

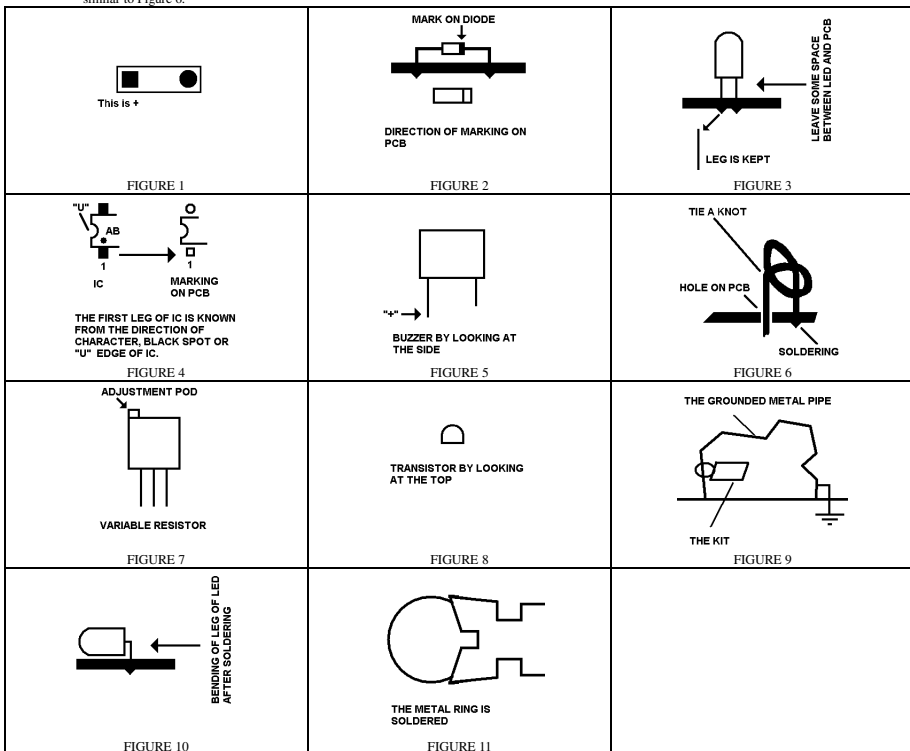
WIRELESS METAL PIPE GOING THROUGH METAL RING GAME

PRODUCT CODE: M00270034

DESCRIPTION: In the similar game, this always come with wire but this one is wireless. This can be the party game.

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 12.

Brief Description

You can see the equipment that there is only one connection is used and this seen that this has overthrow the traditional logic of electricity (The circuit must be completed circuit and the "STARTING" of circuit must the sources of power and the "ENDING" of circuit must the ground of power sources). When the frequency is high enough, the voltage or current give out from the power sources would be alerted when any part of circuit is touched to a large metal or even earth. This happen because the "+" and "-" of power sources is cheated as two end of resistor is connected into any part of circuit. AC can have this effect because both ends of power sources do not need to either giving out or absorbing electronic all the time.

Explanation at each part

- Part 1 is a square wave generator.
- Part 2 is a current sensing circuit. The output voltage of leg of 7 of UIB would rise when there is any increasing current flow at R9. This would happen when the

- metals ring touch the metal pipe because the equipment has been cheated as in Brief Description.
- Part 3, U1C, work as a buffer so as to isolate the circuit before and after this part.
- Part 4 is a smoothing circuit: any AC signal passing this part would change to DC for the later part.
- Part 5 is the comparator circuit. This is to adjust the sensitivity of the metals ring. From part 4, this has changed to DC signal. This DC signal would compare with the voltage of voltage divider of VR. If leg of 12 is higher than leg of 13 of UID, the output of leg of 14 of UID would become high. When leg of 12 is lower than leg of 13 of UID, the output of leg of 14 of UID would become low.
- Read again Part 2 to Part 5, you can see leg 14 would become High when M1 or M2 touching a big metal.
- In part 6, this shows up to the player if the metals ring touches the metal pipe. When Leg 14 is at High maybe 0.1 second, the current would charge C3 in very short of time. Then this discharge to R8, then the collector of Q2 and finally to ground. If Q2 is connected in this way, this would become a stable voltage sources to L2, L3 and Buzzer for sometime. After all the charge at C3 has been discharged, L2, L3 and Buzzer would be "OFF".
- Part 7 is the sources of power.

