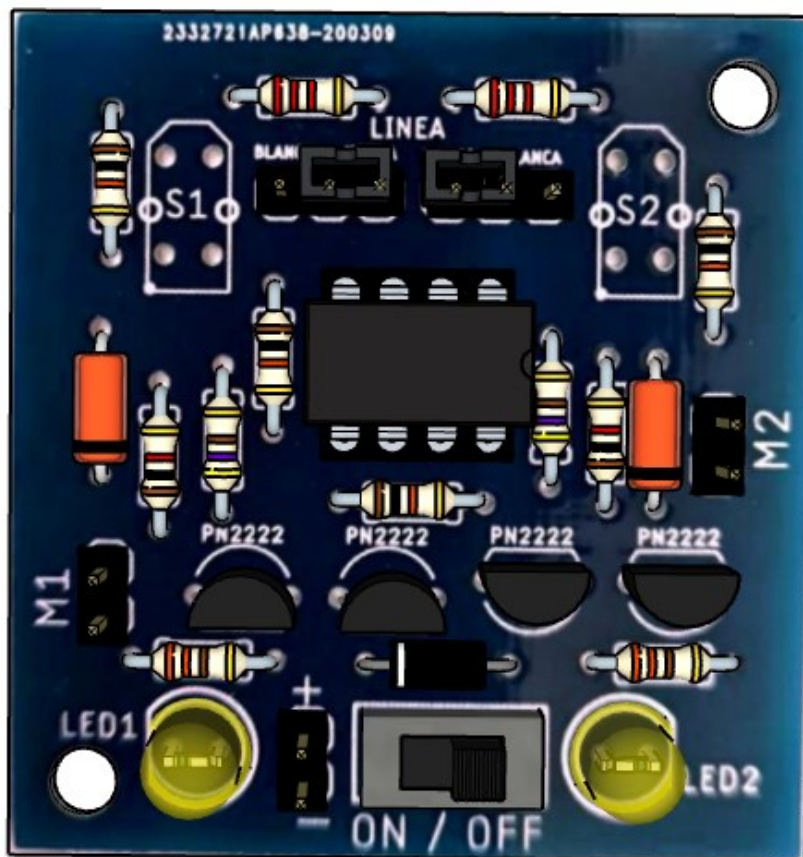


robodacta.mx
robótica didáctica

Manual de Soldado de PCB
Kit Seguidor de Línea Básico V.2
Código KIT-1285



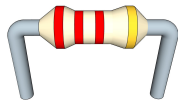
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Para poder armar la tarjeta identifica las siguientes piezas : -----	3
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Para poder armar la tarjeta identifica las siguientes piezas:



2 Resistencias de 1 K Ohm



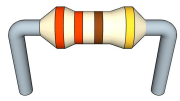
2 Resistencias de 2.2 K Ohm



4 Resistencias de 10 K Ohm



2 Resistencias de 470 Ohm



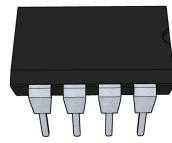
2 Resistencias de 330 Ohm



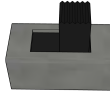
2 Diodos Zener



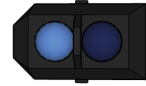
Diodo Rectificador



Circuito integrado



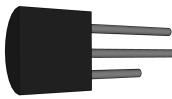
Interruptor



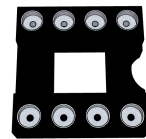
2 Sensores



2 Leds

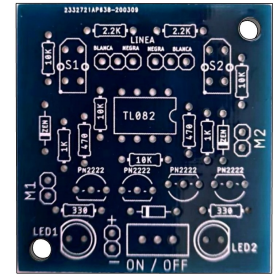


4 Transistores PN 2222

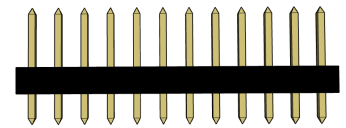


Base de 8 pines

Circuito Impreso "PCB"



Tira de pines



2 Jumpers

Antes de iniciar ten en cuenta lo siguiente:

-Para armar la tarjeta, necesitarás un cautín, soldadura y pinzas de corte, los cuales **no están incluidos** en el kit.

-Ten precaución y asegúrate de contar con la **supervisión de un adulto**.

-Las terminales de los componentes se envían más largas que en los ejemplos; **no las cortes hasta que se indique**.

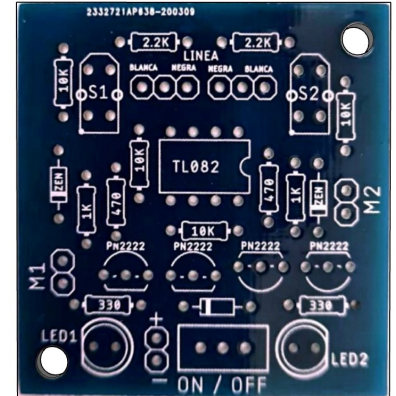
-Algunos componentes tienen polaridad. Estos estarán señalados con una "P" dentro de un círculo, como se muestra en la imagen. Revisa cuidadosamente los ejemplos antes de soldarlos para evitar errores.



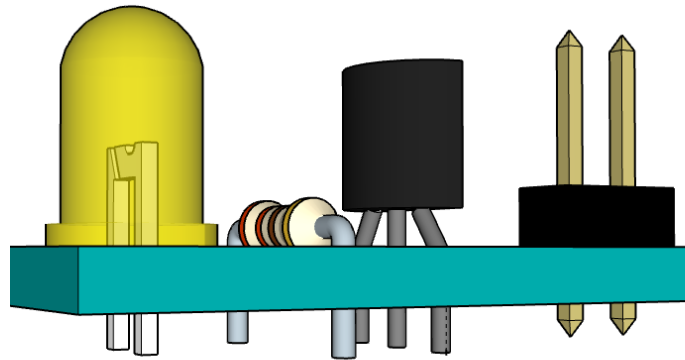
¿Cómo soldar?

1.-Enciende el cautín y ajusta la temperatura entre 320 °C y 370 °C. Si no puedes regular la temperatura, trabaja con rapidez y cuidado para evitar dañar los componentes.

2.-Inserta el componente en la tarjeta por la cara donde se encuentra la información (la cara que se muestra en la imagen). Deja el componente lo más pegado posible a la placa y mantenlo en esa posición hasta que sea soldado. Si es necesario, usa pinzas o cinta para fijarlo, o apoya la placa sobre una mesa para mantenerlos en su sitio.

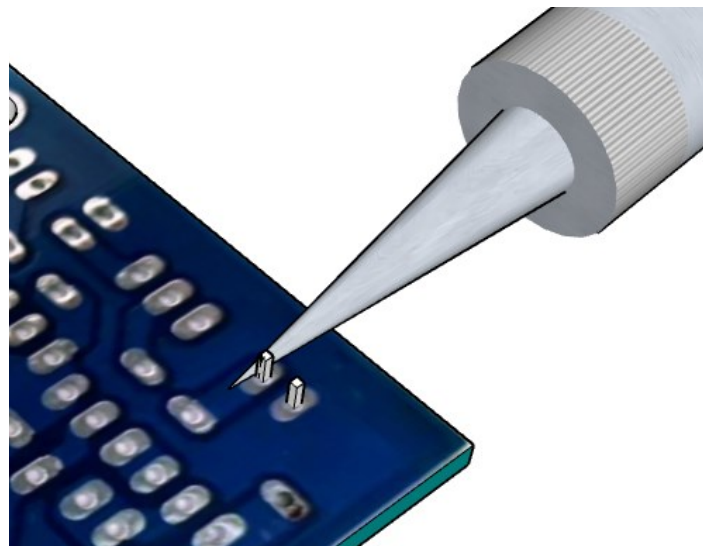


Los componentes tendrían que quedar de esta manera:



Esto es un ejemplo, aun no coloques algún componente.

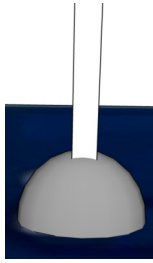
3.-Coloca la punta del cautín sobre la pista de la placa, justo donde se encuentra la terminal que vas a soldar, y espera de 1 a 2 segundos.



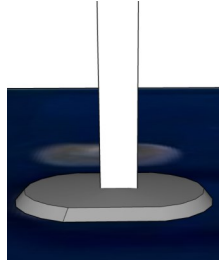
4.-Aplica el estaño sin mover el cautín. Acerca el hilo de estaño a la unión; este debe derretirse y cubrir la unión con una forma cónica y brillante. Retira primero el hilo de estaño y luego el cautín.

Deja enfriar unos segundos sin mover el componente.

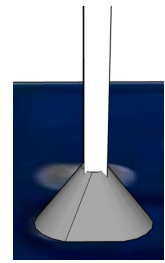
Mucha soldadura:



Poca soldadura:



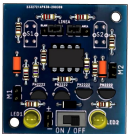
Soldadura correcta:



Comienza a soldar los componentes

Coloca cada componente como se muestra y, posteriormente, suéldalo. Luego pasa al siguiente componente y así sucesivamente hasta terminar.

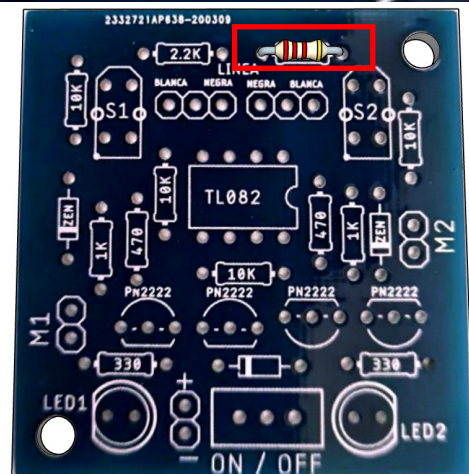
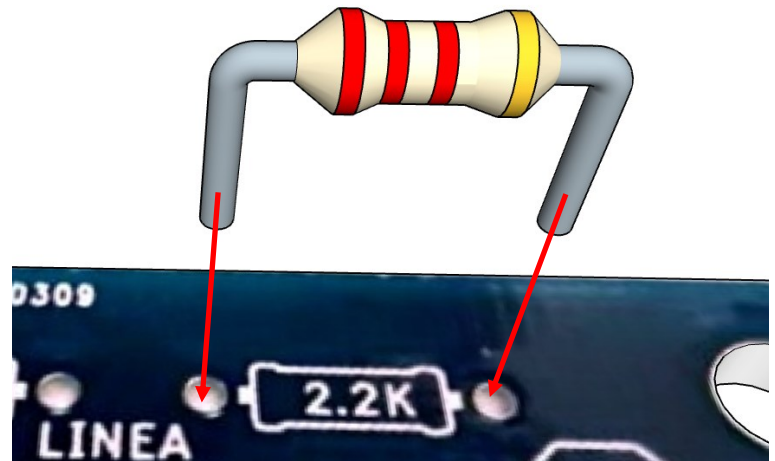
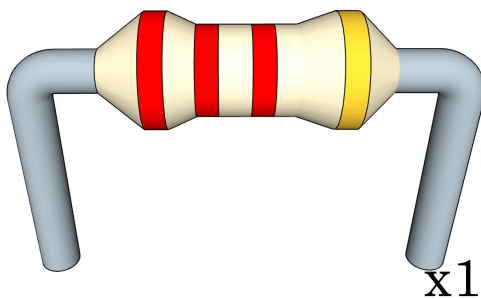
Nota: si tienes alguna duda acerca de las resistencias visita la tabla con el código de colores al final del manual.

