

SPACE ROCKERS

one-button percussion synthesizer
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analog transistor circuit
25 crazy drum sounds
9volt battery power
1/4" audio output

Tools required to build this kit

- Soldering iron with fine point
- Flush cutting pliers



Make sure the soldering iron is hot - touch the tip of the iron to some fresh solder. It should melt immediately with a puff of smoke and cling to the tip like a drop of water. Poor quality soldering irons have tips that solder won't cling to. Its difficult to make quality connections with this type.

To solder a component, first heat up the area with the tip of the iron. Then touch the hot area with solder and watch it melt. Wait a second until the solder flows and looks smooth, then lift the iron away. Finally, trim the extra length of wire off so it is flat with the bottom of the board. Wipe the tip of the soldering iron clean on a damp sponge frequently.

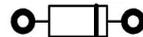
Resistors



Resistors are thin cylinders with colored stripes and two legs. Both legs are equivalent, so it doesn't matter which way the resistor is rotated. Bend one leg 180 degrees so it folds back against the resistor's body. Then insert the resistor into the board: The un-bent leg goes into the hole with the circle around it. The bent leg goes into the adjacent hole. Use the table below to identify the different types by their colored stripes.

qty.	type	color	color	color	color
3	10 k	brown	black	orange	gold
3	33 k	orange	orange	orange	gold
2	100 k	brown	black	yellow	gold
1	22 k	red	red	orange	gold
1	220	red	red	brown	gold

Diode



The diode has a small red body with a black stripe. Bend both of its legs at a 90-degree angle so it will sit flat against the circuit board. Orient the striped end of the diode to match the stripe printed on the board.

1	1N914 diode
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Electrolytic capacitors



Electrolytic capacitors are cylinder shaped, with two legs on the same side. Make sure the capacitor's long leg goes into the hole marked plus (+).

1	10u electrolytic
1	1u electrolytic

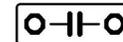
Transistors



Transistors have a black plastic body with three legs. You'll find three type 549 transistors on a piece of paper tape. Grab the transistor in one hand and the tape in your other hand, and pull it out. Insert it into the board with all three legs thru the holes. The flat side of the transistor must match the printing on the board. Once you have done all three 549's, install the 559 next.

3	BC549 transistor, NPN
1	BC559 transistor, PNP

C1 and C2



These capacitors determine the pitch of the sound that Mini Space Rockers makes. Depending on which version you are building, your C1 and C2 may be rectangular or cylindrical. It doesn't matter which direction they are oriented. Read the slip of paper that came with your C1 and C2 to see what values they should be.

1	C1 (various values)
1	C2 (various values)

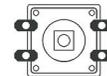
C3



This capacitor controls the duration of the sound Mini Space Rockers makes. Its an electrolytic capacitor like you used previously. Make sure that its long leg goes into the hole marked plus (+).

1	C3 (various values)
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Pushbutton



The pushbutton mounts on top of the board. Its four legs snap in to the holes. After you solder it, you can install its plastic cap. The cap snaps on with pressure.

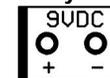
1	pushbutton switch
1	plastic cap

Output Jack

The jack mounts on the bottom of the board and its round opening points outward. Solder its leads in place from the top side of the board. Your jack may have four or six legs, but that doesn't matter.