INSTALLATION:

Just install the component to the PCB M00260054 according to below table.

ITEM	SYMBOL ON PCB	DESCRIPTION	OUTLOOK	DIRECTION IS IMPORTANT?
1	R1	RESISTOR, 100K ohms	BROWN, BLACK, YELLOW	NO
2	R2	RESISTOR, 10K ohms	BROWN, BLACK, ORANGE	NO
3	R3	RESISTOR, 330 ohms	ORANGE, ORANGE BROWN	NO
4	R4	RESISTOR, 10K ohms	BROWN, BLACK, ORANGE	NO
5	R5	RESISTOR, 10K ohms	BROWN, BLACK, ORANGE	NO
6	R6	RESISTOR, 10K ohms	BROWN, BLACK, ORANGE	NO
7	R7	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
8	R8	RESISTOR, 4.7K ohms	YELLOW, VIOLET, RED	NO
9	R9	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
10	R10	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
11	R11	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
12	R12	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
13	R13	RESISTOR, 1M ohms	BROWN, BLACK, GREEN	NO
14	R14	RESISTOR, 330 ohms	ORANGE, ORANGE BROWN	NO
15	R15	RESISTOR, 330 ohms	ORANGE, ORANGE BROWN	NO
16	C1	CAPACITOR, 100uF	MARK WITH 100uF OR SAME MEANING OF VALUE	YES
17	C2	CAPACITOR, 0.1uF	MARK WITH 0.1uF OR SAME MEANING OF VALUE	YES
18	C3	CAPACITOR, 100uF	MARK WITH 100uF OR SAME MEANING OF VALUE	YES
19	C4	CAPACITOR, 10*10E2pF	MARK WITH 102 OR SAME MEANING OF VALUE	NO
20	D1	DIODE, IN4001	FIGURE 2 (MOSTLY BLACK)	FIGURE 2
21	D2	DIODE, IN4148	FIGURE 2 (MOSTLY TRANSPARAENT RED)	FIGURE 2
22	D3	DIODE, IN4148	FIGURE 2 (MOSTLY TRANSPARAENT RED)	FIGURE 2
23	D4	DIODE, IN4148	FIGURE 2 (MOSTLY TRANSPARAENT RED)	FIGURE 2
24	L1	LED	RED, ONE LONG LEG AND ONE SHORT LEG	YES
25	L2	LED	WHITE, ONE LONG LEG AND ONE SHORT LEG	YES
26	L3	LED	WHITE, ONE LONG LEG AND ONE SHORT LEG	YES
27	VR	VARIABLE RESISTOR, 1M ohms	FIGURE 7	NO
28	Q1	TRANSISTOR, NPN	FIGURE 8	YES
29	Q2	TRANSISTOR, NPN	FIGURE 8	YES
30	U1	DIP 14 SOCKET	14 LEGS	NO
31	B+, B-	9v BATTERY ADAPTOR	RED WIRE, BLACK WIRE	YES
32	BZ	BUZZER	FIGURE 5	YES
33	ON THE TOP OF ITEM 30	IC, LM324	14 LEGS	YES
34	M1, M2	METAL RING	A SHINY METAL WIRE	FIGURE 11
35	/	TRACK OF METAL PIPE	/	FIGURE 9

- For the LED L1 TO L3, please bend the LED as Figure 10.
- After installation of component from item 1 to 33. Now you need to solder the metal ring (Figure 11) to M1 and M2 by using the metal wire we provided. The size of ring depend on how difficult the game you want.
- Then you made the "TRACK OF METAL PIPE" (Figure 9) by the metal wire (Or you can use other longer and thicker metal wire by yourself) we provided. The pipe should connect to ground or a big metal. But, in case, the track is very long. You can try not connecting to ground and seeing if this work or not because the track itself becomes a ground.
- Now put the battery into the equipment. Then let the ring to touch the pipe. After this, you adjust VR until you hear the sound of buzzer together with L2 and L3 is on "ON" status. Now you try to let the ring not touching the pipe. In normal condition. The buzzer, L2 and L3 would go back to "OFF" status maybe 5 to 10 second later (Not go to "OFF" at once). If this work, everything is normal.
- In the PCB, you see there are three holes; you can fix this to a wooden plate so that the player would not touch the circuit accidentally.