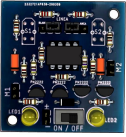


1

Resistencia de 2.2 K Ohm

Rojo, rojo, rojo

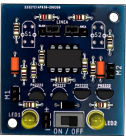
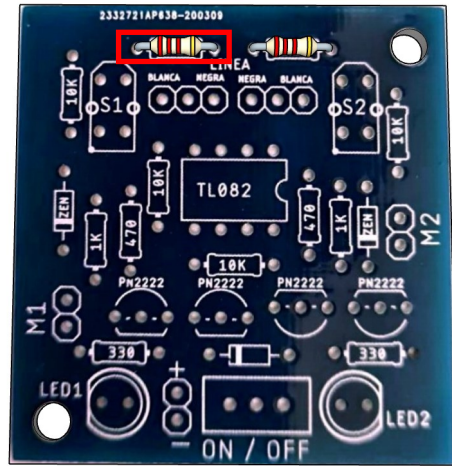
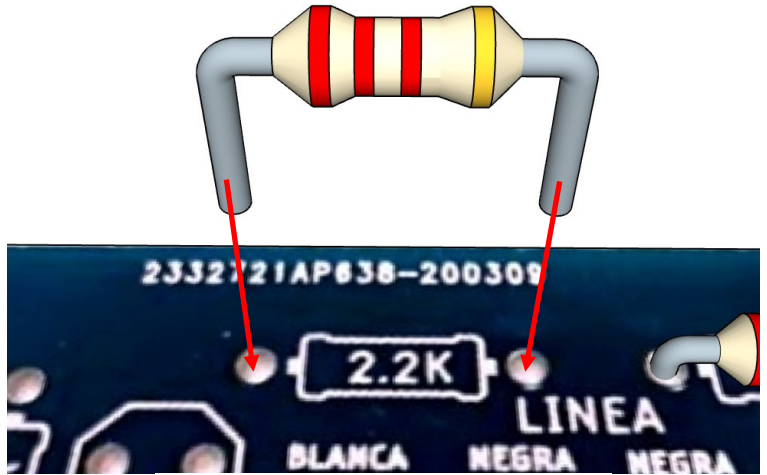
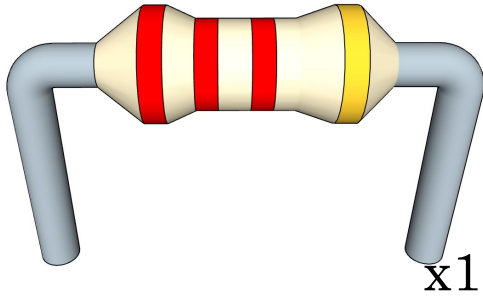




2

Resistencia de 2.2 K Ohm

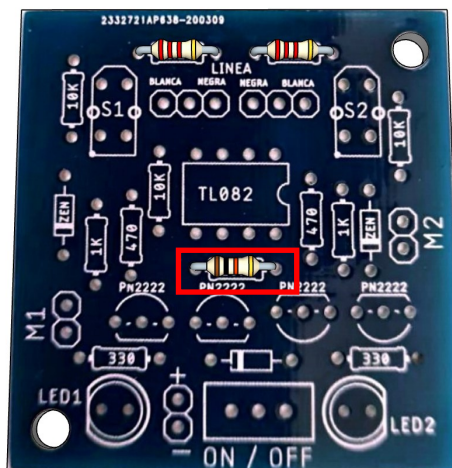
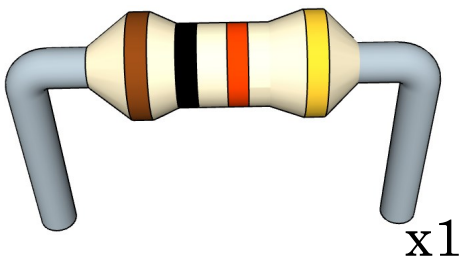
Rojo, rojo, rojo

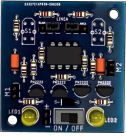


3

Resistencia de 10 K Ohm

Marrón, negro, naranja

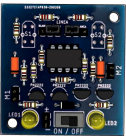
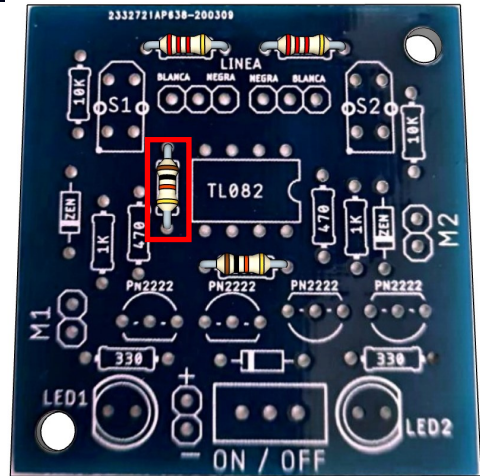
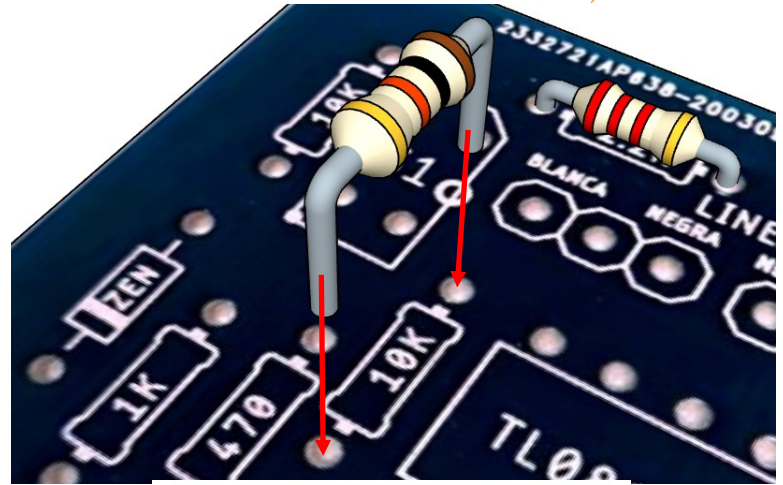
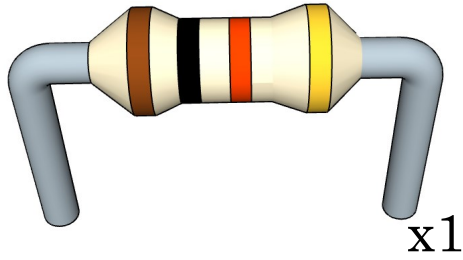




4

Resistencia de 10 K Ohm

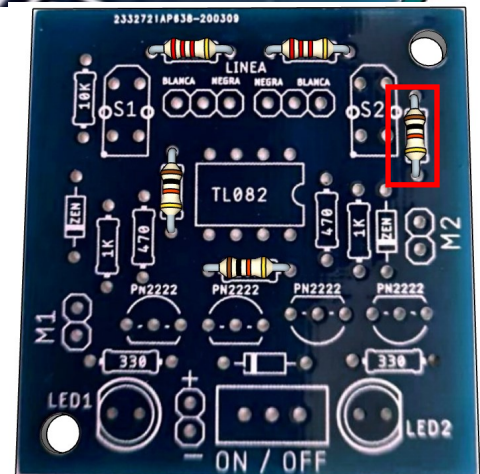
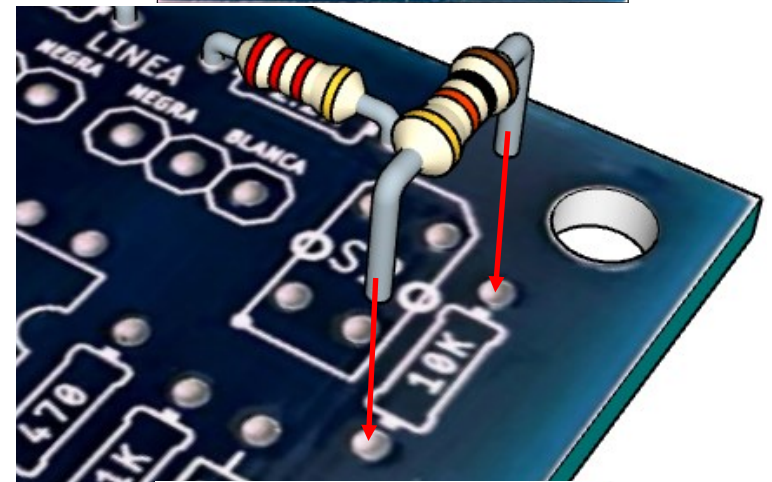
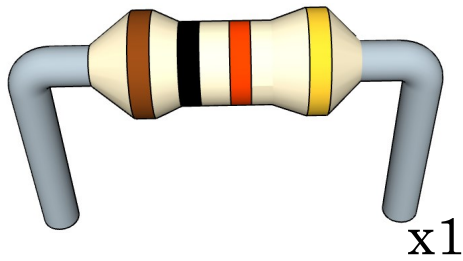
Marrón, negro, naranja

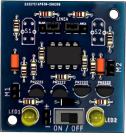


5

Resistencia de 10 K Ohm

Marrón, negro, naranja

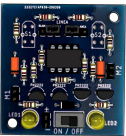
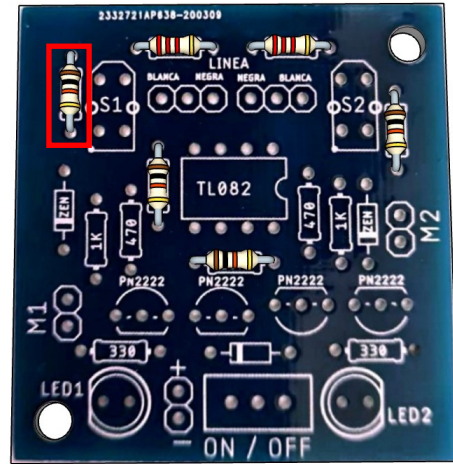
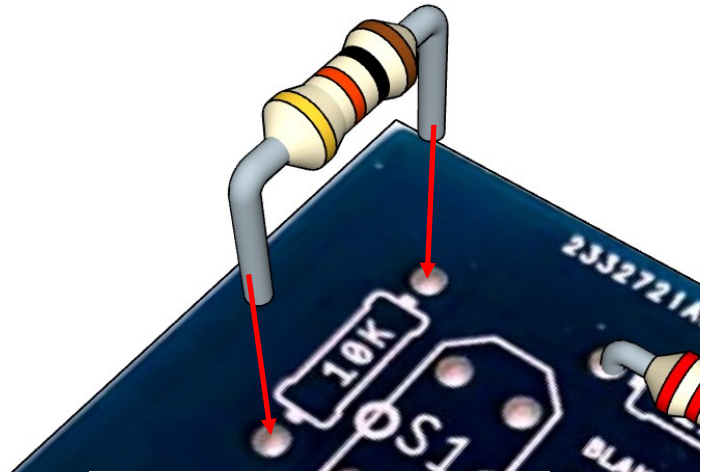
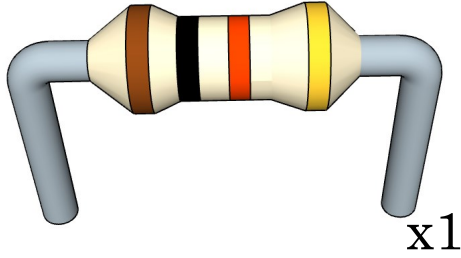




