Magnificent Musical Memory Machine

by **MAS EFFECTS**

masfx.info/game

USER GUIDE

After you've built your *Colorful, Chiming, Cognition Contraption*, grab a micro USB cable, plug it in, then have some fun!

MODE: Press this button to switch between the different game modes listed below.

SPEED: Turn the speed knob to adjust how fast the notes are played back.

SONG/SCALE: Switches which musical scale is available on the colorful buttons, or switches the song.

Mode	Description	SONG/SCALE button	Start-up sequence
8 note memory	Memory game using all 8 colorful buttons. An additional random note will be added after each round when you successfully copy the pattern.	Change scale	8 note scale plays with 8 buttons simultaneously lit up
4 note memory	Simpler memory game using only the first 4 buttons.	Change scale	4 note scale plays with 4 buttons simultaneously lit up
Song memory	Learn to play a variety of songs by repeating back the notes played. A new note will be added each time you successfully copy the sequence.	*(not used)*	4 note sequence: 1, 1, 1, 3
Free-play	Press the buttons to make your own music	Change scale	Random notes play and buttons light up
Song playback	Listen to a variety of songs automatically play for you	Change song	None

ASSEMBLY

IMPORTANT: LEARN TO SOLDER

If you've never soldered before, no problem! We have the resources you need. But you MUST USE THEM! Do not try to solder this game kit without prior practice or you'll have problems.

I know you're eager to build this, but trust me, it'll save you headaches and heartbreak! Learn the fundamentals and do some practice first.
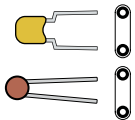
PRESORTED PARTS

To keep costs low we don't label each and every part. Instead we strategically group them into pouches so you can easily identify them.

You simply need to identify their general shape and recognize how to insert them into the circuit board:
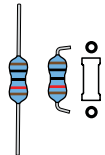
HOW TO SOLDER

Visit masfx.io to get our free booklet and video.

Optionally, purchase a soldering practice kit at masfx.io/practice

How To Solder

FOR DIY GUITAR PEDALS, SYNTH, AND OTHER HOBBY ELECTRONICS

Mark A. Stratman

MAS Effects

CAPACITORS
Begin with "C", e.g. "C1"
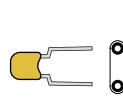
RESISTORS
Begin with "R", e.g. "R3"

POLY FUSE
Begins with "F", e.g. "F1"

DIODES
Begin with "D", e.g. "D2"

anode (+)

cathode (-)

anode (+)

cathode (-)
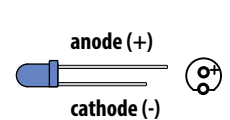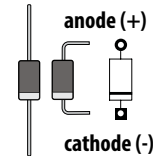
ORDER OF COMPONENT PLACEMENT

It's probably simplest to open a single pouch of components, install and solder each of them, then move on to the next pouch. Avoid opening multiple pouches so you do not mix up your components.

RESISTOR VALUES FOR BUTTON LEDS VARY

Different colored buttons need different resistor values to ensure their LEDs maintain a similar brightness.
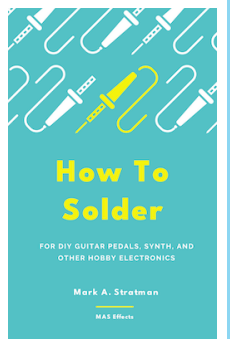
We've packed the LEDs alongside their corresponding resistors so you can easily match them.

See the diagram on the following page for placements.

ASSEMBLY (continued)

POLARITY: DO NOT REVERSE THESE

The diodes, including the LEDs in the buttons, need to be placed with the correct orientation. Refer to the last page of this document for a clear, easy-to-read copy of the printing on the circuit board.
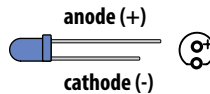
Buttons:

The cathode (-) side of the built-in LED is marked with a marker. Look for a colored dot on one side. Make sure this lines up with the (-) side on the circuit board.
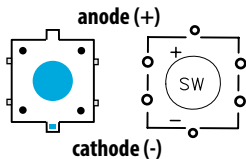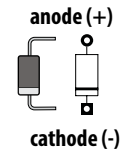

LED:

The longer leg is the anode and goes into the side marked with a (+) on the circuit board.

