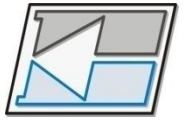
Eletrônica



Nascimento da Eletrônica

1906 – Válvula Eletrônica

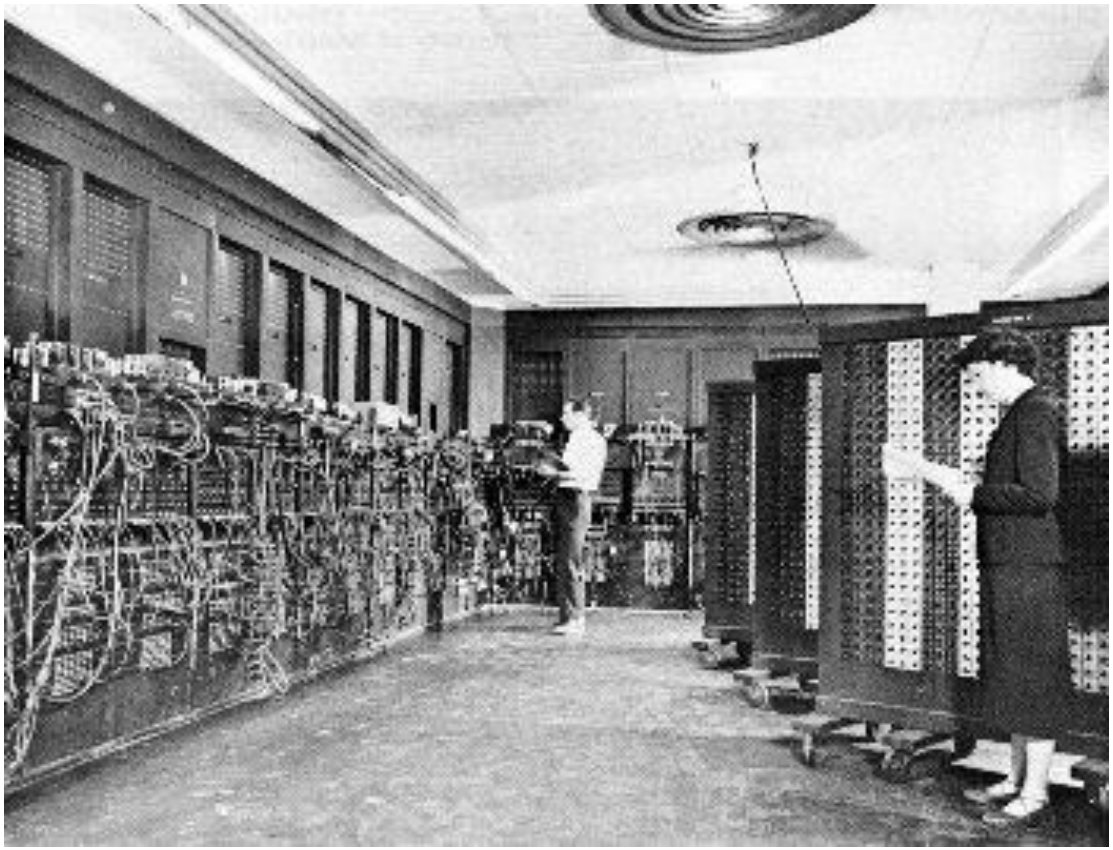
Engenheiro Lee De Forest (Estados Unidos)

Primeira aplicação da válvula: Aparelho de Rádio.

- 1910, inventou o primeiro sistema de som;

- 1923 desenvolveu a sonorização dos filmes.

1946 - ENIAC – Primeiro Computador (77 anos)



-**5 mil operações** por segundo (velocidade mil vezes superior à de seus antecessores);

- **18mil** válvulas.

- pesava **30 toneladas**;

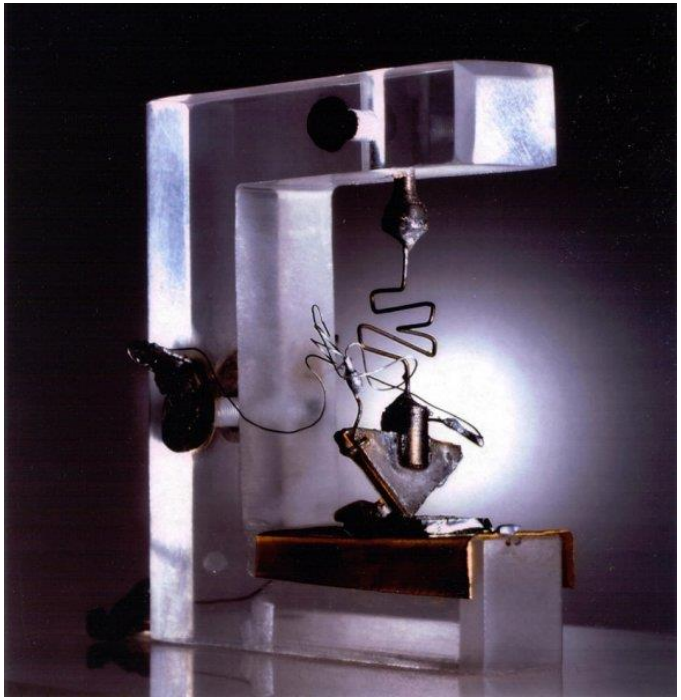
- ocupava **180 m²** de área construída.