6

Resistencia de 10 K Ohm

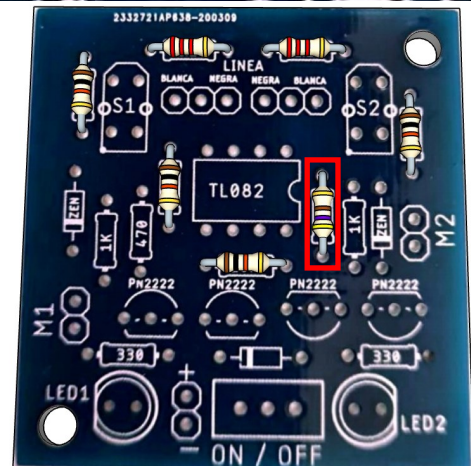
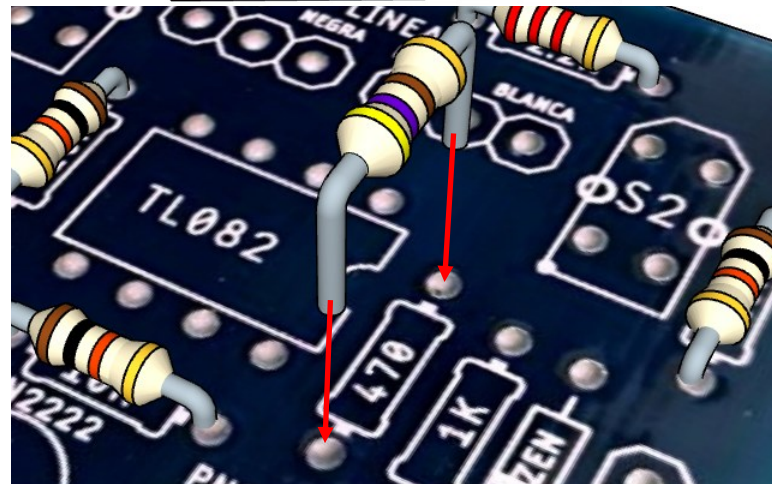
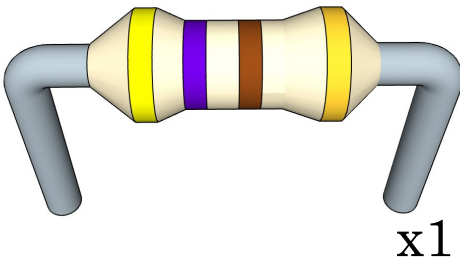
Marrón, negro, naranja

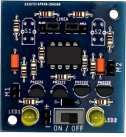


7

Resistencia de 470 Ohm

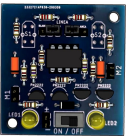
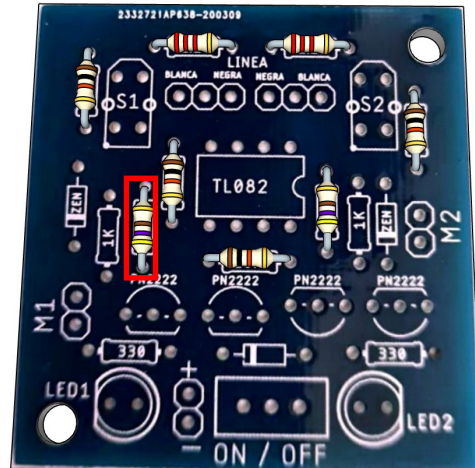
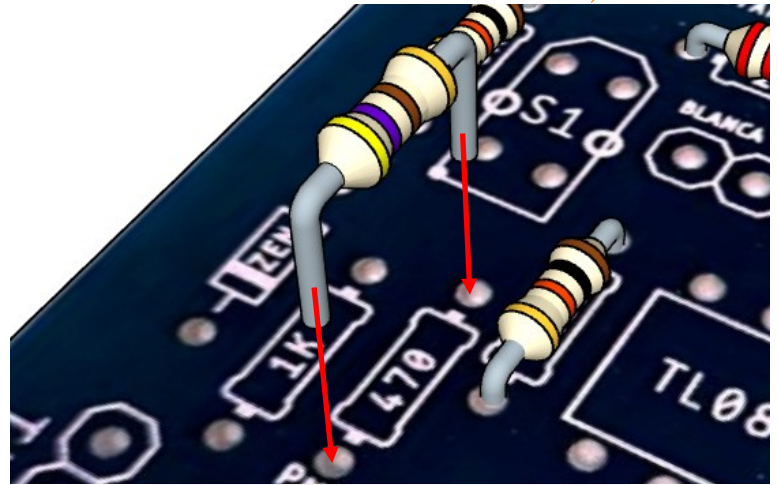
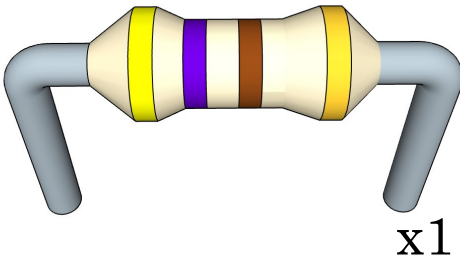
Amarillo, violeta, marrón





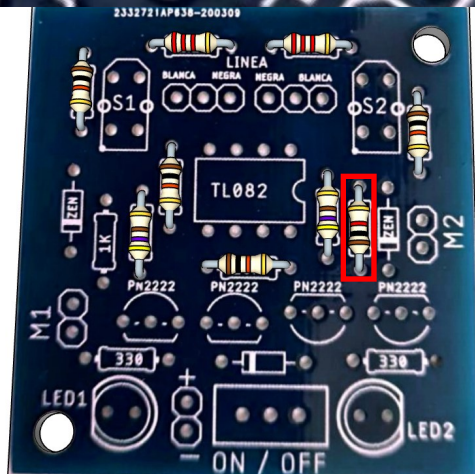
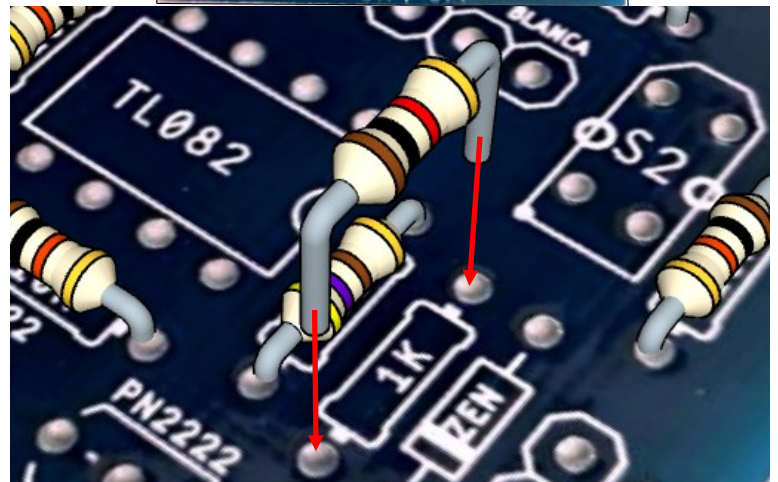
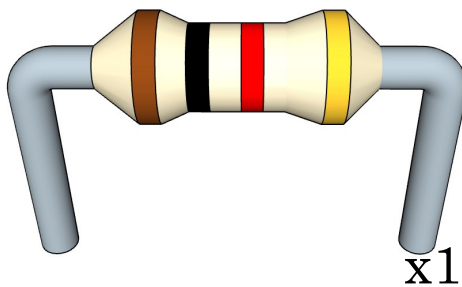
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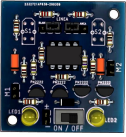
Resistencia de 470 Ohm
Amarillo, violeta, marrón



9

Resistencia de 1 K Ohm
Marrón, negro, rojo

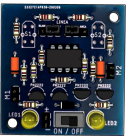
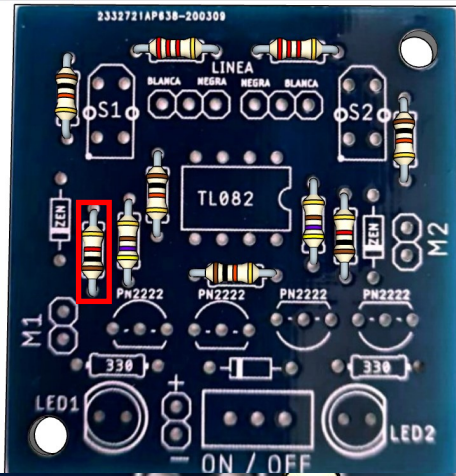
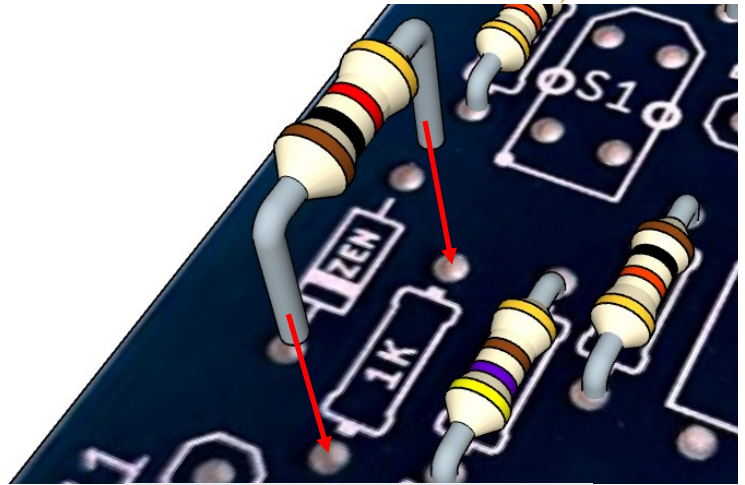
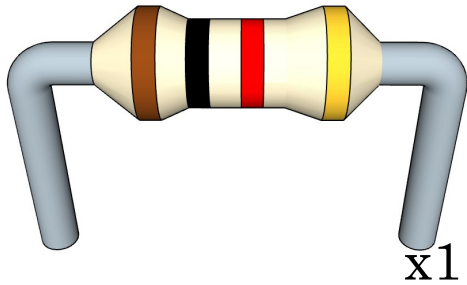




10

Resistencia de 1 K Ohm

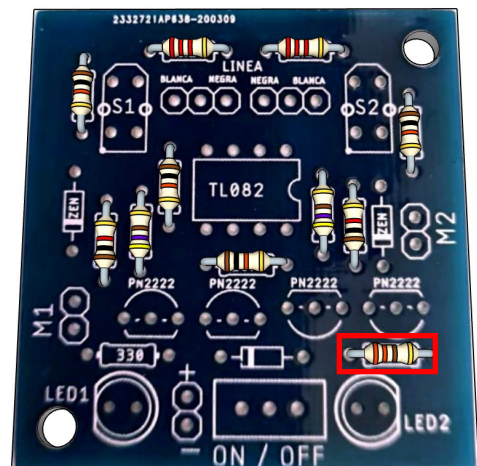
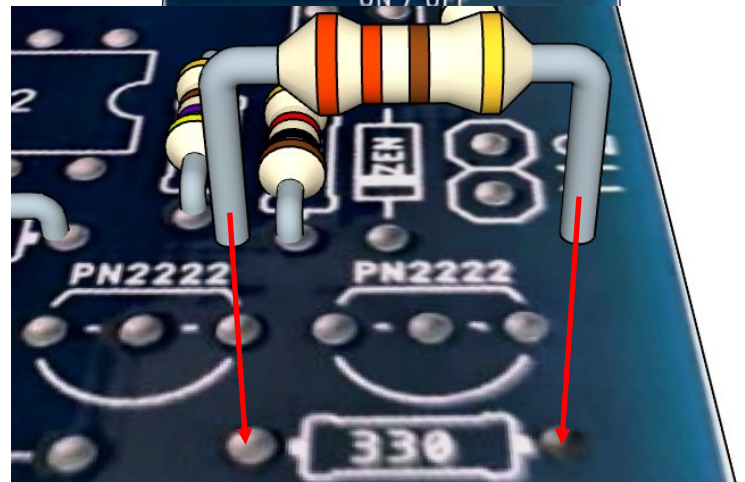
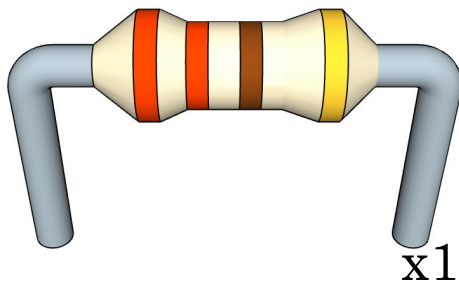
Marrón, negro, rojo

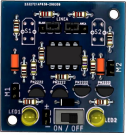


11

Resistencia de 330 Ohm

Naranja, naranja, marrón

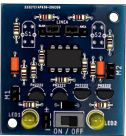
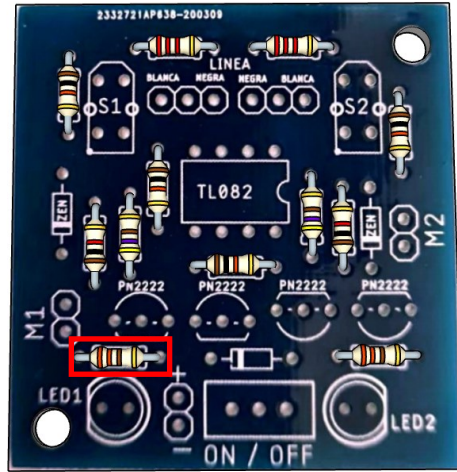
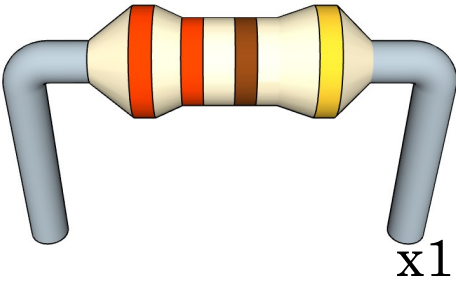




12

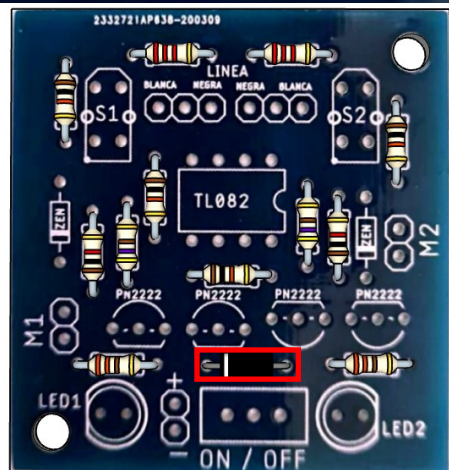
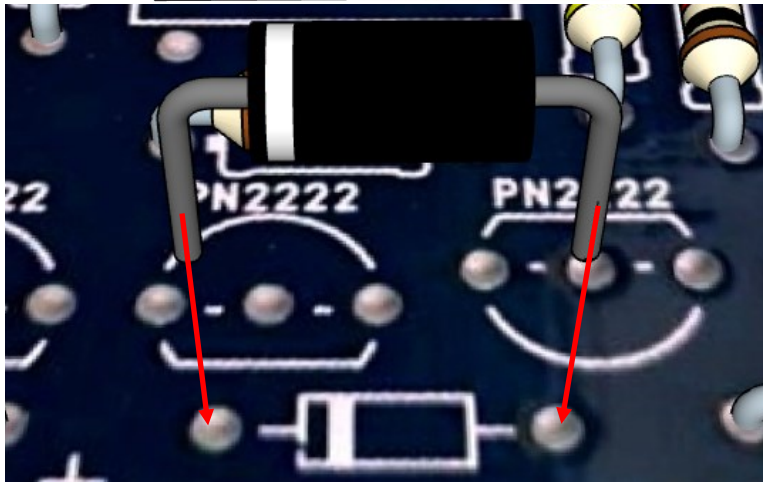
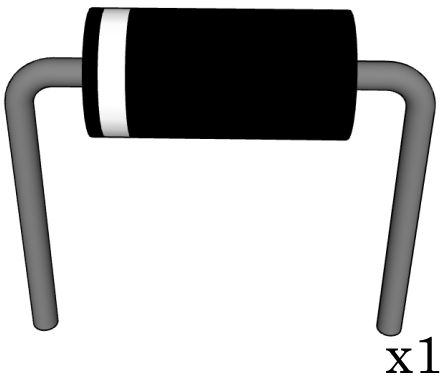
Resistencia de 330 Ohm

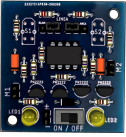
Naranja, naranja, marrón



13

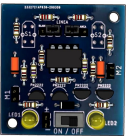
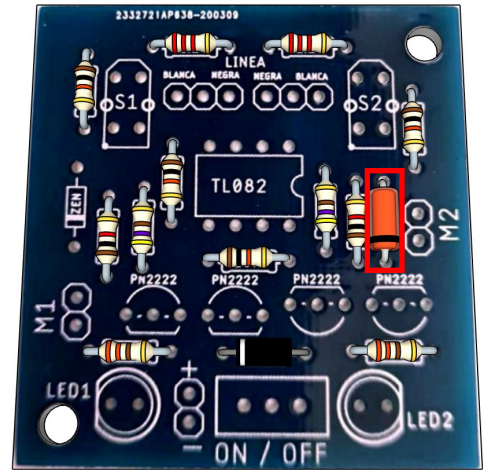
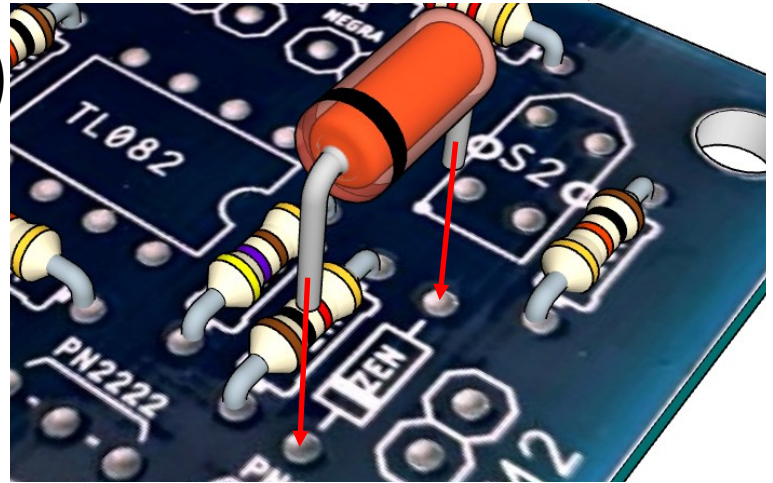
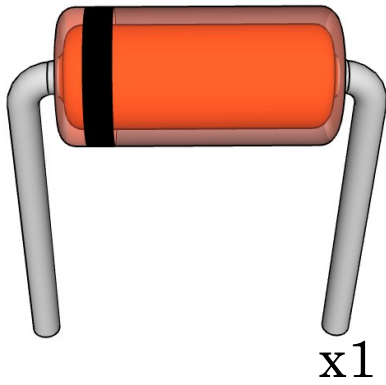
Diodo Rectificador





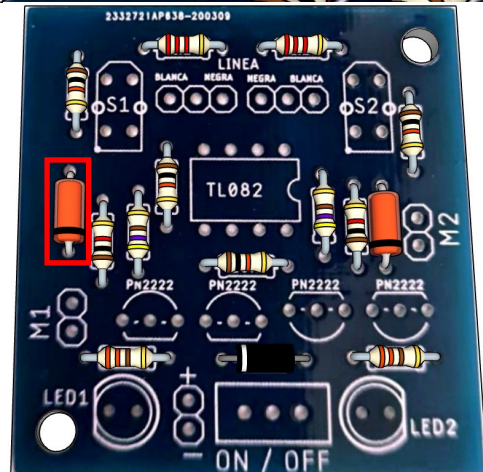
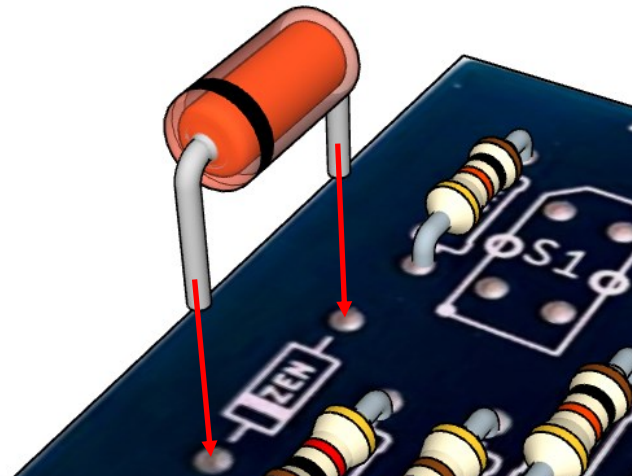
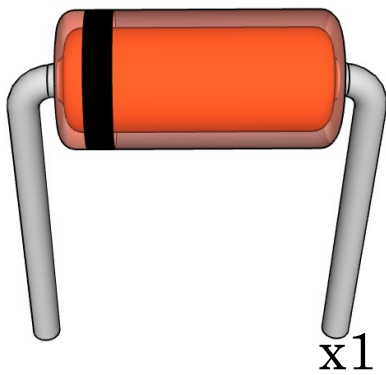
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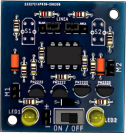
Diodo Zener



15

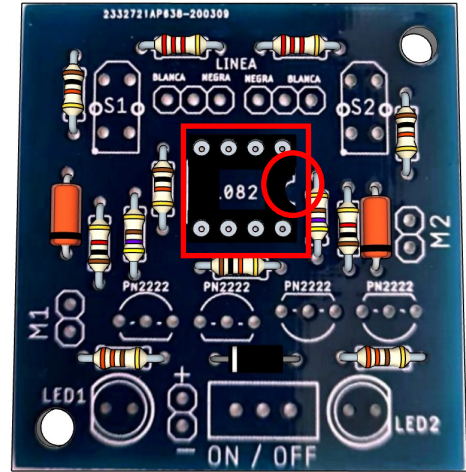
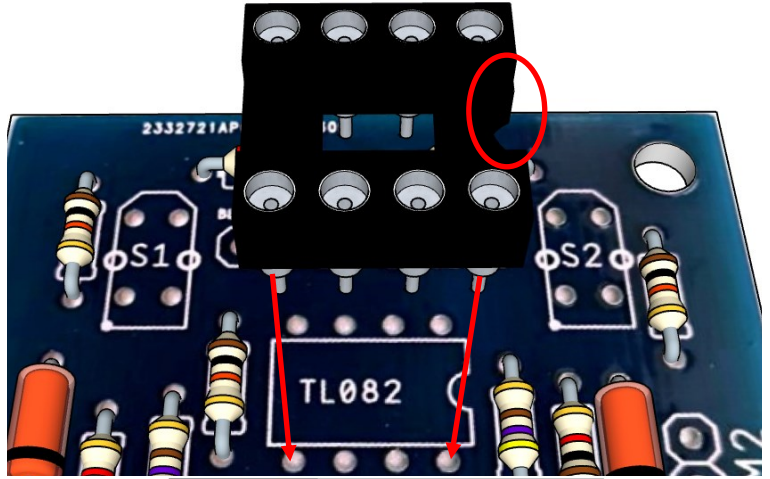
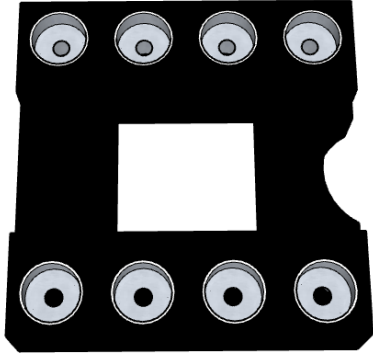
Diodo Zener



