

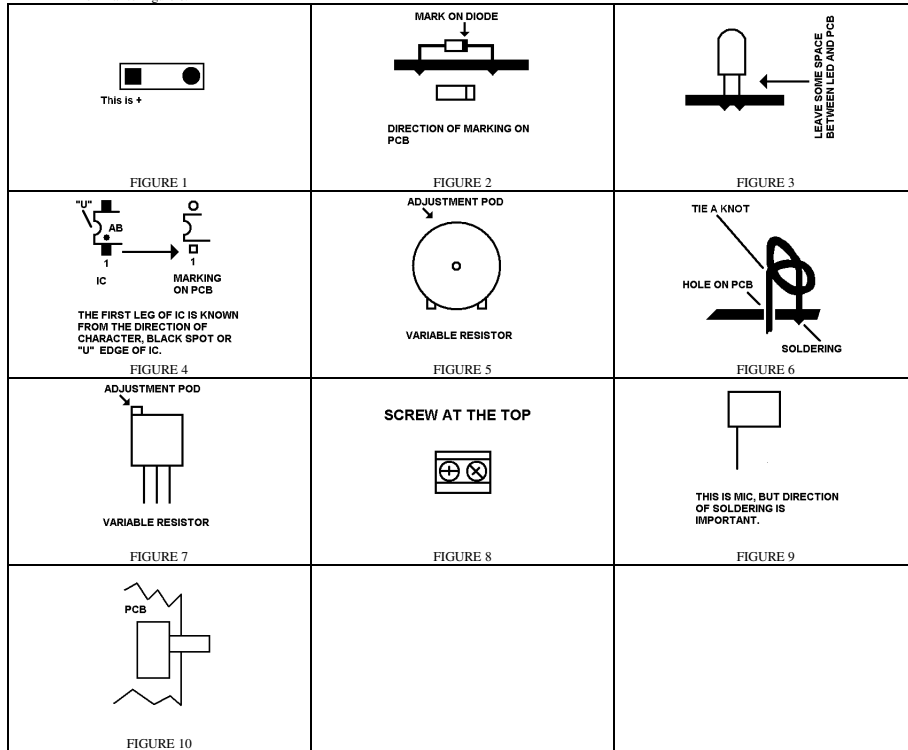
# MICROPHONE WITH AMPLIFIER

PRODUCT CODE: M00270029

DESCRIPTION: When the player speak to the microphone and connect this equipment directly to loudspeaker, this can work as loudmouth.

## READ BEFORE INSTALLATION:

- Put the component on the side of screen printing and solder on the back of PCB without printing.
- Placing direction of component.
- 1. On component, longer leg is "+".
- 2. On PCB marking, square pad as Figure 1 is always "+".
- 3. For diode, please install as Figure 2.
- Do not put the LED to very bottom, just install as Figure 3.
- For any IC, finding out which leg is first leg (FIGURE 4) is important. Also, solder the socket (chair) to the PCB and the IC sit on the top.
- For 9V Battery Adaptor, Red is B+ and Black is B-. Also, please tie a knot after the red and black wire has passed the neighbors hole before soldering. This is similar to Figure 6.



## CIRCUIT EXPLANATION:

Please read the below together with the circuit diagram in Figure 11.

- Part 1 is for changing the sound wave to electrical signal. The electrical signal coming out is AC (Alternate Current) and DC (Direct Current).
- Part 2 is for changing the signal from part 1 to alternate signal only and eliminates the DC part.
- Part 3 is the amplifier of the circuit. The signal picking up from part 1 is too small and this must be amplified before this can be heard in any speaker.
- Part 4 is for connecting to the speaker. In part 4, the function of C2 is to confirm the voltage after C2 would swing only around zero voltages such that the diaphragm of speaker can vibrate normally. In PCB, you find there is a "+" and "-" at speaker connection. But because this is a mono system, reverse connection would not have effect.
- Part 5 is for connecting the whole system to battery. The function of C4 is to make the whole system working at stable voltage. The function of D1 is for preventing the reverse power supply.

## INSTALLATION:

Just install the component to the PCB M00260047 according to below table.

ITEM	SYMBOL ON PCB	DESCRIPTION	OUTLOOK	DIRECTION IS IMPORTANT?
1	R1	RESISTOR, 4.7K ohms	YELLOW, VIOLET, RED	NO
2	R2	RESISTOR, 330 ohms	ORANGE, ORANGE, BROWN	NO
3	R3	RESISTOR, 10 ohms	BROWN, BLACK, BLACK	NO
4	D1	DIODE, 1N4001	FIGURE 2	FIGURE 2
5	C1	CAPACITOR, 10uF	MARK WITH 10uF OR SAME MEANING OF VALUE	YES
6	C2	CAPACITOR, 220uF	MARK WITH 220uF OR SAME MEANING OF VALUE	YES
7	C3	CAPACITOR, 10uF	MARK WITH 10uF OR SAME MEANING OF VALUE	YES
8	C4	CAPACITOR, 10uF	MARK WITH 10uF OR SAME MEANING OF VALUE	YES
9	C5	CAPACITOR, 10uF	MARK WITH 10uF OR SAME MEANING OF VALUE	YES
10	C6	CAPACITOR, 22*10E4pF	MARK WITH 224 OR SAME MEANING OF VALUE	NO
11	L1	LED	ONE LONG LEG AND ONE SHORT LEG	YES
12	MIC	MICROPHONE	TWO LEGS, FIGURE 9	YES
13	U1	DIP 8 SOCKET	8 LEGS	NO
14	V1	VARIABLE RESISTOR, 10K ohms	FIGURE 5	YES
15	V2	VARIABLE RESISTOR, 10K ohms	FIGURE 7	NO
16	SP	SOCKET FOR SPEAKER WIRE CONNECTION	FIGURE 8	YES
17	SWITCH	SLIDE SWITCH	SIX LEGS	FIGURE 10
18	B+, B-	9V BATTERY ADAPTOR	RED WIRE, BLACK WIRE	YES
19	ON THE TOP OF ITEM 13	IC, LM386	8 LEGS	YES

- After installation of PCB, you need to connect this to the loudspeaker. Actually, you would find some speaker is 2 ohm, 4 ohm or 8 ohm with different value of "Watt". Amount of ohm and Watt is not important for this system.
- This is better doing the things as picture 6 when connecting the speaker to this microphone so that this microphone and speaker can be firmly connected in any condition.
- After installation of the speaker, you need to turn this to best condition. The function of V1 is the volume control. V2 is for turning the gain of amplifier. You may feel confused with V1 and V2 because they seem also talking the amplify factor of the system. Maybe you can think this in another way. Both V1 and V2 are also volume control. Up to this step, the player may think, of course, turning V2 to highest value and using V1 for control should be no mistake. Yes, you can do like this. But please look at the below condition, I assume now player A turn V2 to highest value and lend this to Player B. Then Player B also turns V1 to some very high volume. In this condition, the output power may reach the maximum power that the speaker can be suffered when the player shout to the microphone. "Clipping" of speaker takes place. Sometime this may harm the speaker.
- After you have installed to the speaker, just turn the V1 to maximum value. Then turn V2 to maximum (Lowest resistance), shout at the microphone. If "Clipping" take place, just turn V2 to less value (Little higher resistance) and shout again. After you find there is no clipping. This gain is best for that speaker.
- You can see there is many hole in the PCB. The battery can mount to the microphone by using elastic band or other rope.

## CIRCUIT DIAGRAM:

