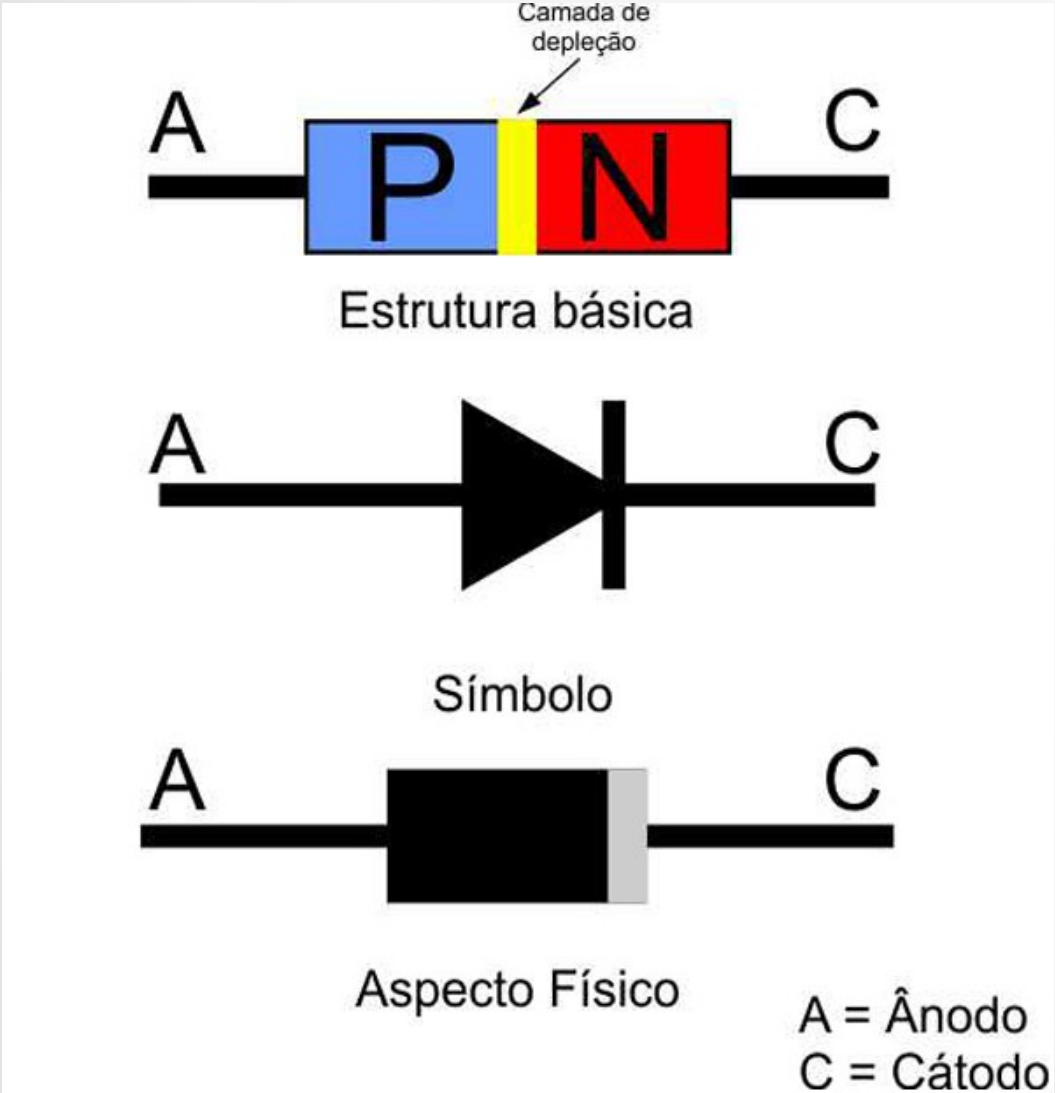
Diodo

O diodo é um componente elétrico que permite que a corrente o atravesse num sentido com muito mais facilidade do que no outro. O tipo mais comum de diodo é o diodo semicondutor, no entanto, existem outras tecnologias de diodo. O termo "diodo" é habitualmente reservado a dispositivos para sinais baixos, com correntes iguais ou menores

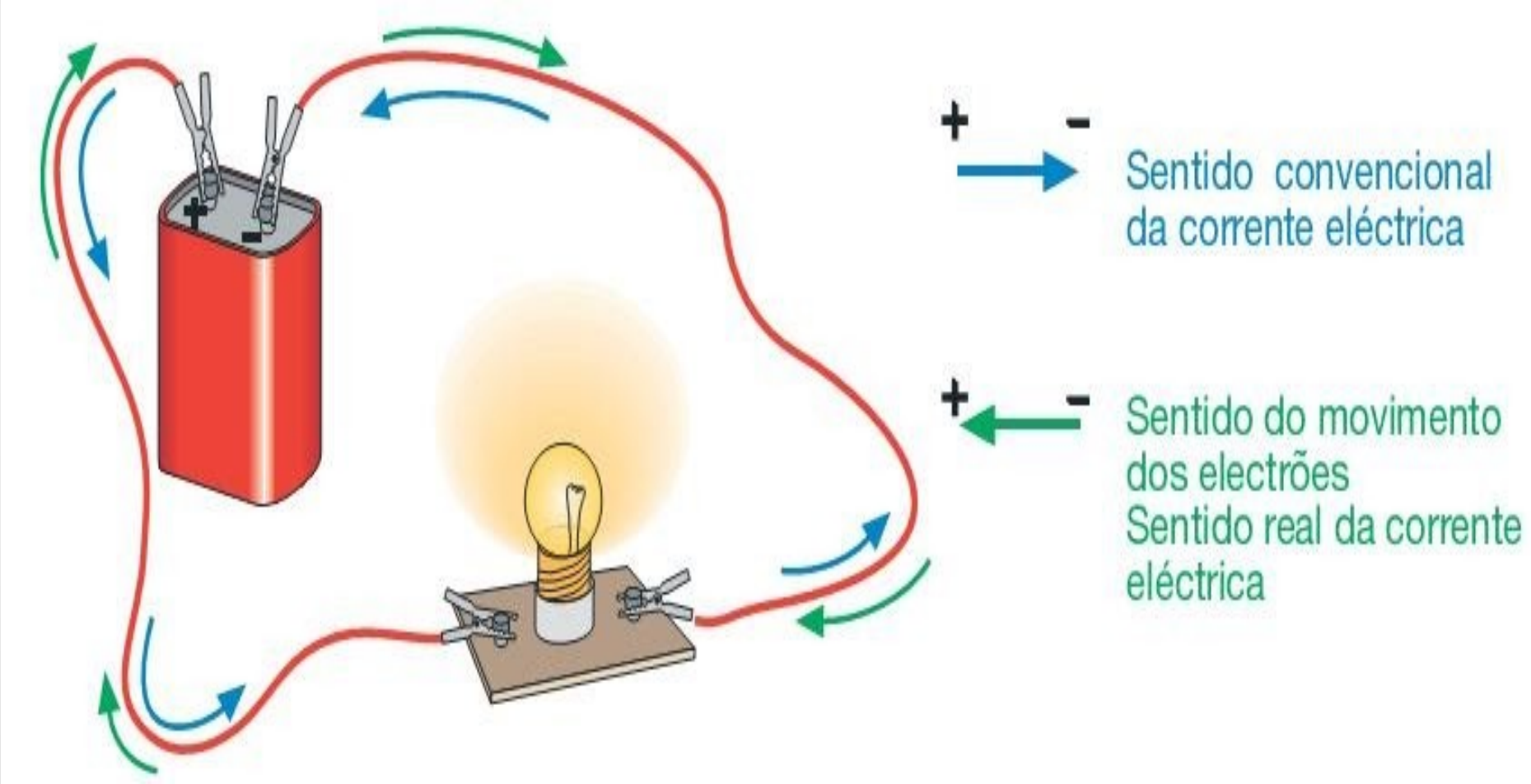
Fonte: https://pt.wikipedia.org/wiki/Diodo_semicondutor

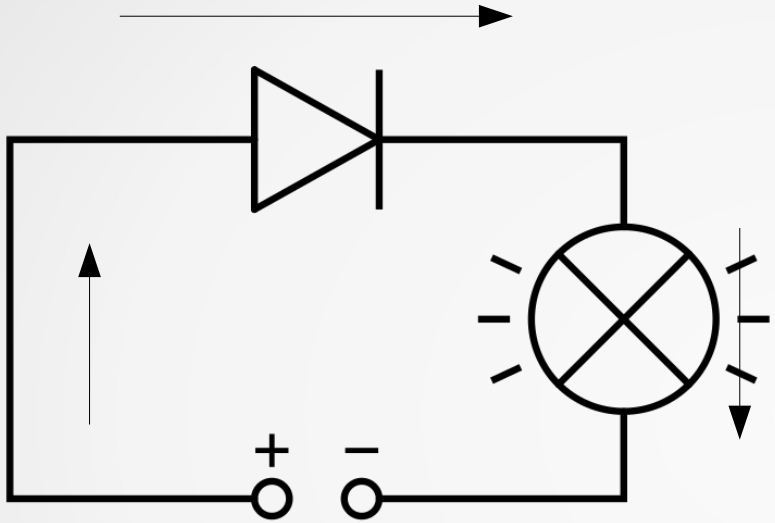
Diodos


Camada de depleção
A
P
N
C
Estrutura básica
A
C
Símbolo
A
C
Aspecto Físico
A = Ânodo
C = Cátodo