Primeiro computador digital eletrônico de grande escala: o **ENIAC** (Electrical Numerical Integrator and Calculator).
O computador foi criado em fevereiro de 1946 por cientistas norte-americanos.
(Segunda Guerra Mundial)

1947- Primeiro Transistor

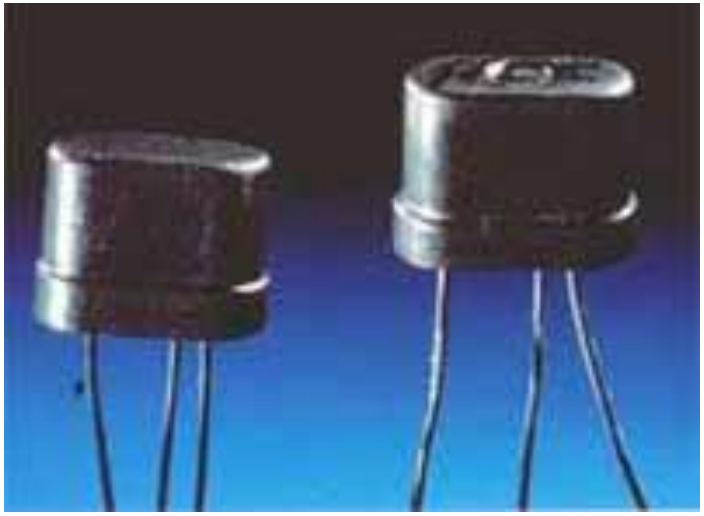
(transistor contato de ponta)

(Prêmio Nobel).



Criado por John Bardeen e Walter Brattain, sob a supervisão de William Shockley em 1947 (Bell Lab).

Primeiro Transistor Comercial



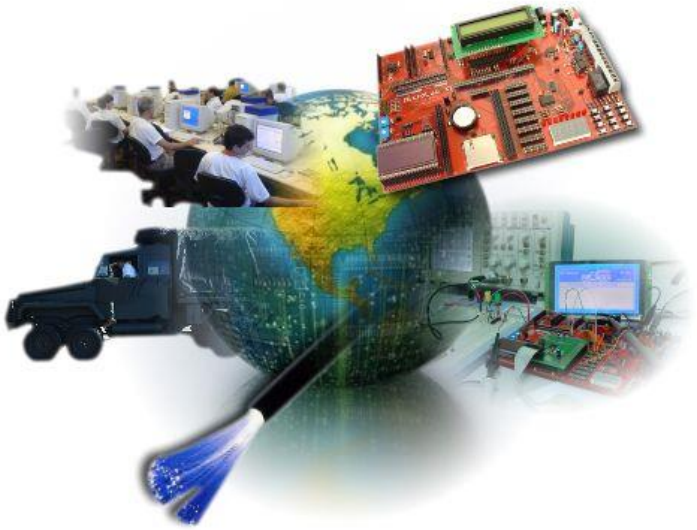
Primeiro transistor comercial produzido.

Desenvolvido pela Texas Instruments em **1950**.

Transistor

Transistores são componentes largamente utilizados em diversas aplicações da eletrônica, estando presente em quase todo o equipamento eletrônico.

- Circuitos de controle, automação industrial;
- Conversores estáticos: AC-CC; CC-CC e CC-CA;
- Industria automotiva equipamentos médicos.
- Amplificadores de potência;
- Circuitos de tratamento de sinais e Telecom;
- Circuitos integrados digitais e analógicos.

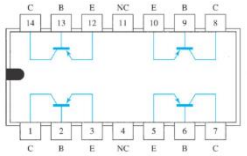


Transistor

O transistor pode ser encontrado como **elemento discreto**, como um único elemento na pastilha semicondutora.

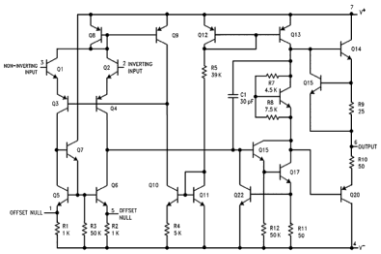
Pode ser encontrado como um arranjo de **dezenas transistores integrados** em um circuito (CI).

