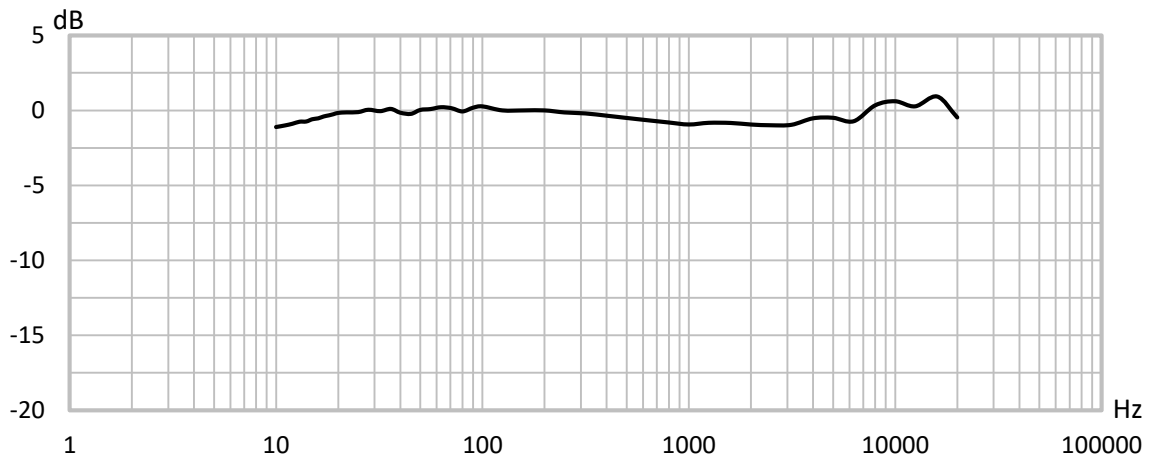


(dB)	
Phase-matching ¹	100 Hz ~ 3 kHz: ±3° 3 kHz ~ 5 kHz: ±5° 5 kHz ~ 10 kHz: ±10°
Pressure Equalization Vent	Front-vented
Preamplifier	Built-in
Maximum Output Voltage (V _{peak}) ²	±5
Output Impedence (Ω)	<150
Power Supply	ICCP (2mA ~ 20mA, 4mA typical)
Operating Temperature Range (°C)	-10 ~ 50
Operating Humidity Range (%RH)	0 ~ 90
Dimension (mm)	Ø7 × 34
Output Connector	SMB
Weight (g)	5.0
TEDS	Optional, IEEE 1451.4 compliant (default v0.9, optional v1.0)

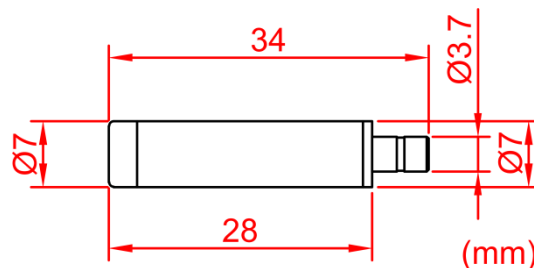
Note 1: phase-matching is only performing for the microphone ordered with phase requirements.

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



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