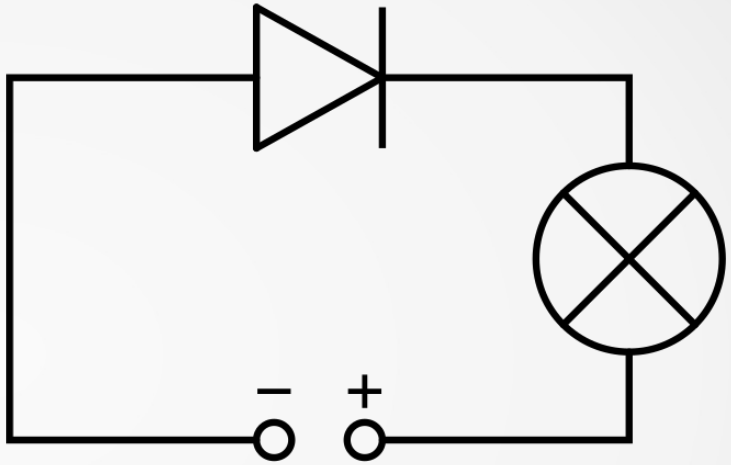
Corrente elétrica

http://cientificamentefalando-margarida.blogspot.com

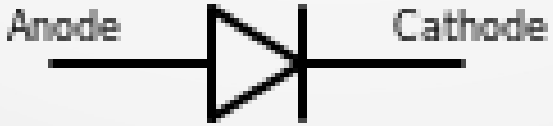




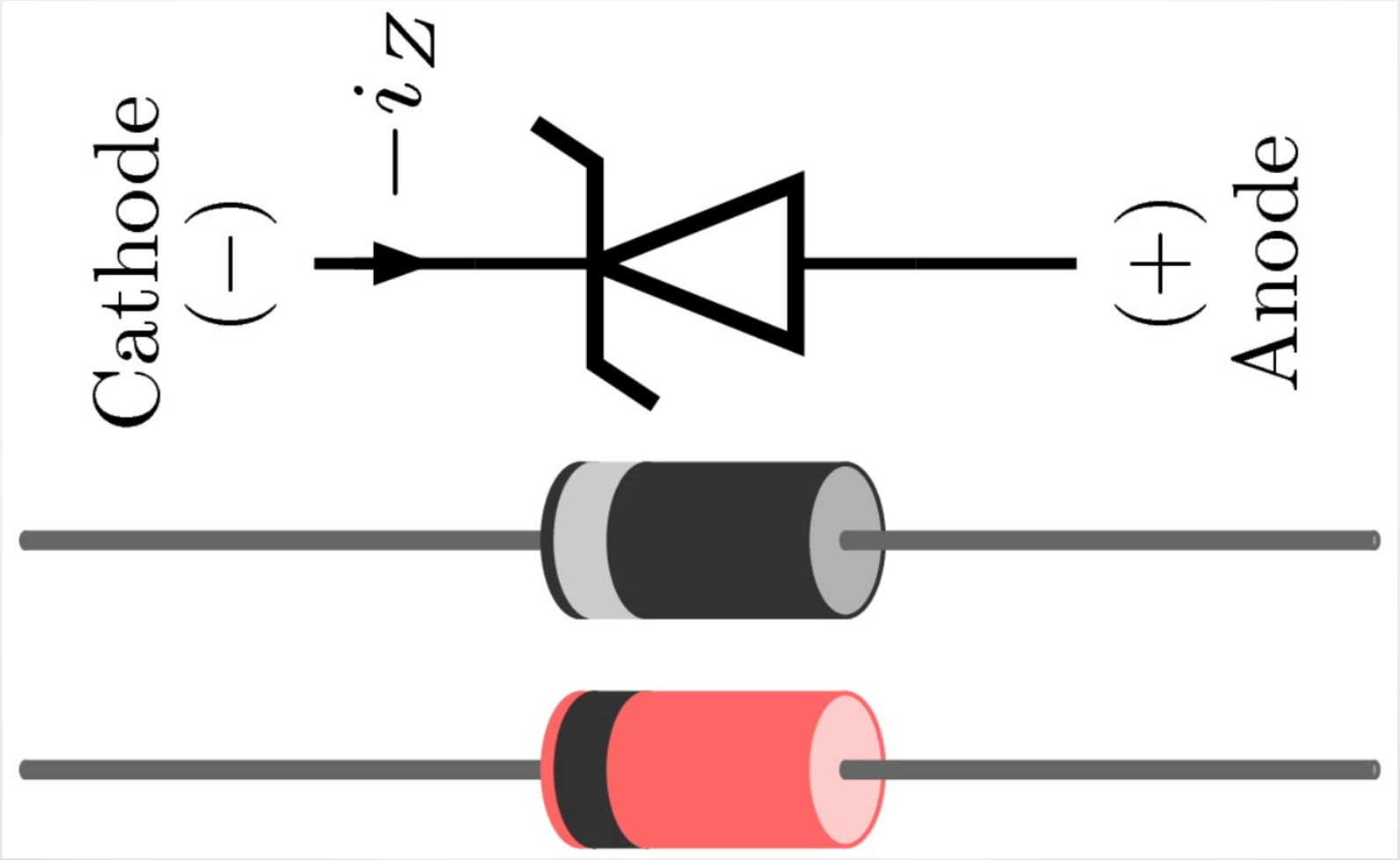
Polarização Direta

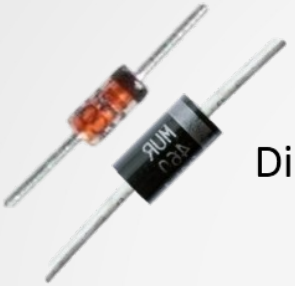


Polarização Inversa



Diodo





Diodos de silício de uso geral