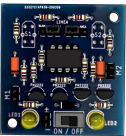


16

Base de 8 pines

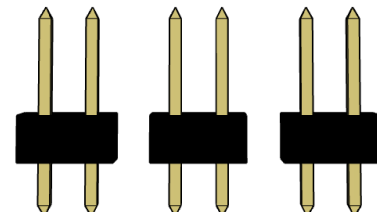
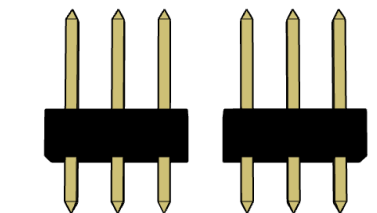
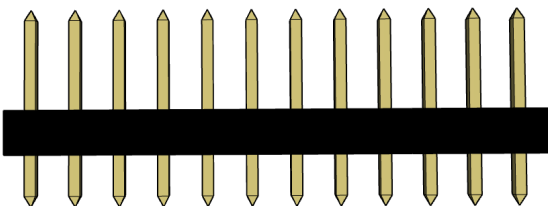
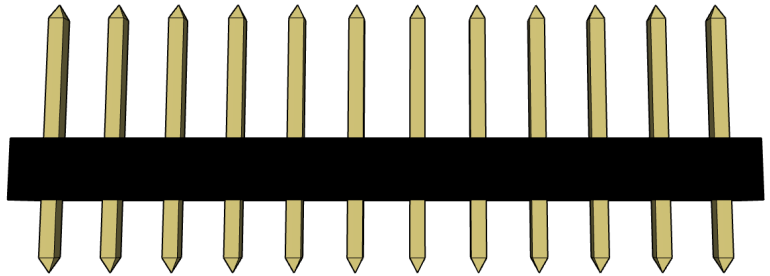


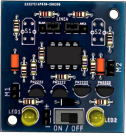
Nota: Este componente no tiene polaridad, pero debe colocarse en la posición que se muestra.



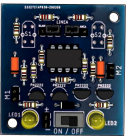
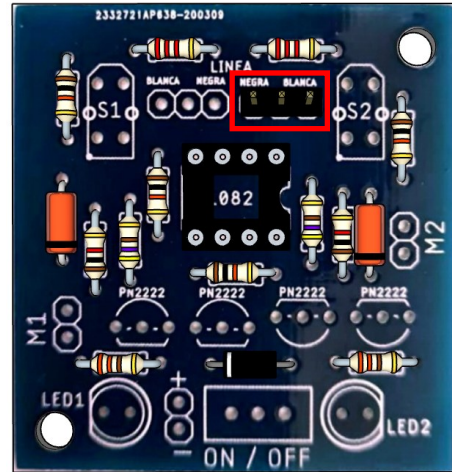
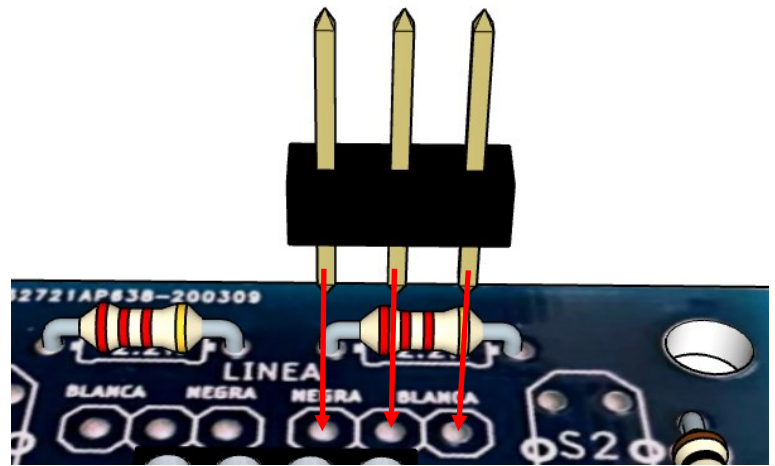
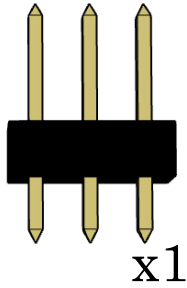
17

Nota: separa la tira de pines cuidadosamente

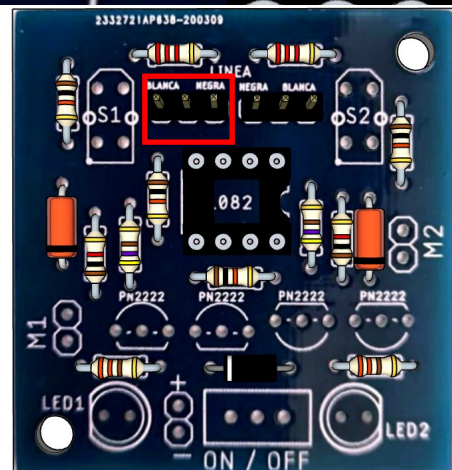
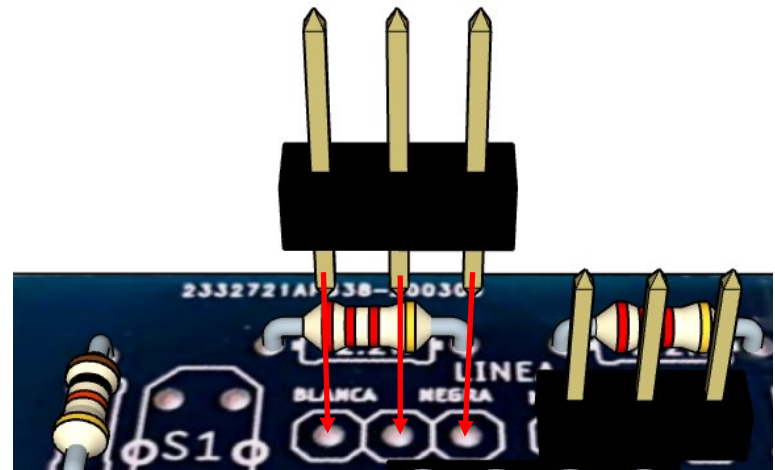
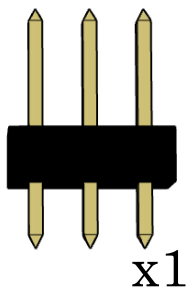


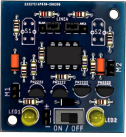


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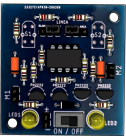
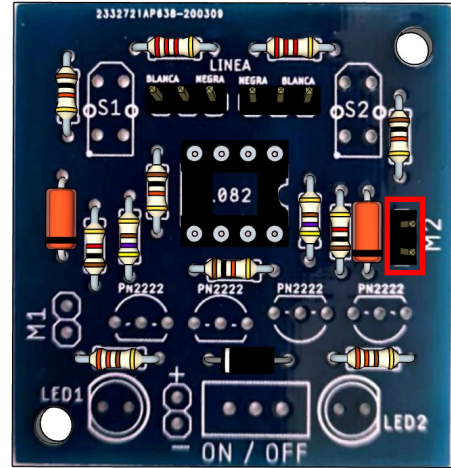
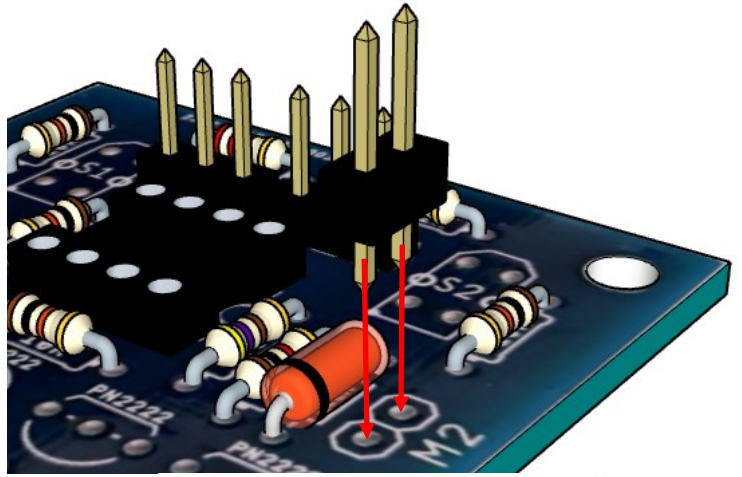
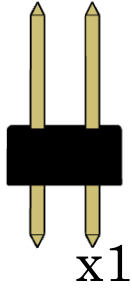


19

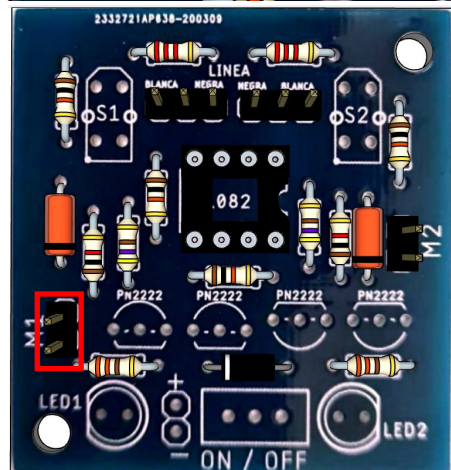
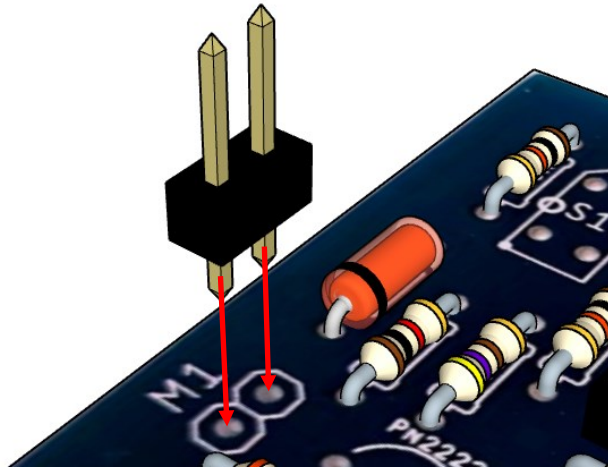
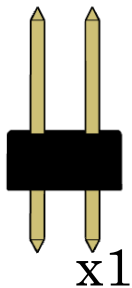


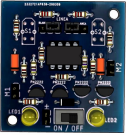


20

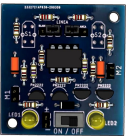
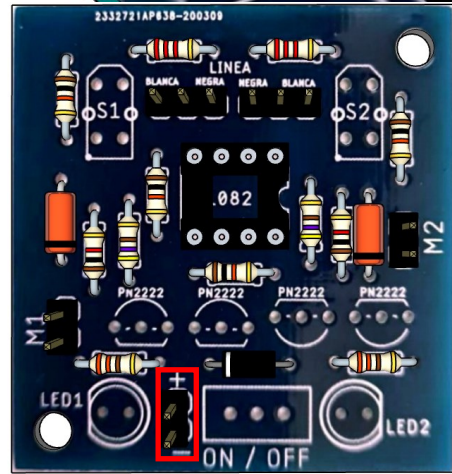
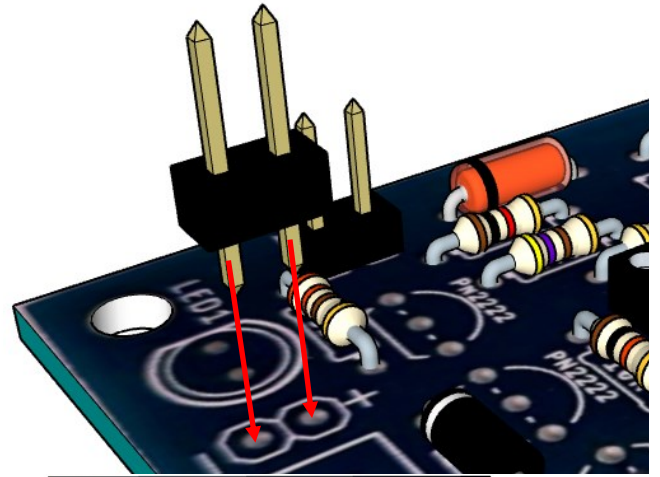
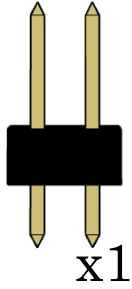