CIRCUIT DIAGRAM:

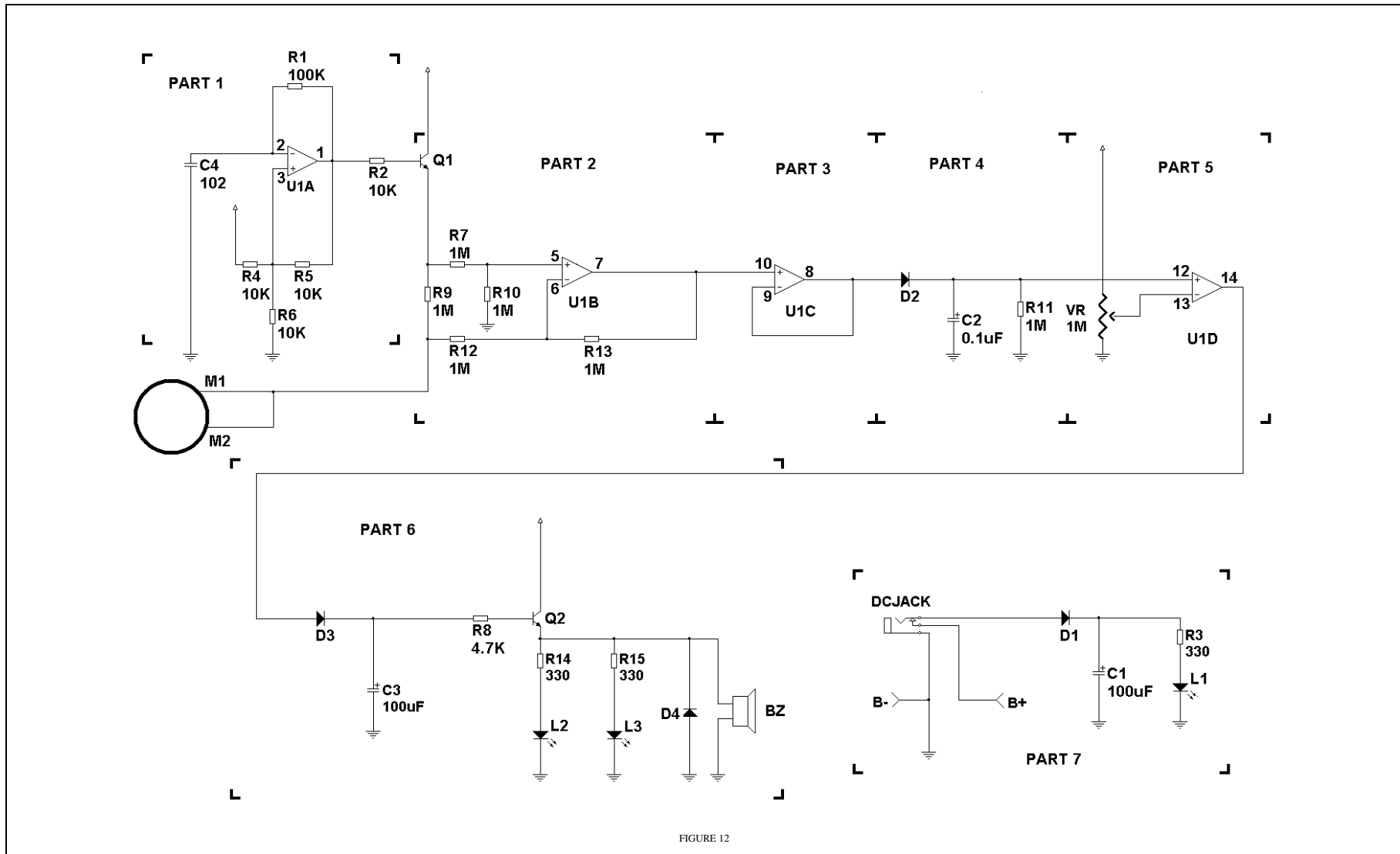


FIGURE 12