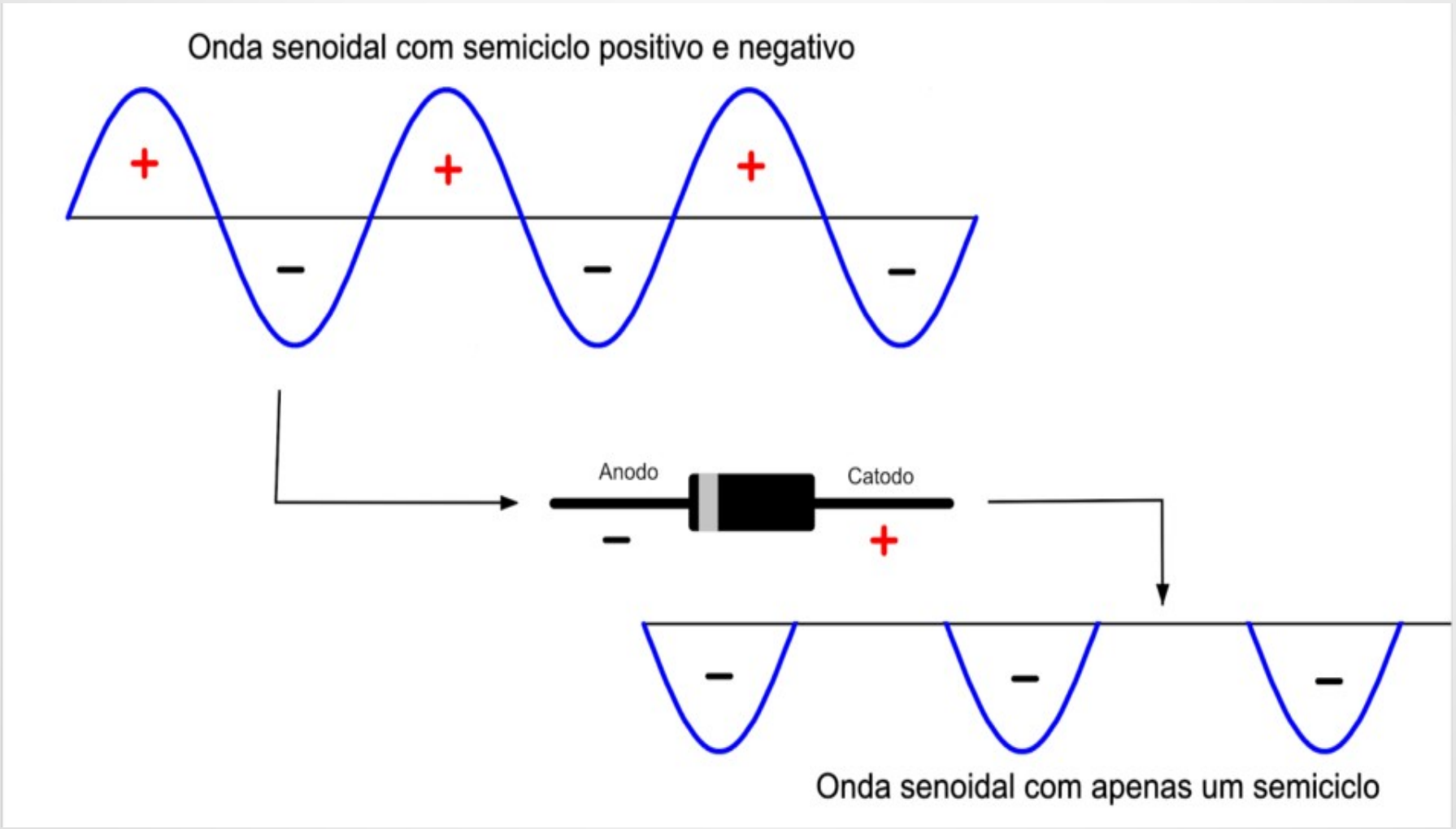
Diodo varicap

Diodos SMD

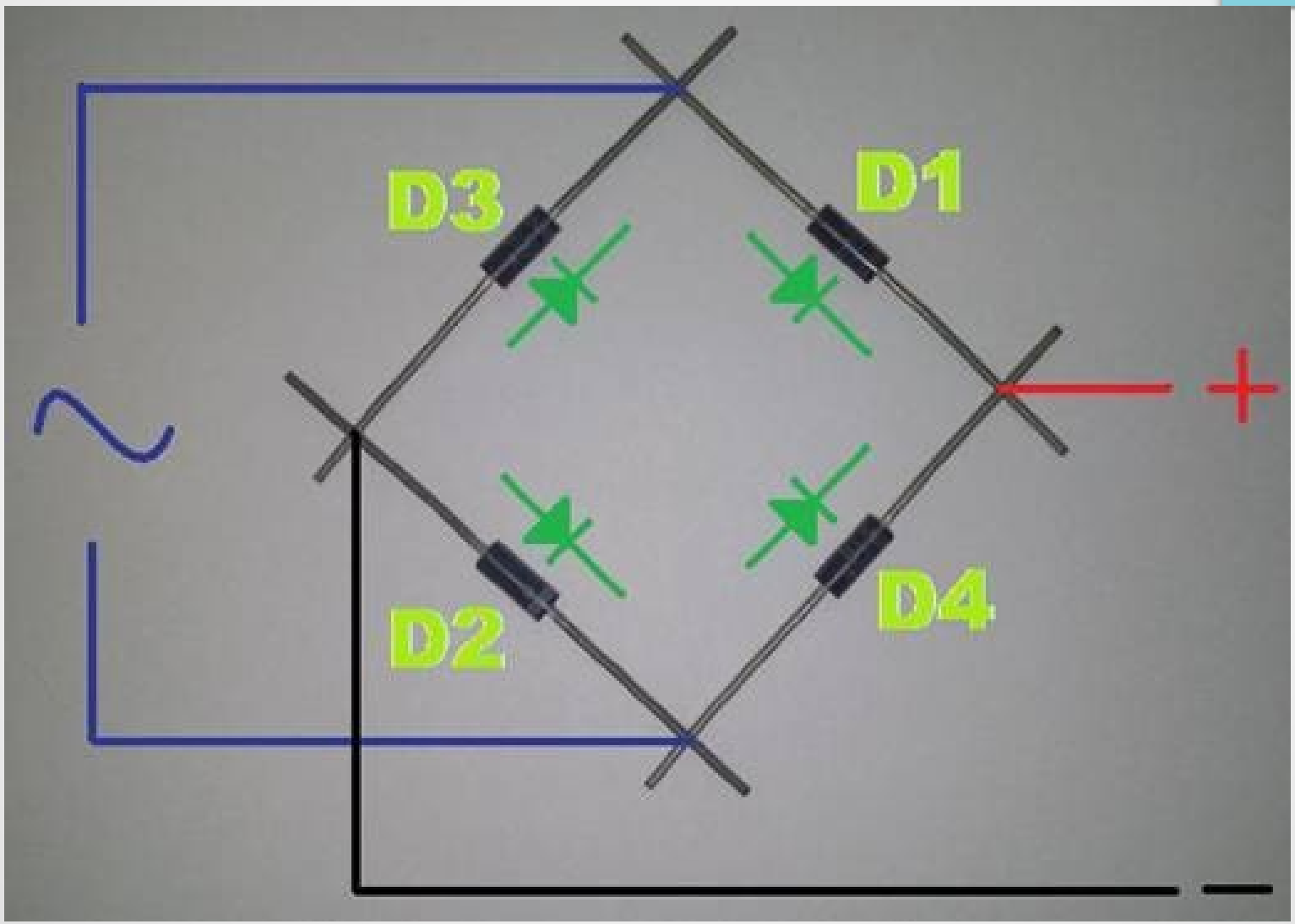
Diodo de germânio

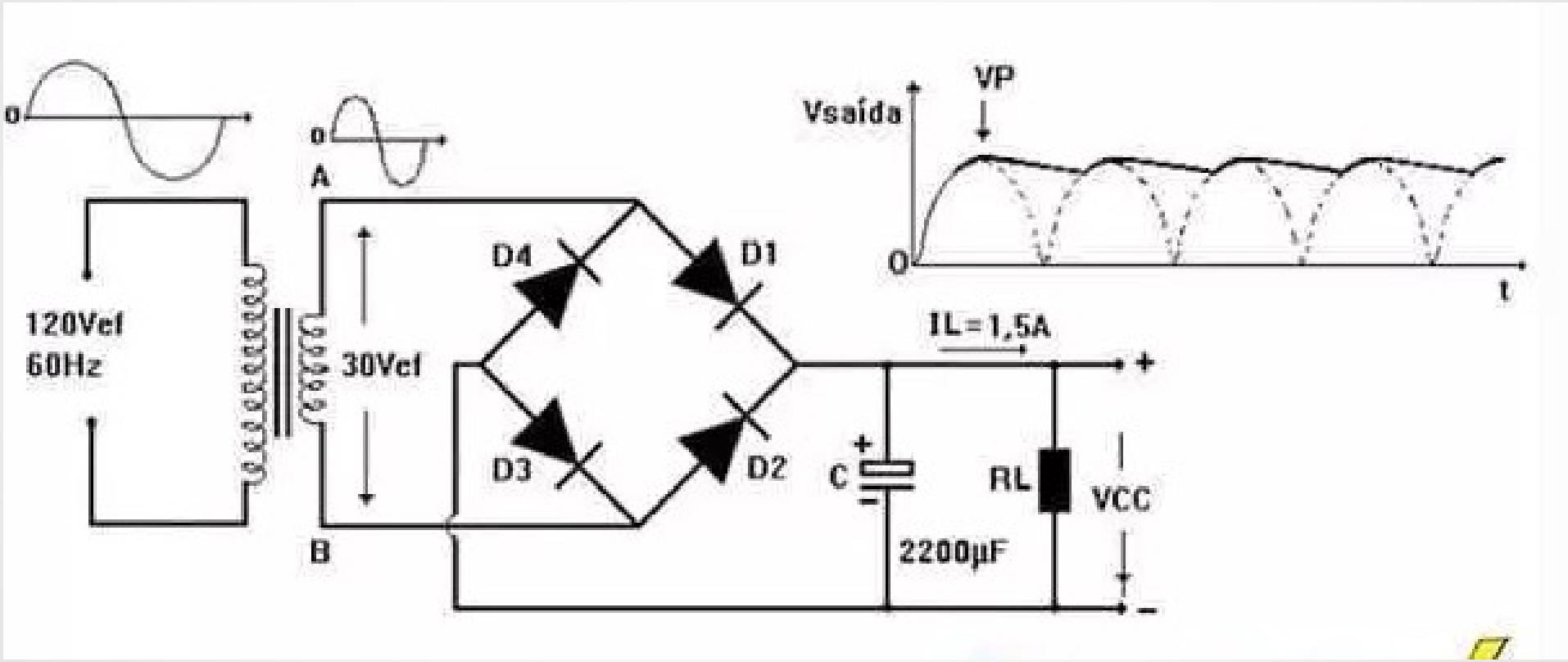
Diodos de potência
Industriais e automotivo

Diodo Emissor de Luz - LED


Onda senoidal com semiciclo positivo e negativo
+
+
+
−
−
−
Anodo
Catodo
−
+
−
−
−
Onda senoidal com apenas um semiciclo