21



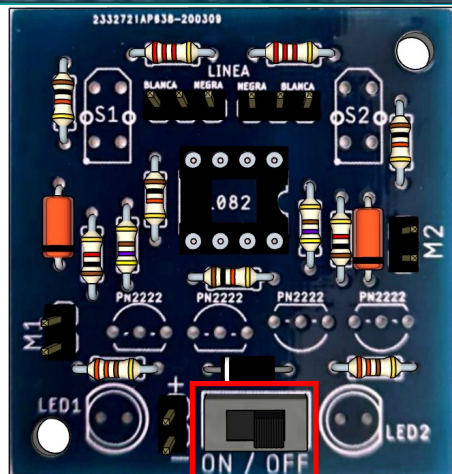
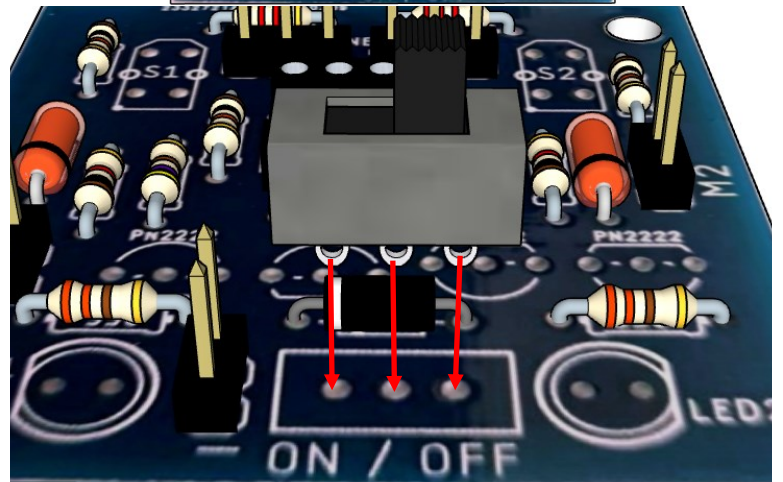
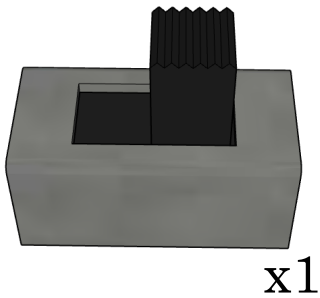


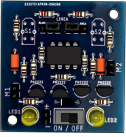
22



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Interruptor

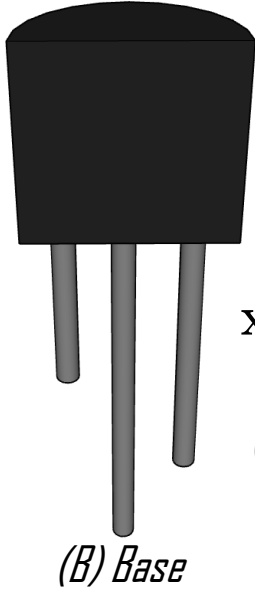




24



Transistor PN 2222

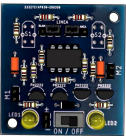
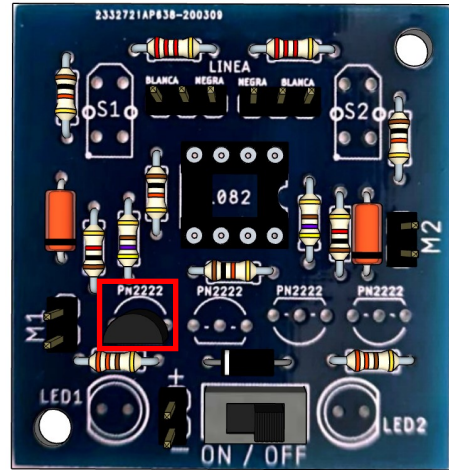
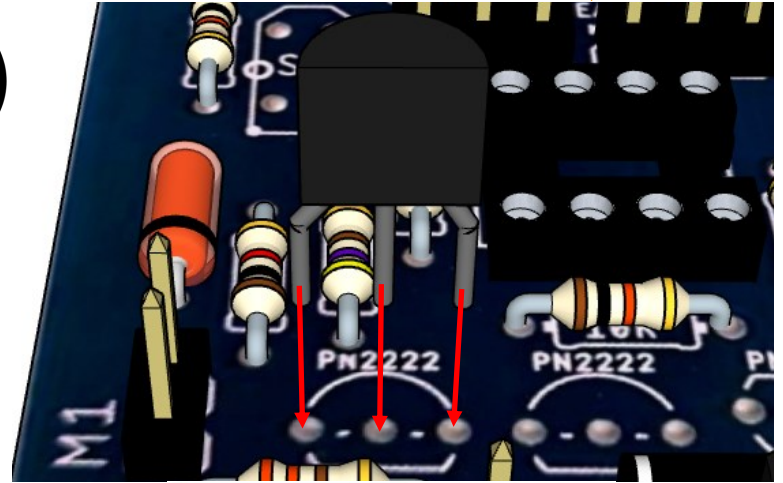


x1

(E) Emisor

(C) Colector

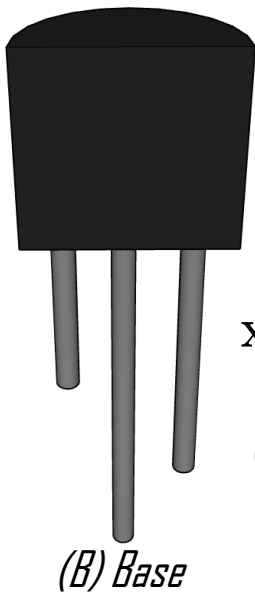
(B) Base



25



Transistor PN 2222

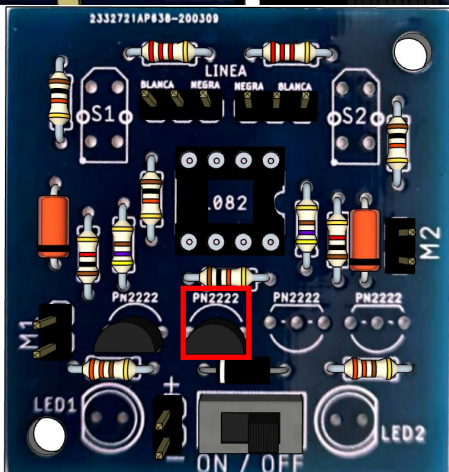
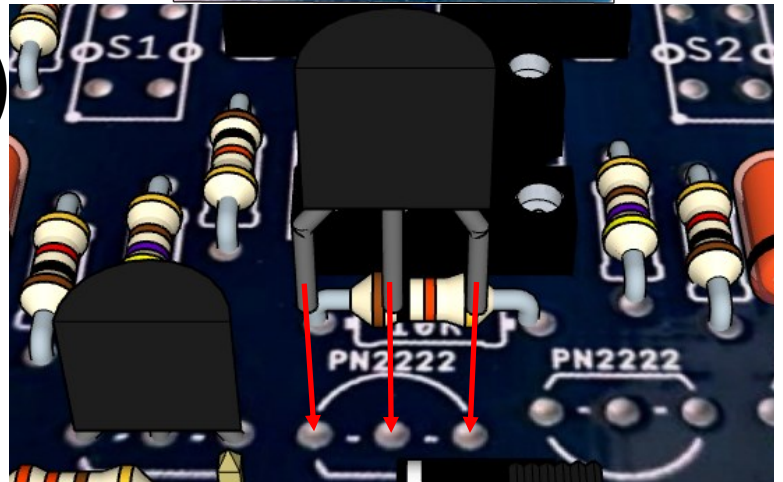


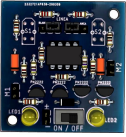
x1

(E) Emisor

(C) Colector

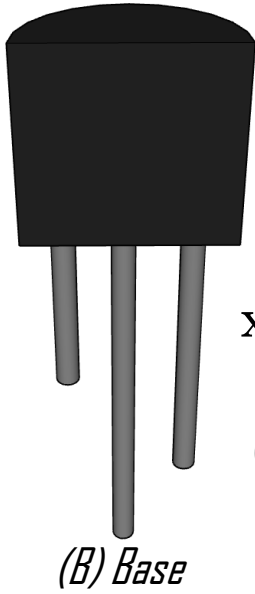
(B) Base





26

Transistor PN 2222

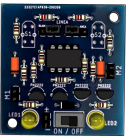
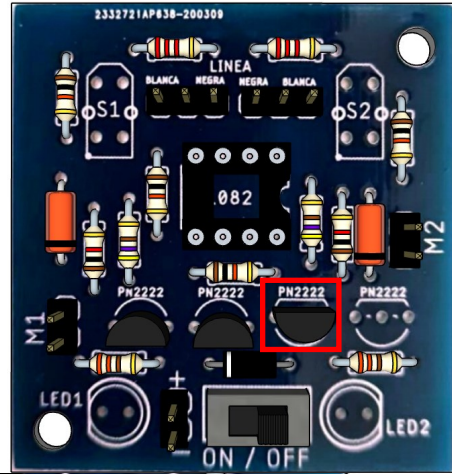
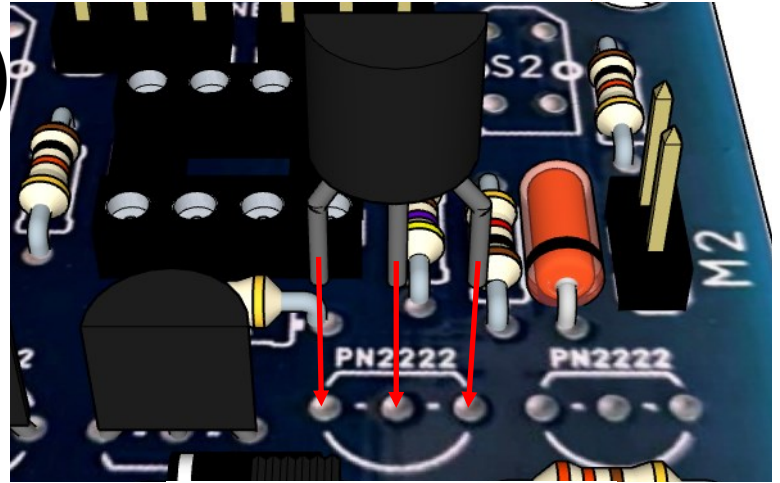


