

Electronics with the Modular System

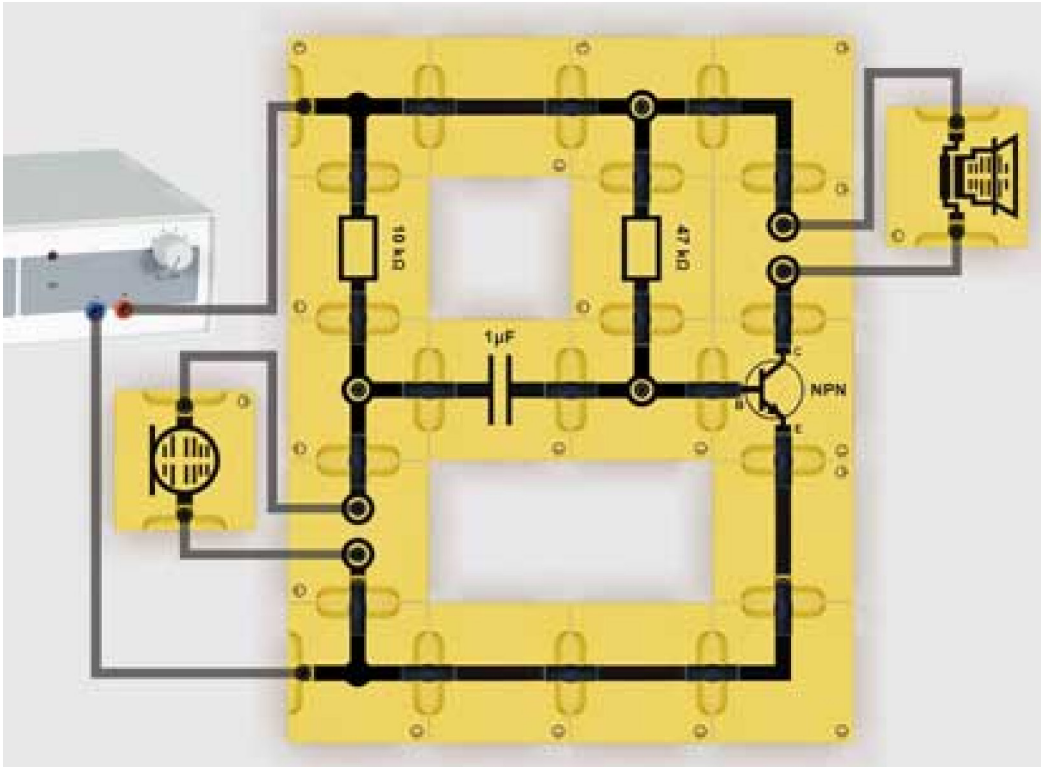
Basic Electronic Circuits
Transistor Applications

Single-stage microphone amplifier

Objective of the experiment

To demonstrate the working principle of a single-stage microphone amplifier.

Setup



Apparatus

1	539 043	Transistor NPN, BD 137, BST
1	539 014	Resistor 47 kΩ, BST
1	539 013	Resistor 10 kΩ, BST
1	539 031	Capacitor 1 μF, BST
1	539 050	Microphone, BST
1	539 049	Loudspeaker, BST
4	539 001	Connector blocks BST, straight
2	539 003	Connector blocks BST, straight, 2 sockets
2	539 004	Connector blocks BST, 90° angle
2	539 006	Connector blocks BST, T branch
3	539 007	Connector blocks BST, T branch with socket
19	539 000	Bridging plug, BST
1	521 49	Power supply, 12 V DC, 230 V
2	500 644	Safety connection lead, 100 cm
4	500 664	Safety connection lead, 200 cm
1	301 300	Demonstration experiment frame
1	301 301	Adhesive magnetic board

Carrying out the experiment

Note

The microphone and loudspeaker should be separated as far apart as possible.
The speaker can be held by a student close to his/her ear.

- Adjust a voltage of approx. 9 V at the power supply.
- Tap the microphone or speak into it.
- Monitor the acoustic signal on the loudspeaker.
- Connect the microphone directly to the loudspeaker and repeat the experiment.

Evaluation

With a single-stage microphone amplifier, audio-frequency oscillations can be amplified.

Note

If the gain is not enough, a multi-stage amplifier can also be used.