Ponte retificadora AC/DC

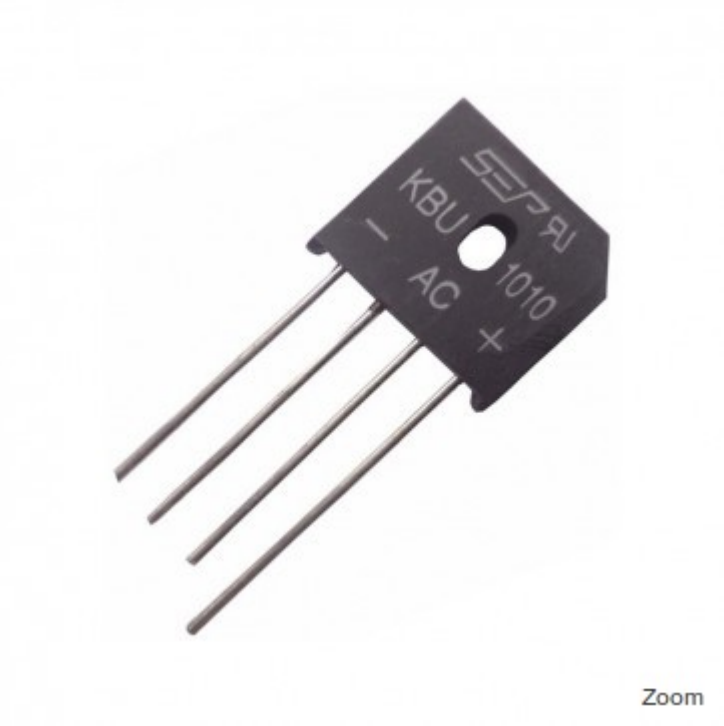




https://www.sabereletrica.com.br/diodo-retificador-como-funciona-tipos-de-diodo/

http://www.baudaeletronica.com.br

Ponte Retificadora KBU1010



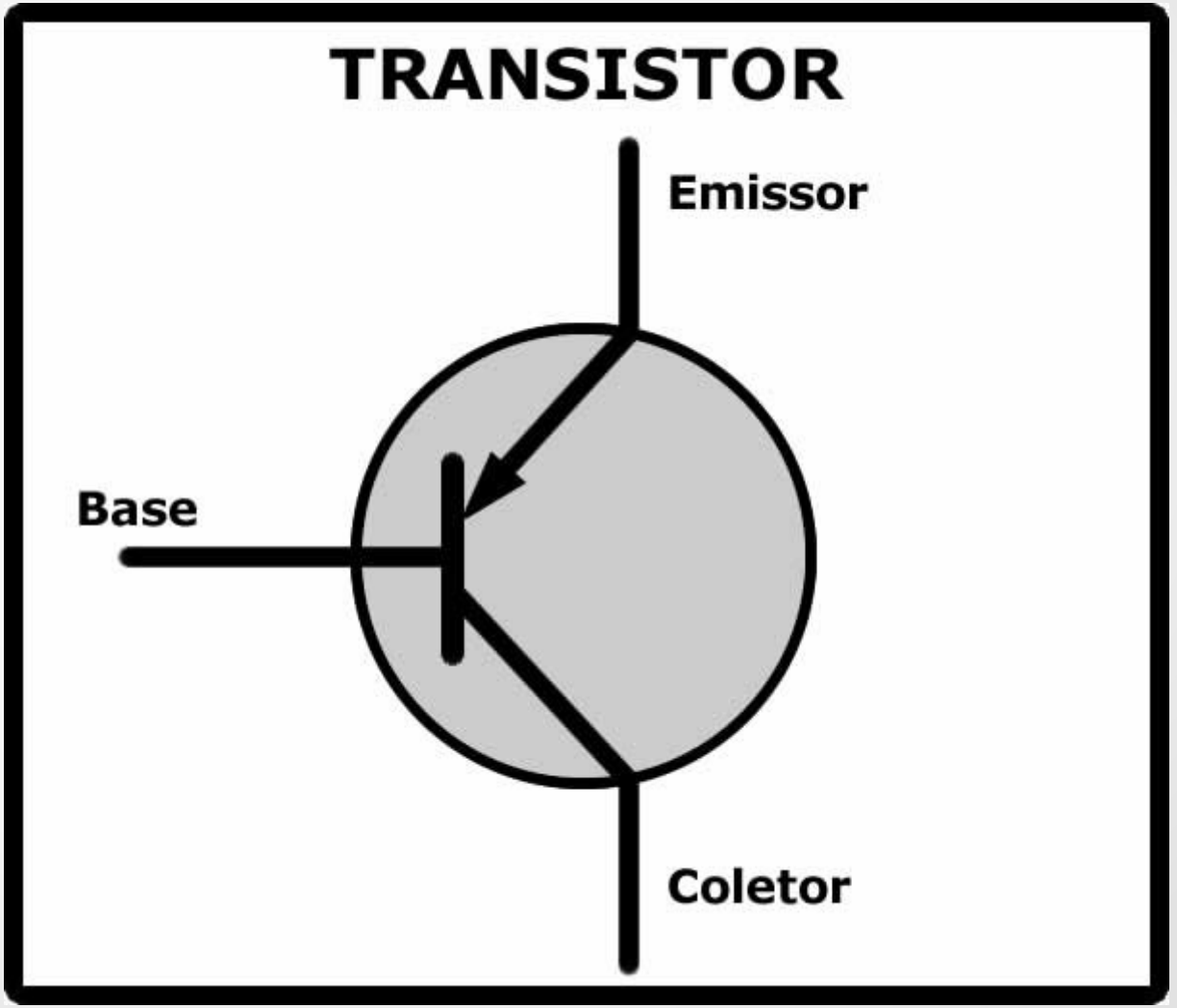
Ponte retificadora 25A - KBPC2510

https://www.serflex.com.br

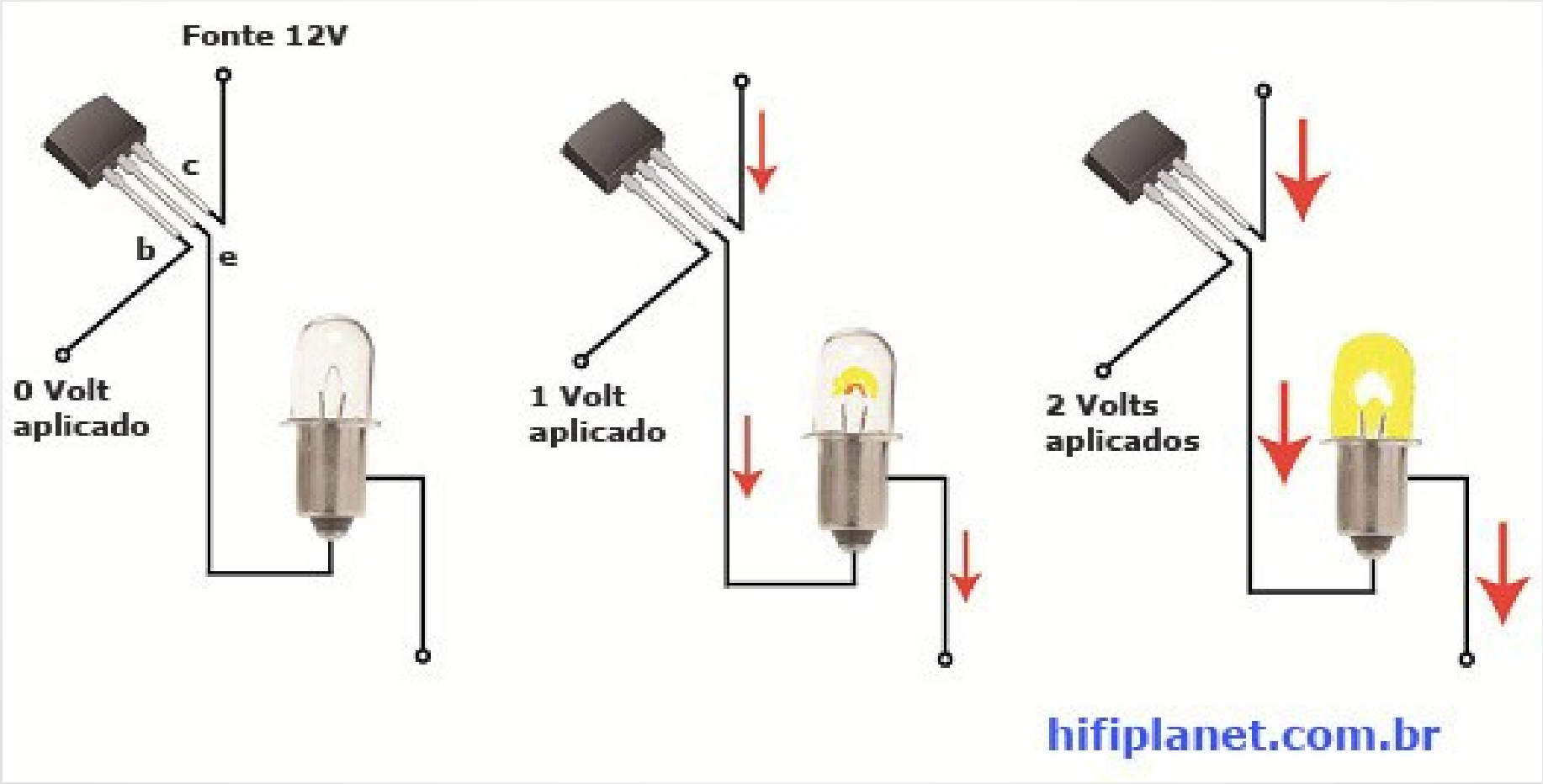
PONTE RETIFICADORA ENTRADA LHN 220 I - ESAB - 0728036