1	1/4" Jack
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Battery Snap

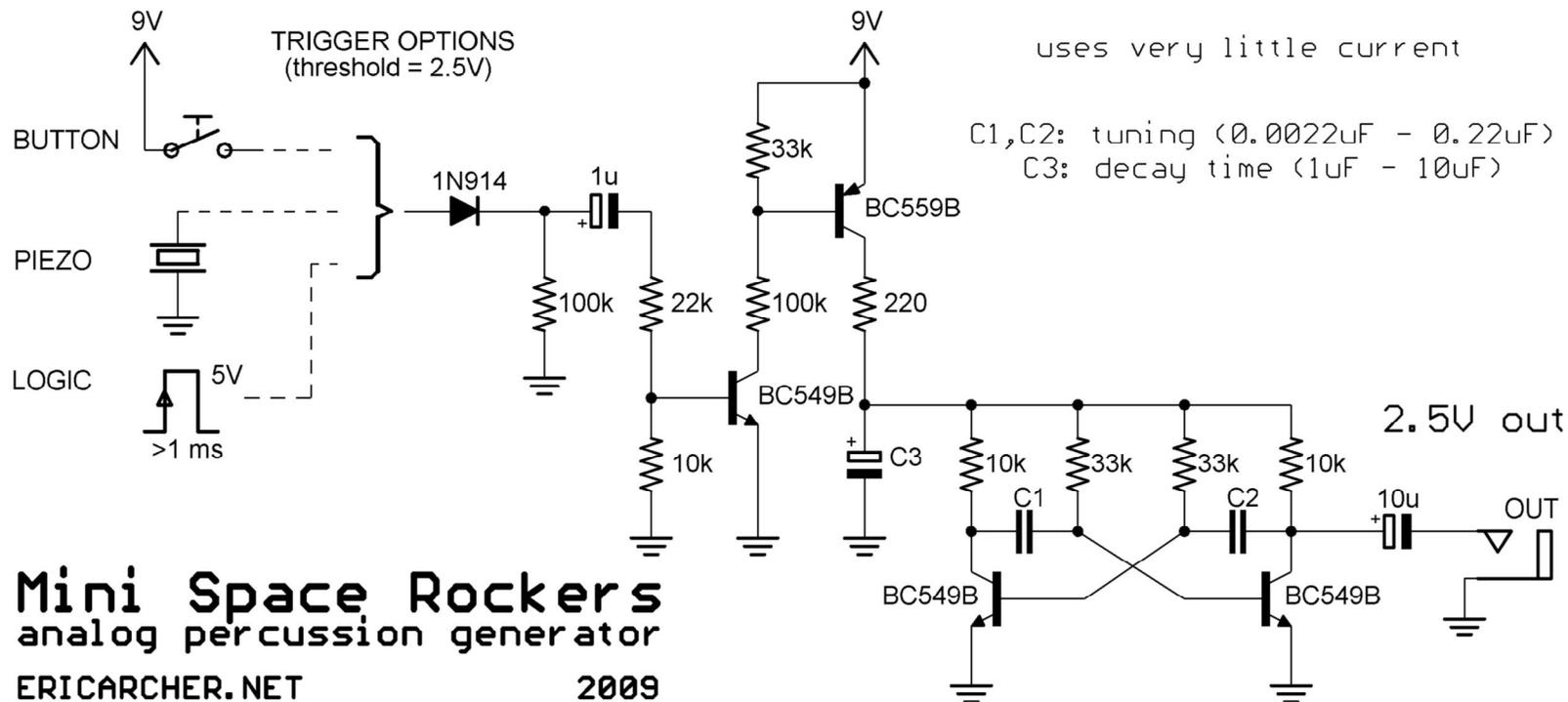


The battery snap has two wires, red and black. To keep it from accidentally being pulled off the board, there is an extra hole provided for you to thread the wires through. This hole is next to C3. Bring both wires up through the hole from the bottom side, then arch them over the board so they reach their destination. The red wire goes in the (+) hole, and the black wire goes in the (-) hole.

1	9V battery snap
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Install the 9V battery and plug in to an amp. Tap the button a few times. If you don't hear percussion, make sure all the parts are installed in the proper orientation. If that looks OK, you may have a bad solder joint. Be sure there is no solder bridging adjacent points. Re-heat all points with the iron until you see the solder liquefy and become shiny all over, then remove the iron. You can add a little bit of fresh solder here if it looks like there may be too little.



Mini Space Rockers

analog percussion generator

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Thump Bass

C1 = 1u
C2 = 470n
C3 = 22u

Squeek Toy

C1 = 22n
C2 = 22n
C3 = 1u

Boiink

C1 = 100n
C2 = 22n
C3 = 1u

Gabbabass

C1 = 10u
C2 = 100n
C3 = 22u

House Bass

C1 = 1u
C2 = 220n
C3 = 22u

Metal Blip

C1 = 3.3n
C2 = 33n
C3 = 1u

Skrew Bass

C1 = 1u
C2 = 470n
C3 = 100u

Space Droplet

C1 = 470n
C2 = 22n
C3 = 1u

Bird

C1 = 100n
C2 = 4.7n
C3 = 4.7u

El Grito

C1 = 1u
C2 = 10n
C3 = 100u

Loong Bass

C1 = 1u
C2 = 100n
C3 = 100u

Data Blip

C1 = 3.3n
C2 = 220n
C3 = 4.7u

Tekno Boom

C1 = 1u
C2 = 220n
C3 = 100u

Lazer Tag

C1 = 10u
C2 = 22n
C3 = 22u

Checkout Scan

C1 = 100n
C2 = 100n
C3 = 1u

Lazer Tom

C1 = 1u
C2 = 22n
C3 = 22u

Mouse

C1 = 10n
C2 = 10n
C3 = 1u

Space Hawk

C1 = 470n
C2 = 3.3n
C3 = 100u

Pak-Man

C1 = 220n
C2 = 100n
C3 = 1u

Bass Boom

C1 = 220n
C2 = 220n
C3 = 22u

Beep

C1 = 100n
C2 = 220n
C3 = 1u

Spinback

C1 = 1u
C2 = 3.3n
C3 = 100u

Mid Tom

C1 = 100n
C2 = 470n
C3 = 4.7u

Hi Tom

C1 = 100n
C2 = 220n
C3 = 4.7u