x1

(E) Emisor

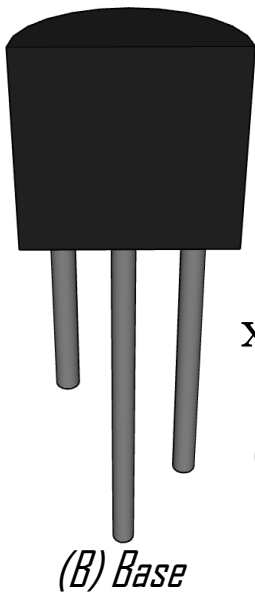
(C) Colector

(B) Base



27

Transistor PN 2222

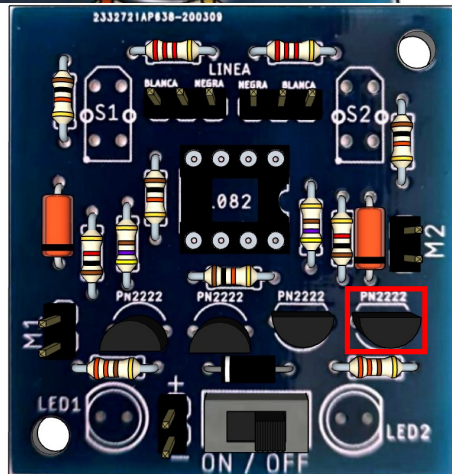
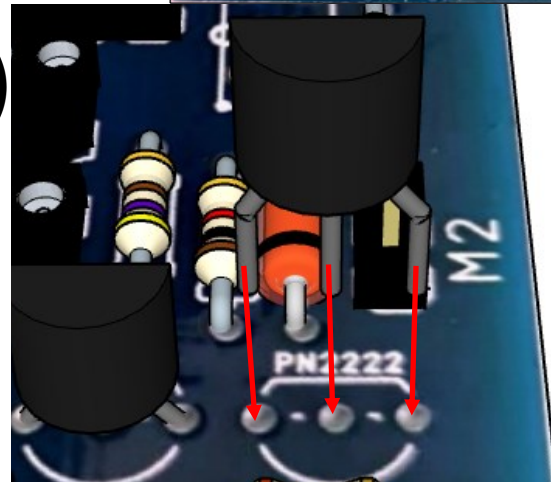


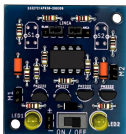
x1

(E) Emisor

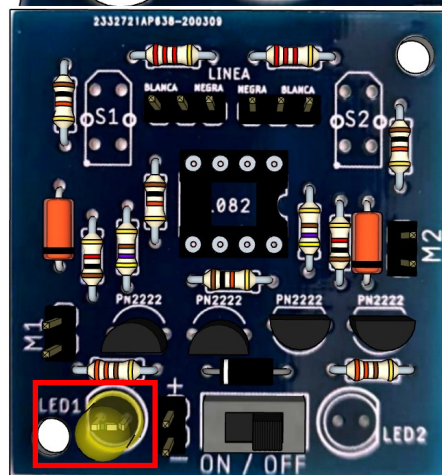
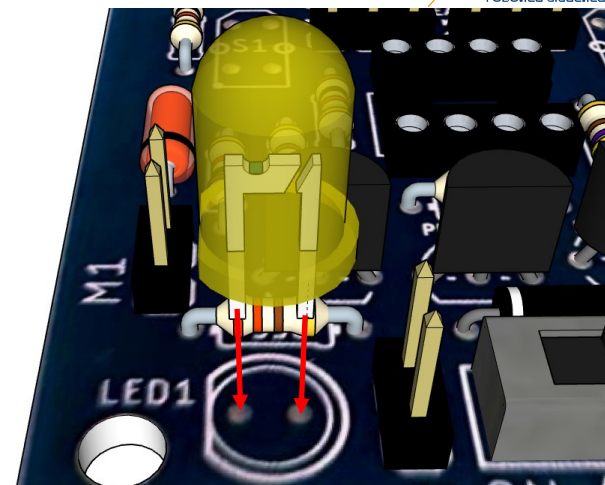
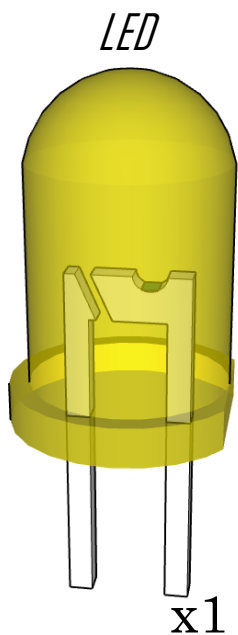
(C) Colector

(B) Base

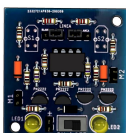




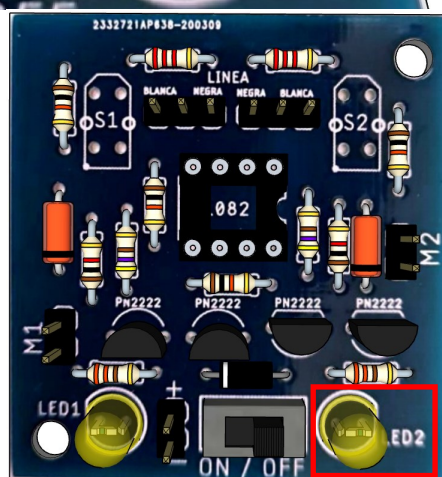
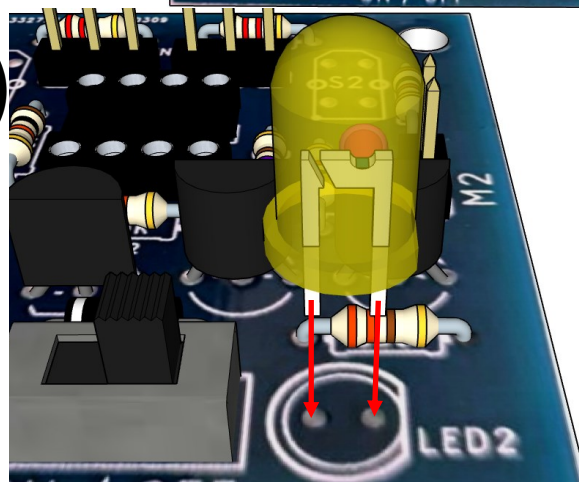
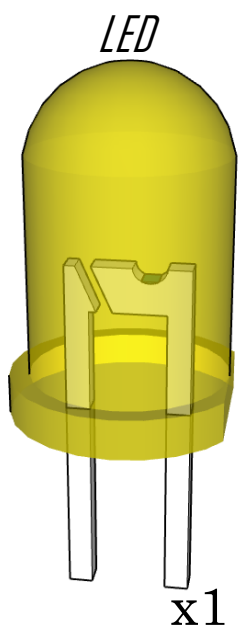
28

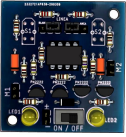


Nota: la polaridad se diferencia por la parte plana del led



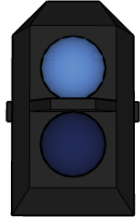
29



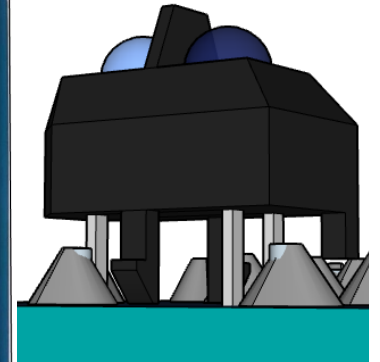
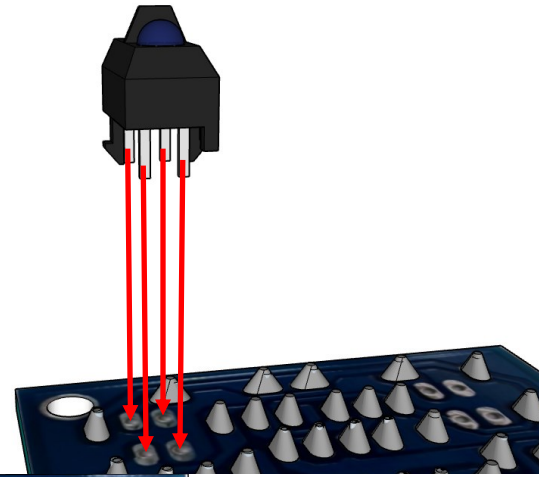


30

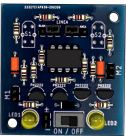
Sensor



x1

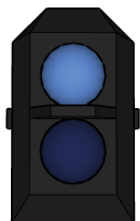


Nota: Coloca el sensor hasta que sus pestañas hagan tope con la placa. Debe quedar recto y se suelda del mismo lado en el que se soldaron los demás componentes.

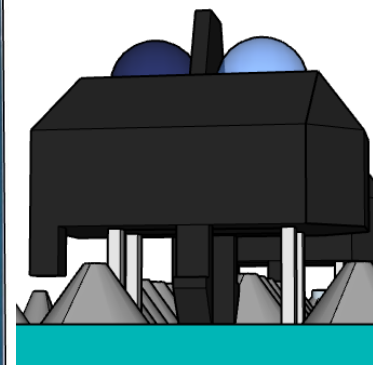
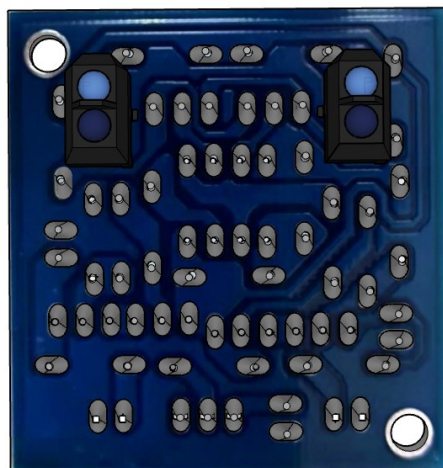
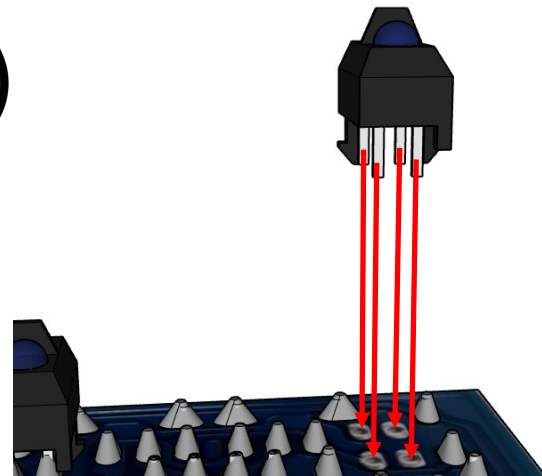


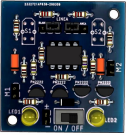
31

Sensor

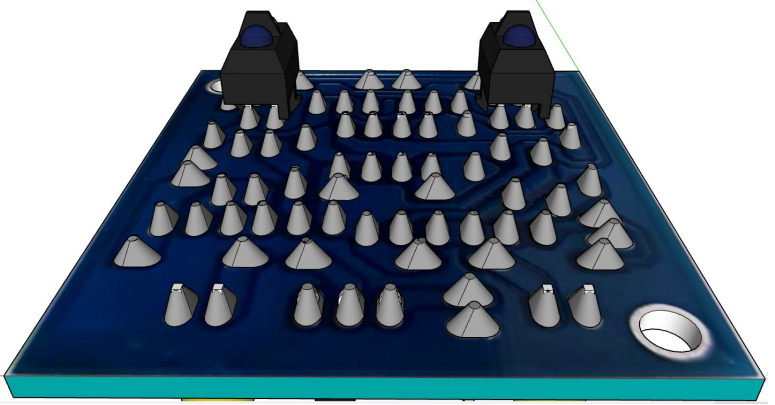


x1

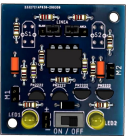
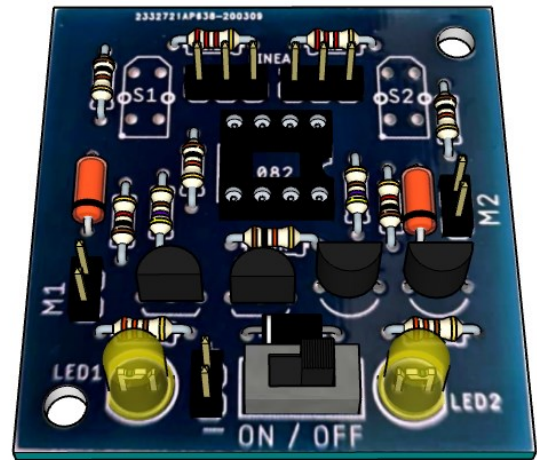