R$ 720,10

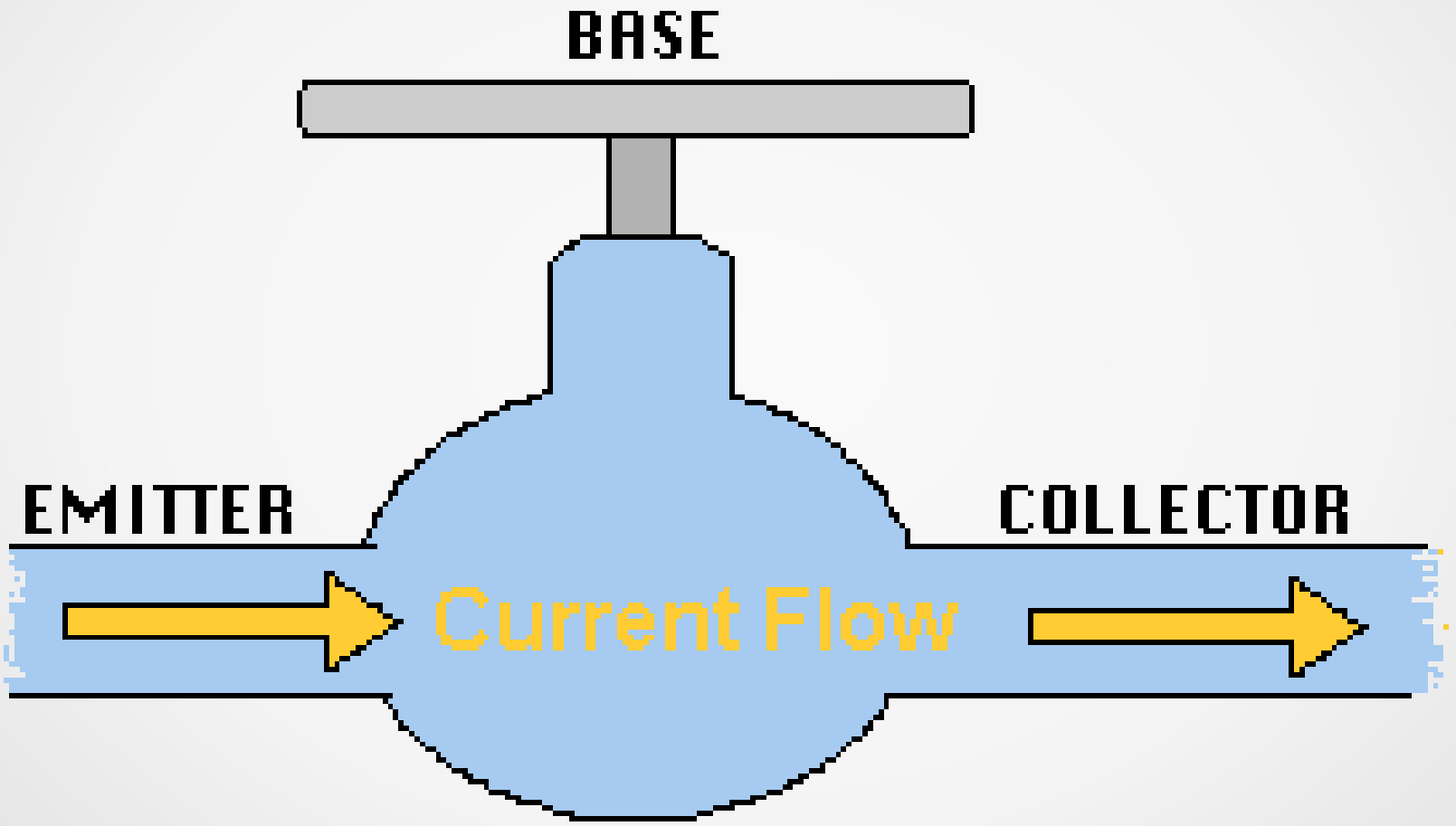
Trasistores

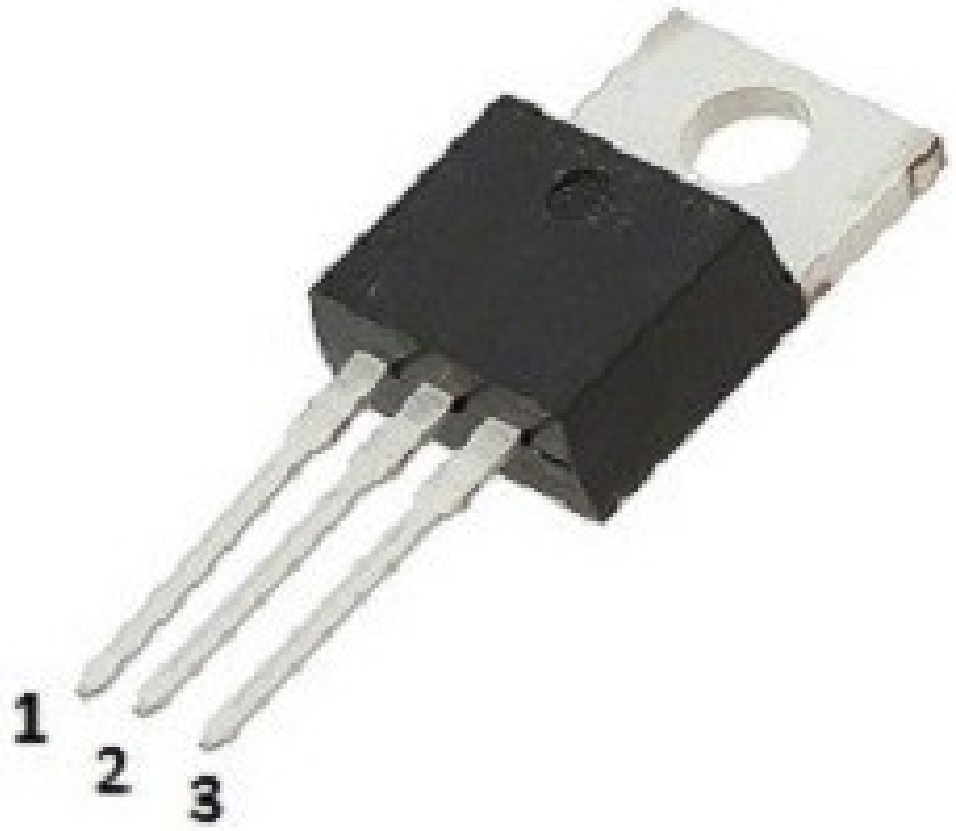


- O transistor é um componente de circuito elétrico, cujo nome vem do termo transfer resistor, ou seja, resistor de transferência, que se tornou popular nos anos de 1950, sendo ele o grande responsável pela revolução da eletrônica. Uma de suas principais funções é a de aumentar e chavear os sinais elétricos.



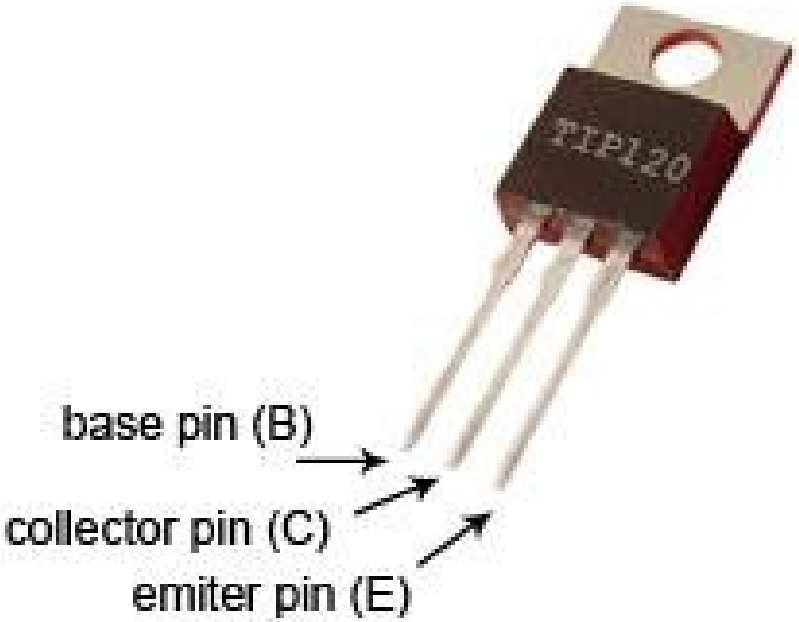
http://hifiplanet.com.br/blog/um-amplificador-pode-salvar-gravacoes-ruins/