Diode:

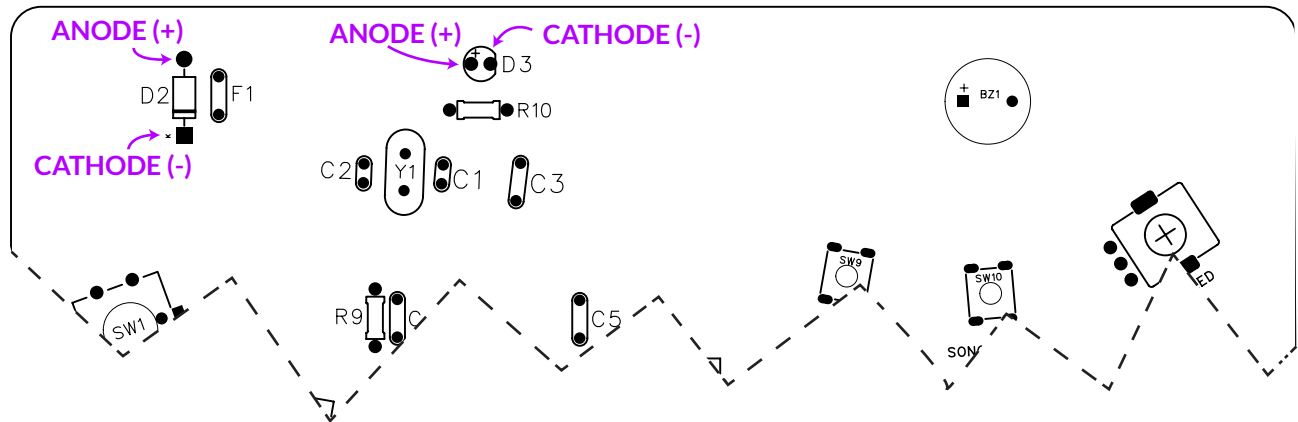Position the stripe on the diode over the stripe drawn on the circuit board.