32

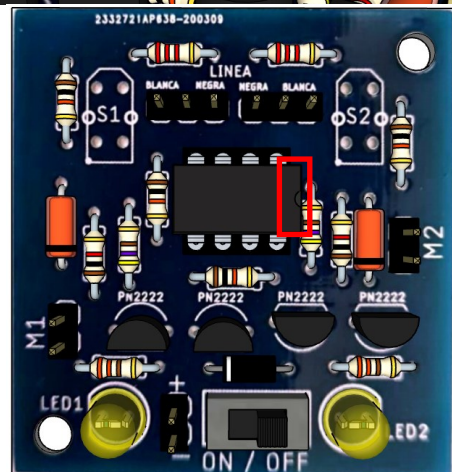
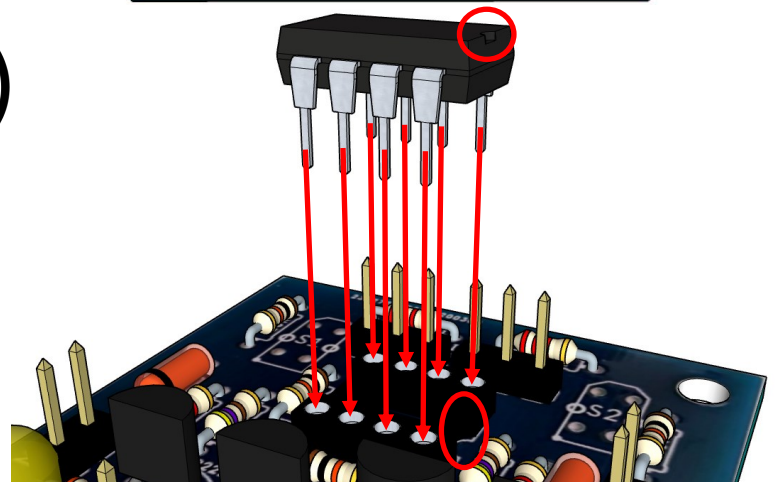
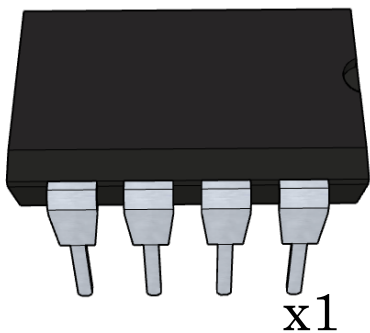


Retira las terminales excedentes de la tarjeta, de modo que queden al ras de la soldadura.



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Circuito integrado



Nota: la polaridad la distingues por la muesca, que queda a la derecha como se muestra en la imagen.

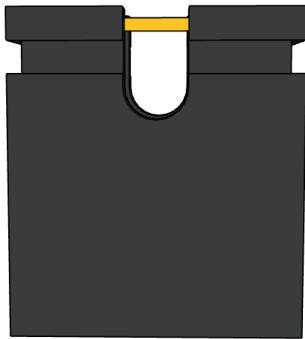
Ten cuidado de no doblar las terminales.

Selección de Programa

Para seleccionar el programa del kit, es necesario posicionar los jumpers correctamente. El funcionamiento del kit dependerá de la posición en la que se coloquen.

Línea Negra

Jumper



x2

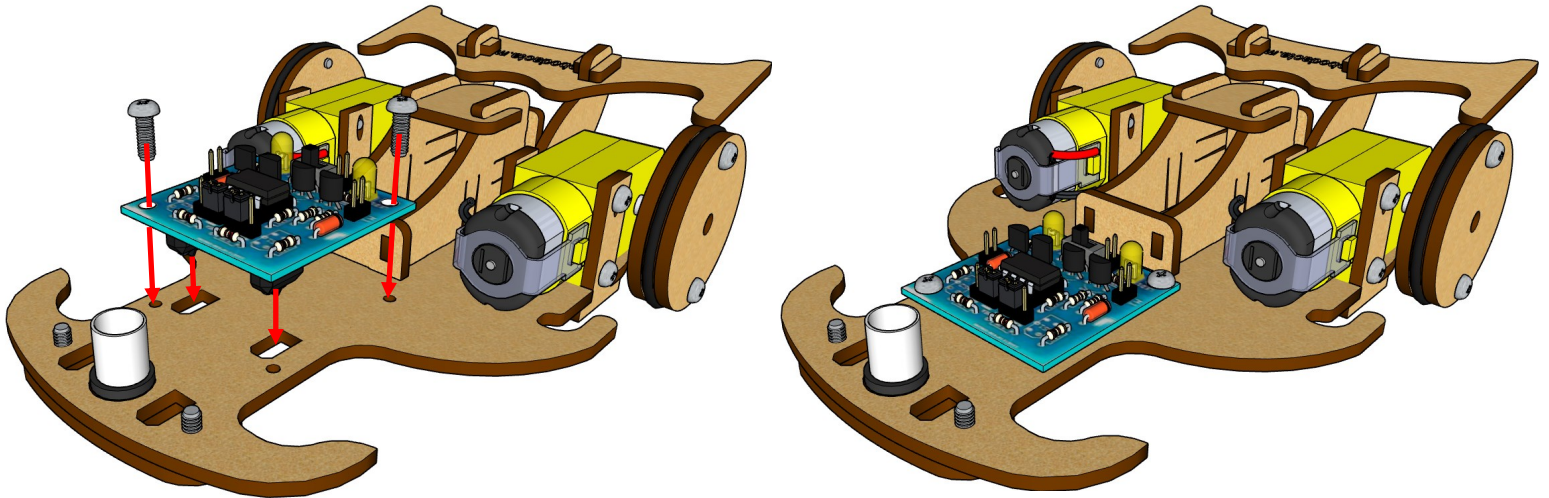


Línea Blanca

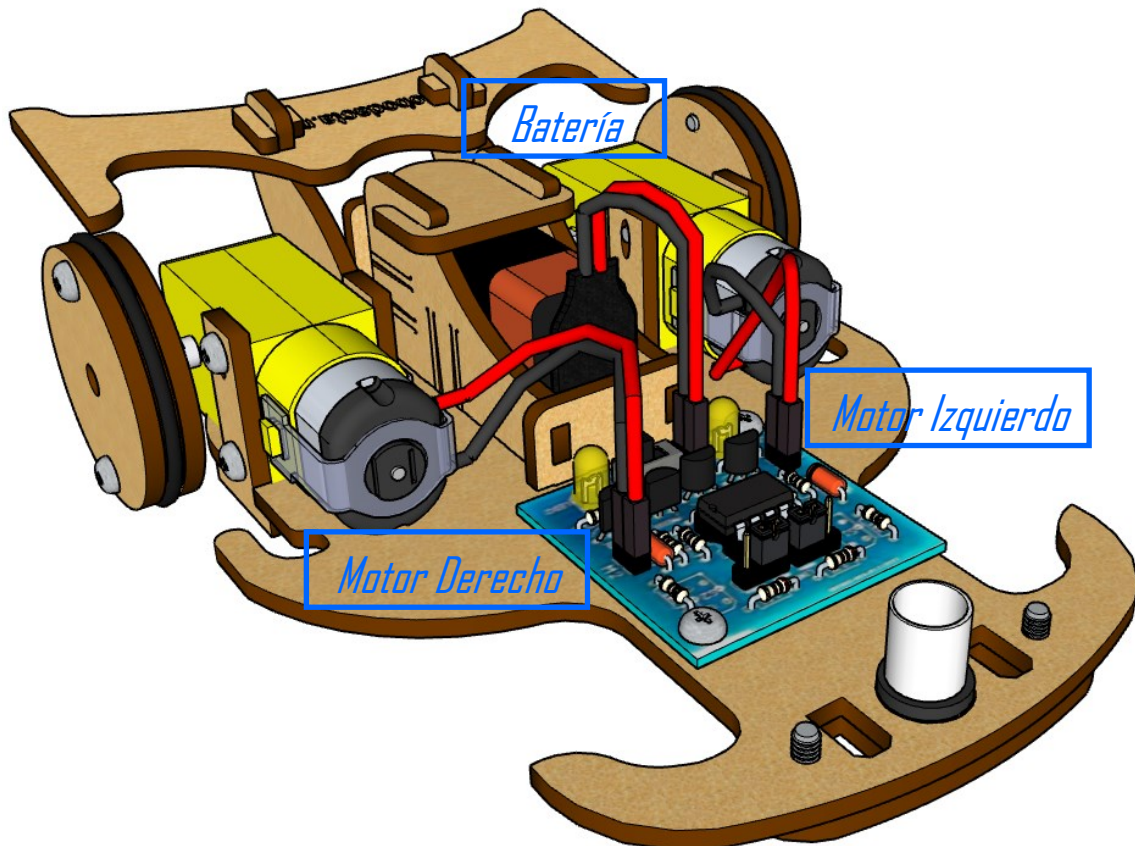


Coloca la Tarjeta

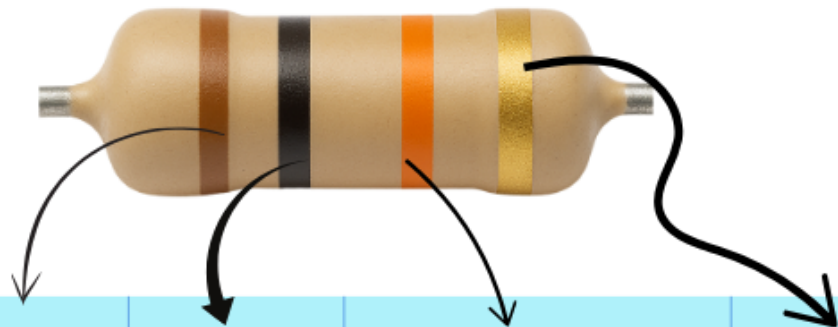
Coloca la tarjeta en su posición y asegúrala con un par de tornillos de 1/8 x 3/8



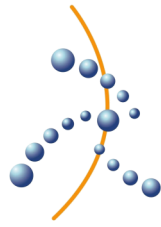
Conexiones finales



CÓDIGO DE COLORES PARA RESISTENCIAS CON 4 BANDAS



COLOR	Banda 1	Banda 2	Multiplicador	Tolerancia
NEGRO	0	0	x 1 Ω	
MARRÓN	1	1	x 10 Ω	+/-1%
ROJO	2	2	x 100 Ω	+/-2%
NARANJA	3	3	x 1,000 Ω	
AMARILLO	4	4	x 10,000 Ω	
VERDE	5	5	x 100,000 Ω	
AZUL	6	6	x 1,000,000 Ω	
VIOLETA	7	7	x 10,000,000 Ω	
GRIS	8	8	x 100,000,000 Ω	
BLANCO	9	9	x 1,000,000,000 Ω	
DORADO			x 0,1 Ω	+/- 5%
PLATEADO			x 0,01 Ω	+/-10%
			SIN BANDA	+/-20%



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