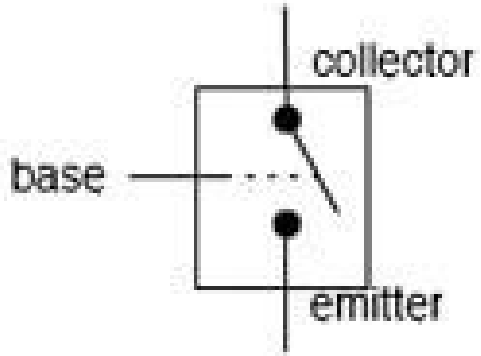

BASE
EMITTER
COLLECTOR
Current Flow



TIP120 pinout

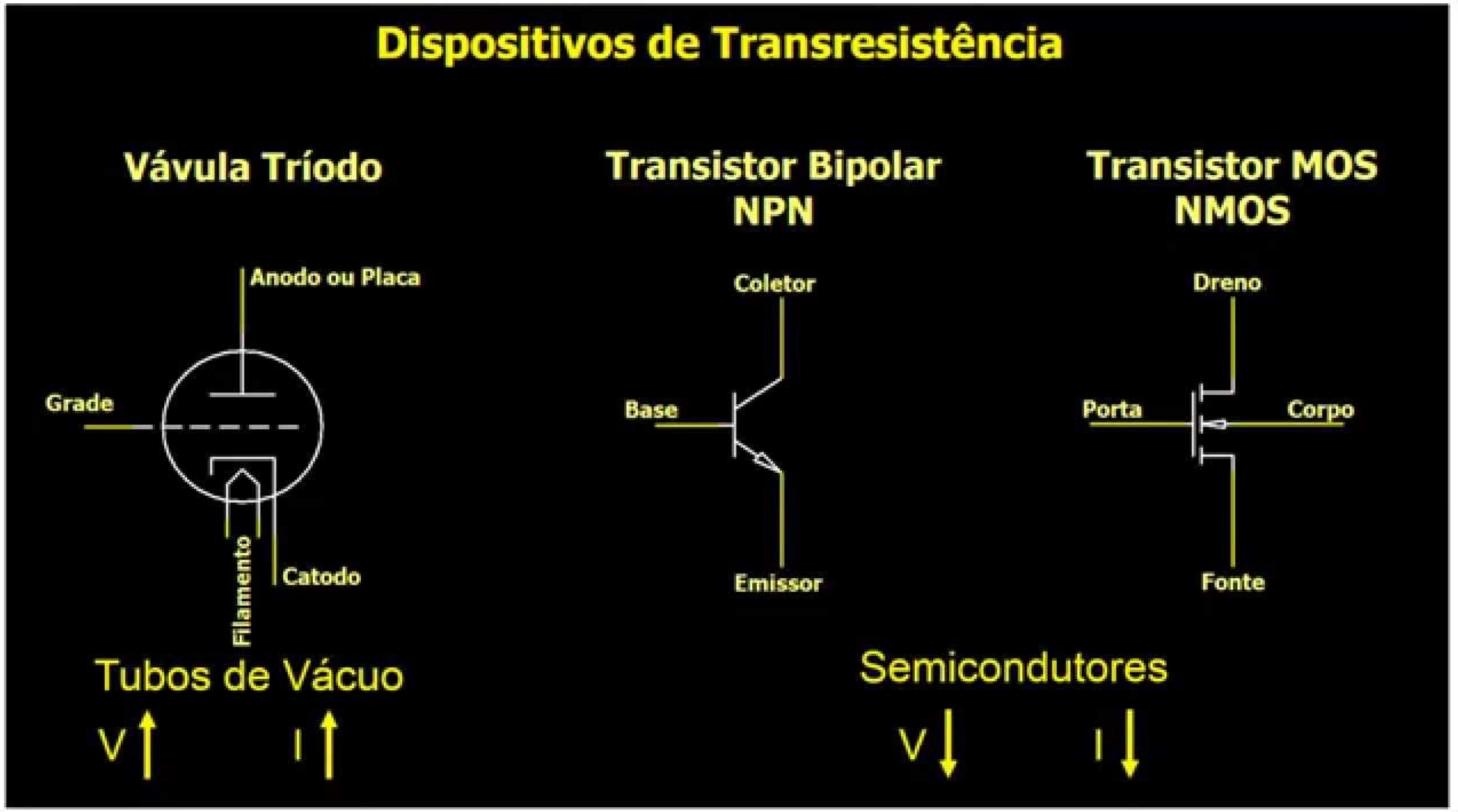
1. Base
2. Coletor
3. Emissor

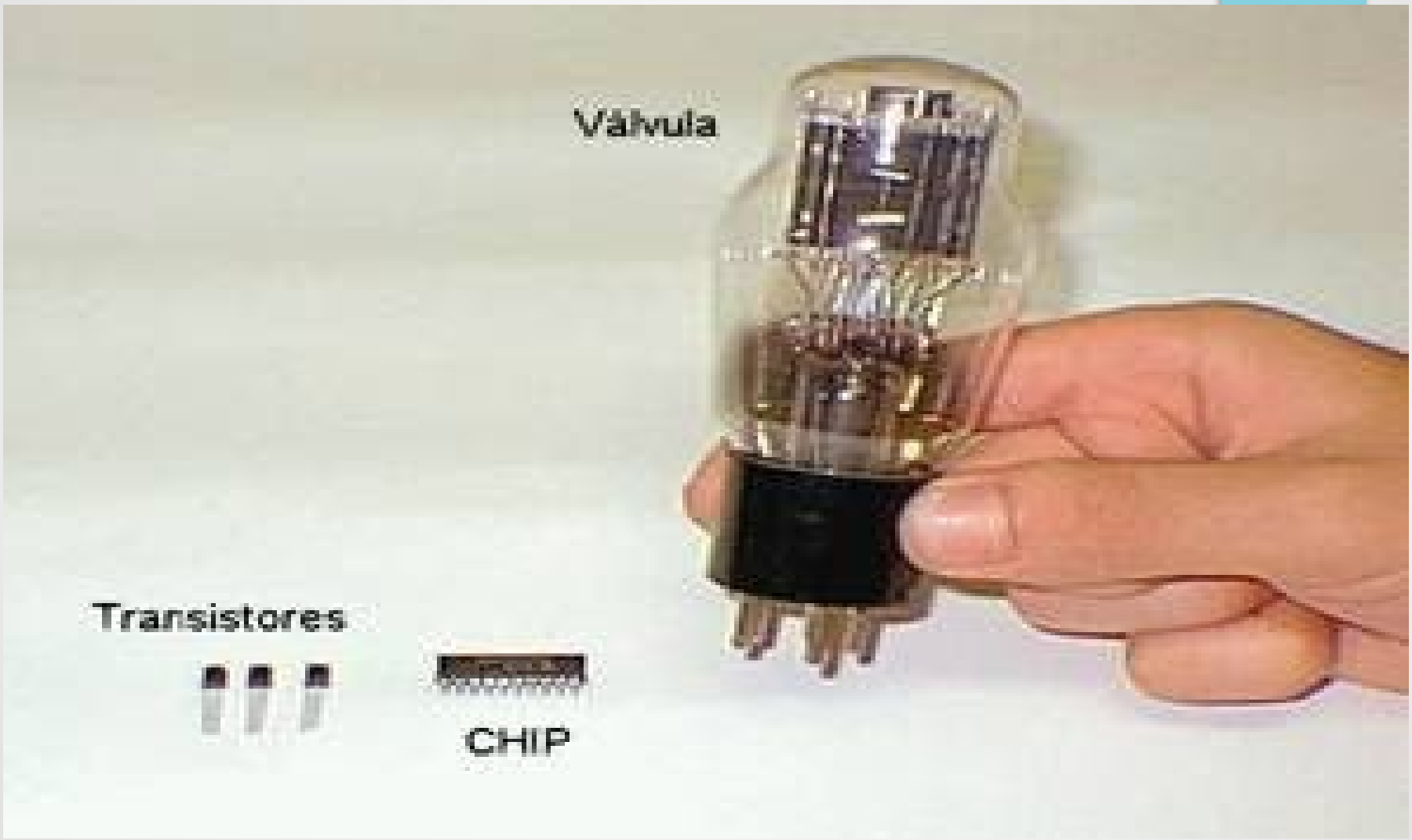




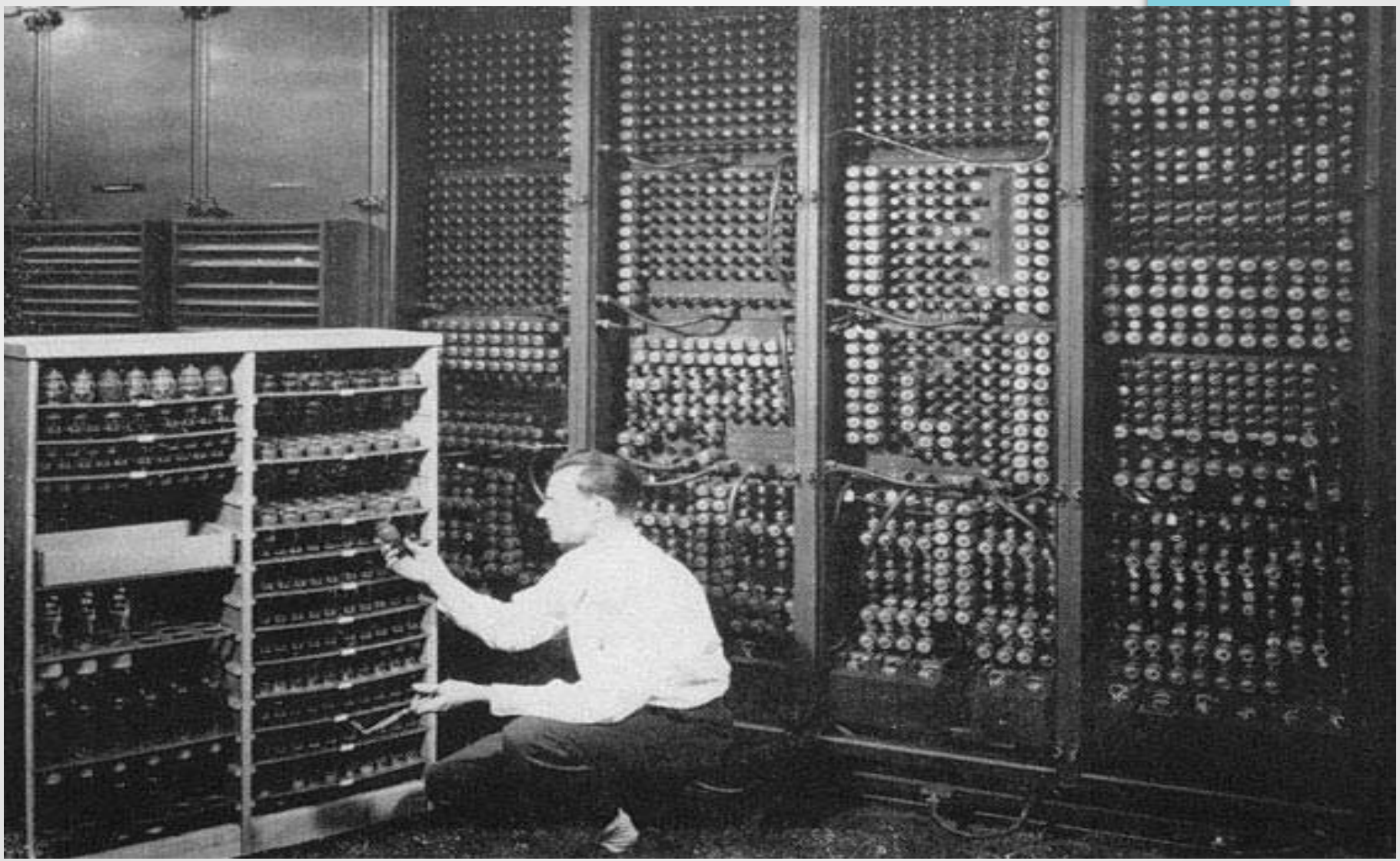
It works like a switch