TIP: SEATING THE BUTTONS

When seating the buttons into the circuit board, very gently and carefully seat each leg of the button. Make sure all are lined up before pressing it down to avoid bending the delicate LED leads.
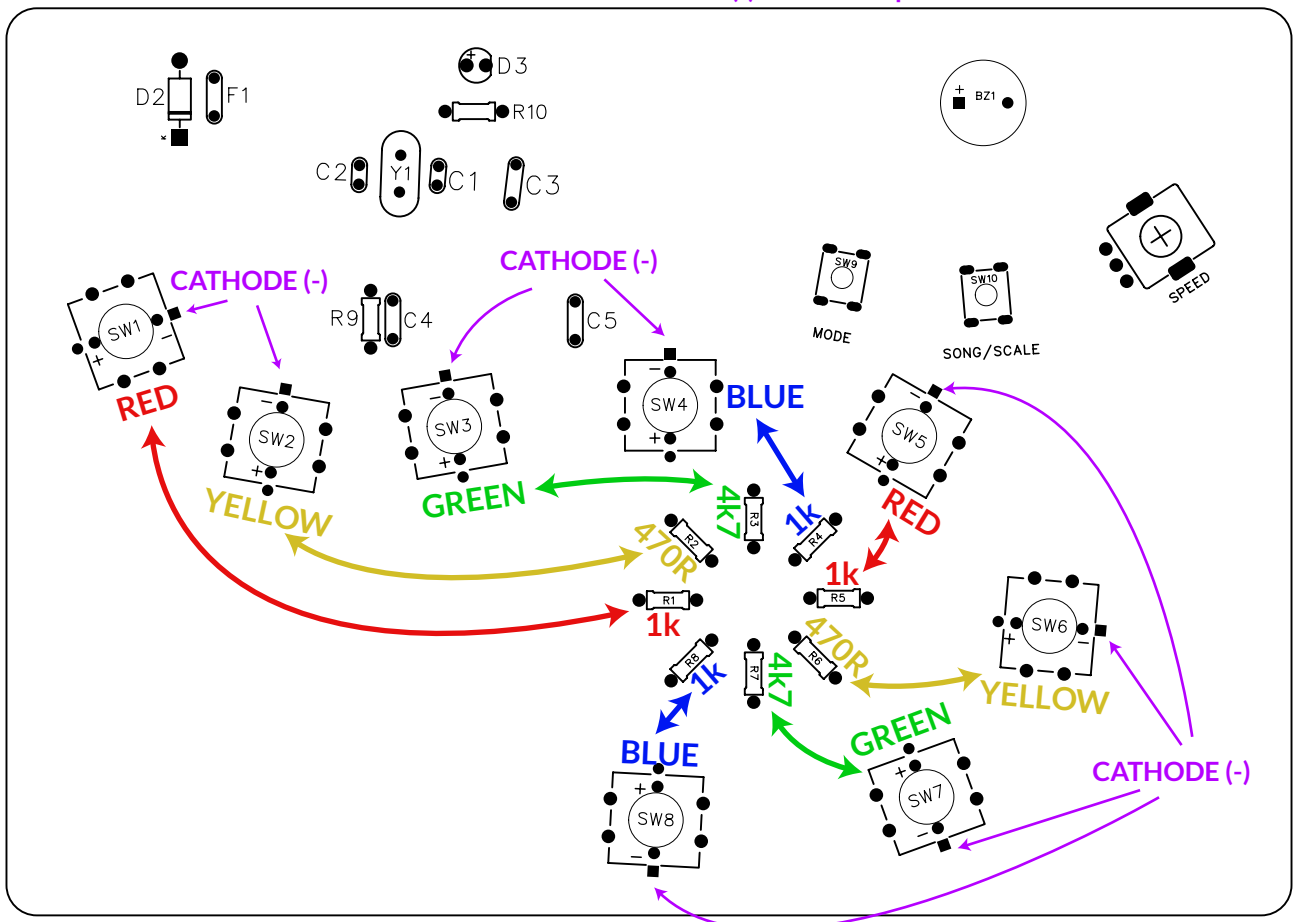
In the event you bend an LED lead, you can either try again to reseat it, or simply solder it from the top if you feel comfortable in the integrity of the solder joint.
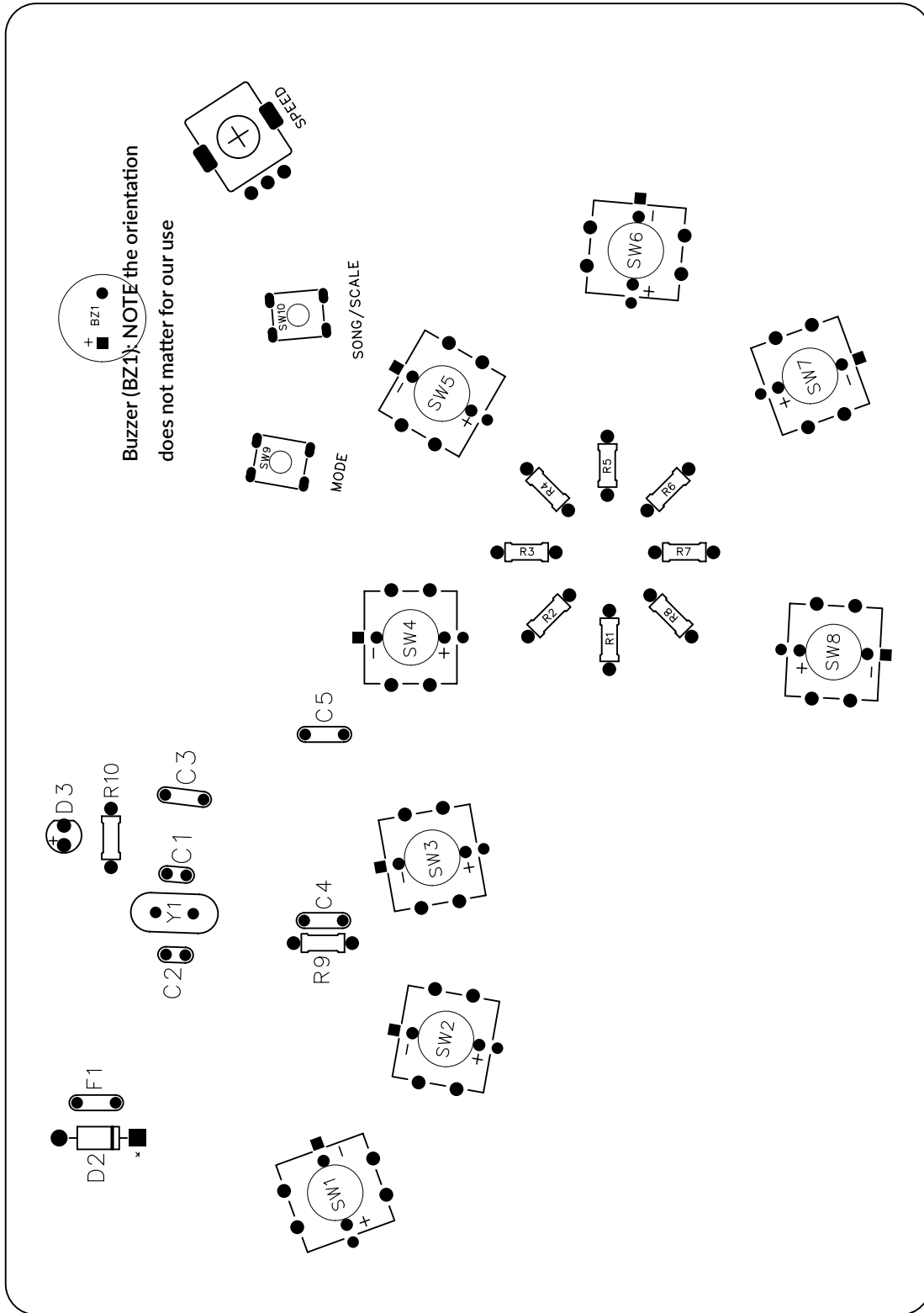
ASSEMBLY (continued)

COMPONENT PLACEMENT

ANODE (+)   ANODE (+)   CATHODE (-)

D2 F1   D3

CATHODE (-)   R10

C2 Y1 C1 C3   BZ1

SW9   SW10   SPEED

SW1   R9 C4   C5   SONG

REMEMBER: Button's CATHODE (-) has an ink spot on it

D2 F1   D3

R10   BZ1

C2 Y1 C1 C3

SW9   SPEED

CATHODE (-)   CATHODE (-)   MODE   SONG/SCALE

SW1   R9 C4   C5

RED   SW4   BLUE   SW5

SW2   SW3   GREEN   4k7   1k   RED

YELLOW   470R   R3   R4   1k

R2   R5   SW6

R1   470R   R6   YELLOW

1k   R8   R7   4k7   CATHODE (-)

1k   GREEN

BLUE   SW8   SW7

PARTS PLACEMENT

Use the following guide to identify where each part should be placed

Buzzer (BZ1): NOTE the orientation does not matter for our use

NEED HELP?

Visit our forum at **masfx.info/forum**