https://www.youtube.com/watch?v=XLdSp_Y_YD8

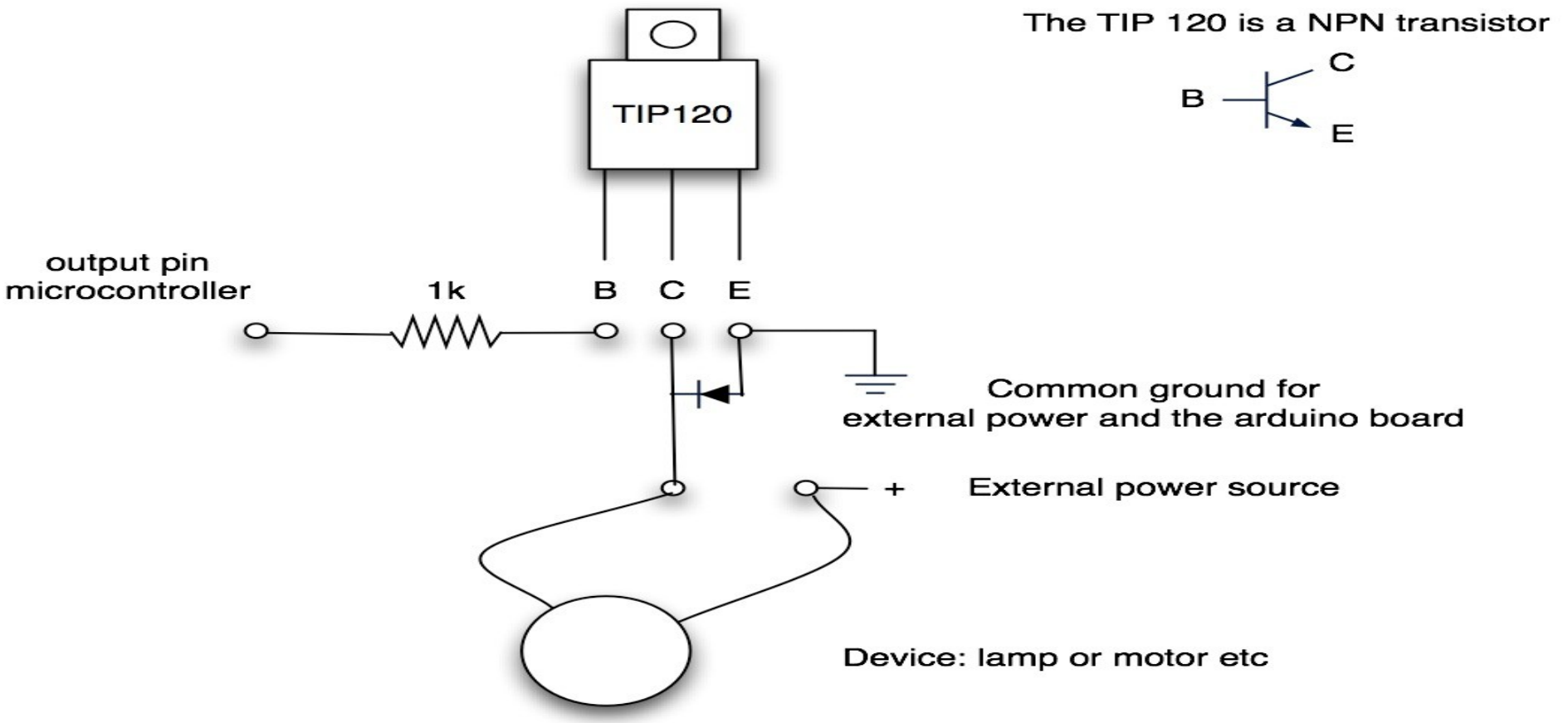




http://trabalhofisicavet.blogspot.com/2012/09/as-principais-diferencas-entre-valvulas.html



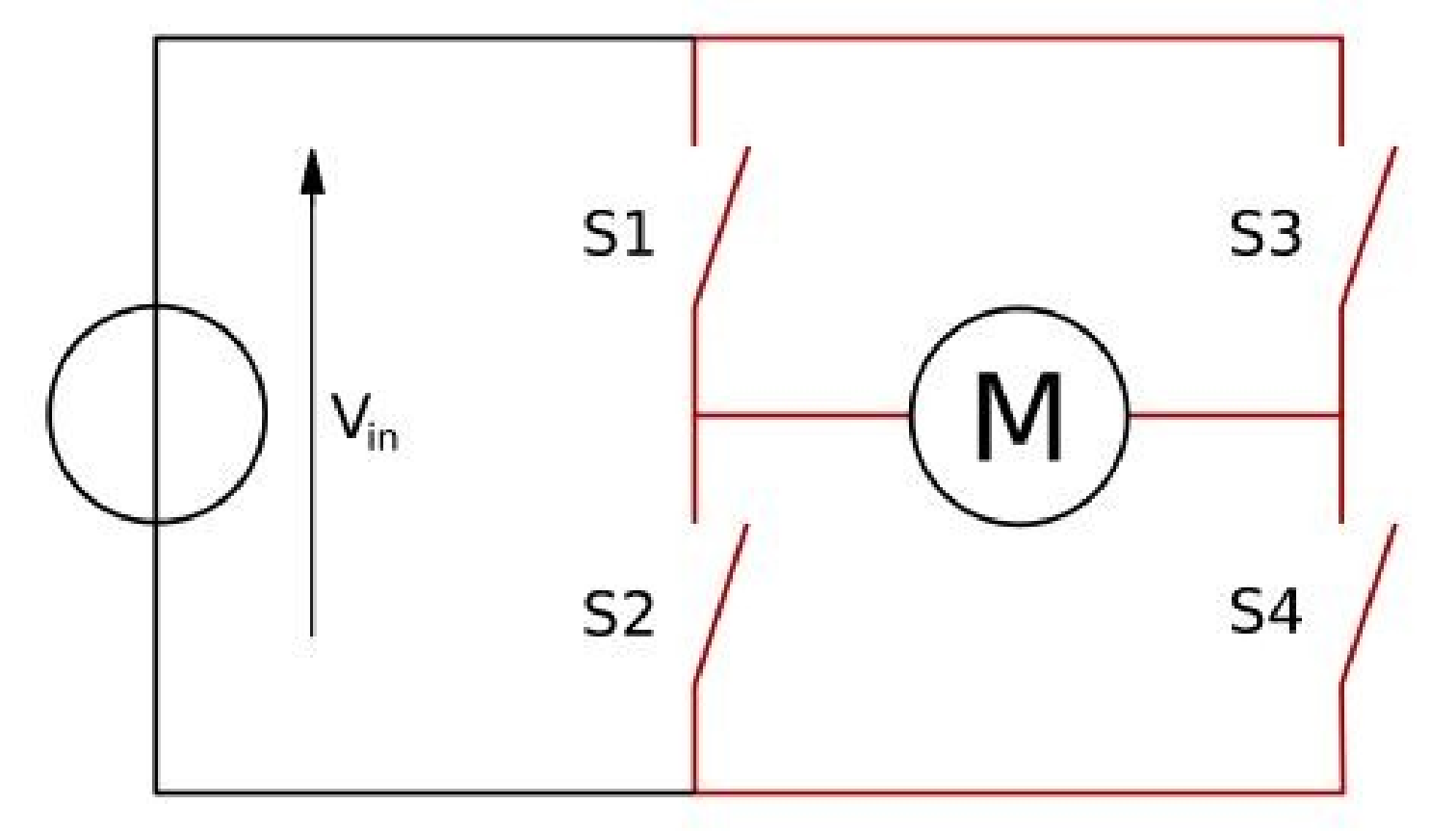
https://ctheds.wordpress.com/2007/10/30/tip-120/



Base to microcontroller
Emitter to ground
Collector to device

Diode from E to C when connected to inductive load like a DC motor

Ponte H



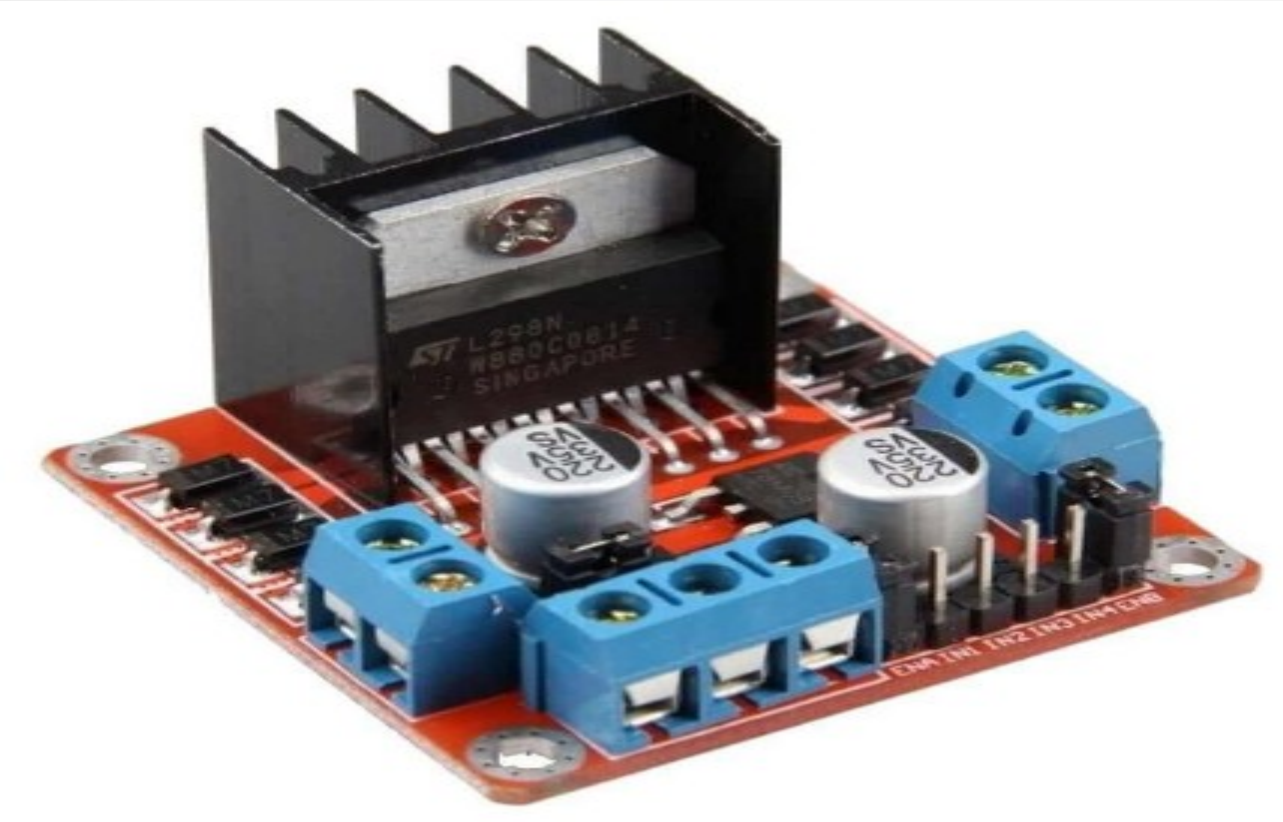
http://www.bosontreinamentos.com.br/eletronica/curso-de-eletronica/como-funciona-uma-ponte-h-controle-direcional-de-motores-dc/

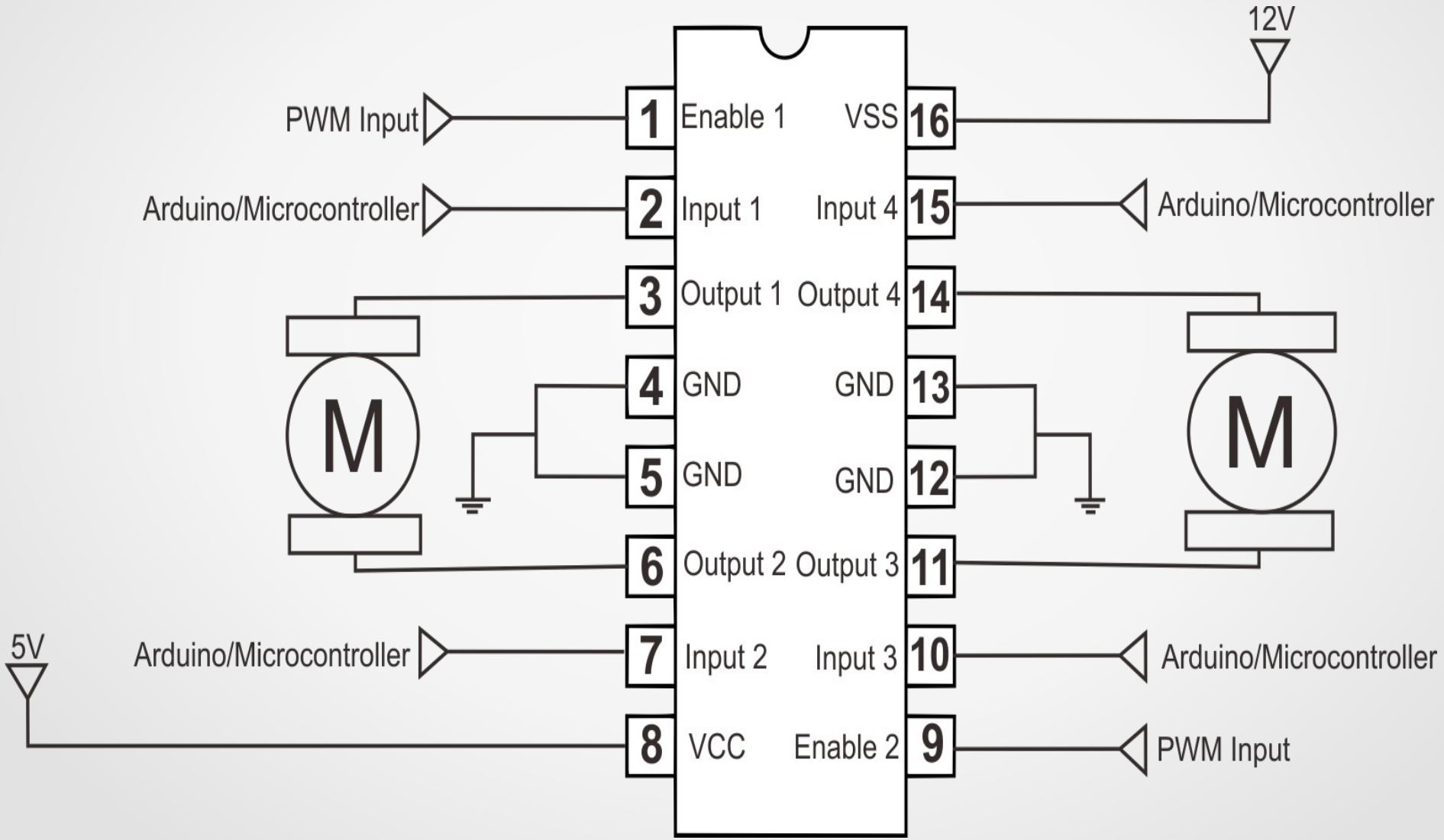
Ponte H

- S1 e S4 fechadas, S2 e S3 abertas: A corrente passa pelo motor em um sentido, fazendo-o girar em uma direção.
- S1 e S4 abertas, S2 e S3 fechadas: A corrente passa pelo motor no sentido inverso, fazendo-o girar na direção contrária.
- S1 e S3 abertas: O motor não gira, pois não há fluxo de corrente por ele

- Motor Shield L293D - Driver Ponte H para Arduino

Módulo Driver Ponte H - L298N




12V
PWM Input
1
Enable 1
VSS
16
Arduino/Microcontroller
2
Input 1
Input 4
15
Arduino/Microcontroller
3
Output 1
Output 4
14
M
4
GND
GND
13
M
5
GND
GND
12
6
Output 2
Output 3
11
5V
Arduino/Microcontroller
7
Input 2
Input 3
10
Arduino/Microcontroller
8
VCC
Enable 2
9
PWM Input