Q2T2905

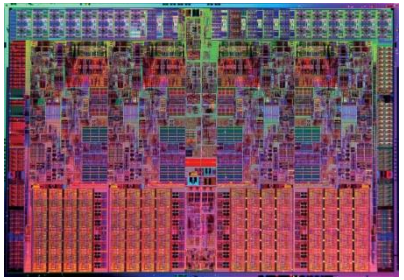


Pode ser encontrado dentro de circuitos **digitais ou analógicos dedicados** a **funções específicas** (AmpOp, Oscilador 555, pontas lógicas).

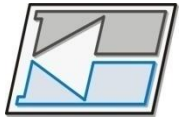
741



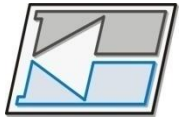
Um **microprocessador** de um computador possui **milhares de transistores** integrados em um CI.



Produtos Eletrônicos



O que é um produto eletrônico?



Produtos Eletrônicos:


Avião ultrassônico Concord







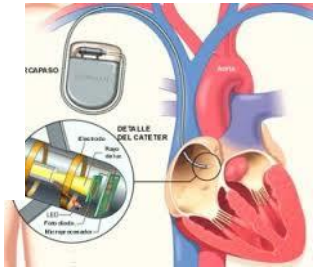
BRASTEMP
Blend




Consul

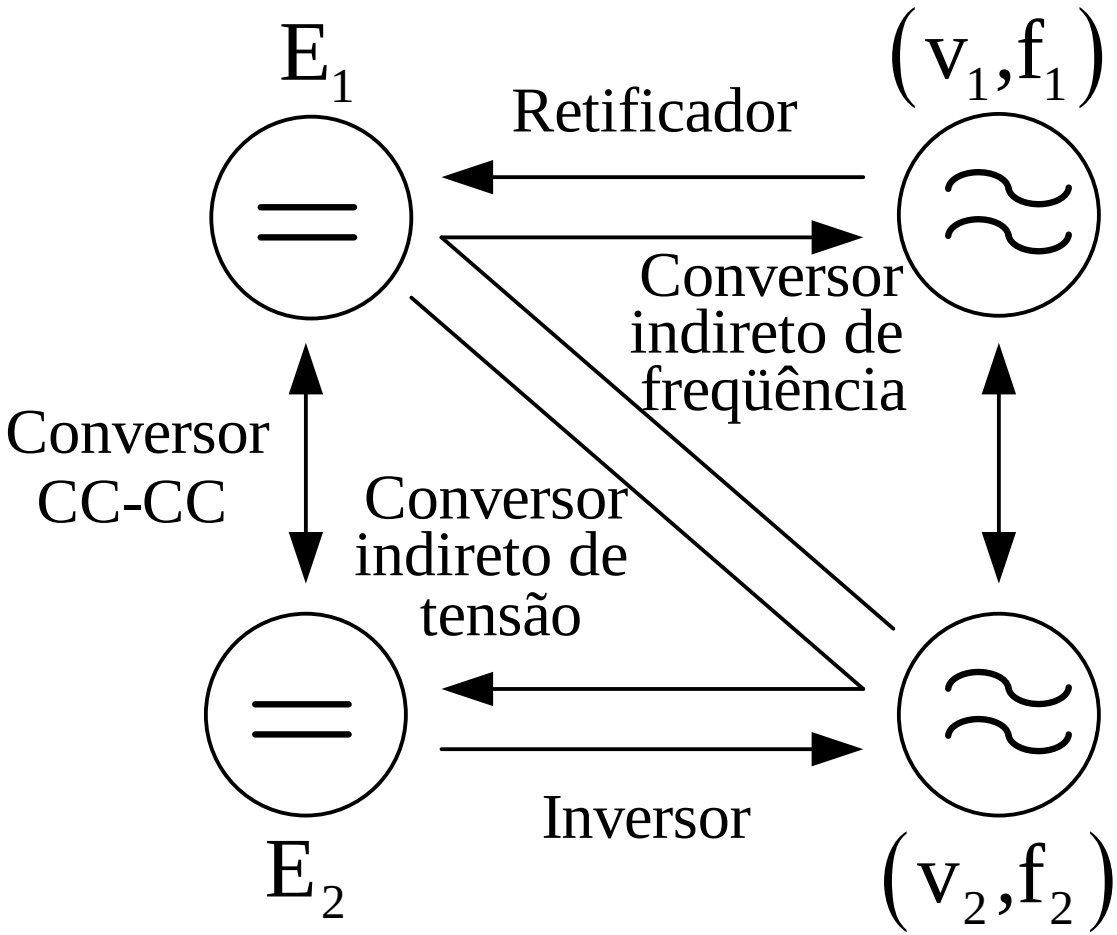

TESLA




DETALLE
DEL CATETER

Projeto Fonte Linear de Tensão

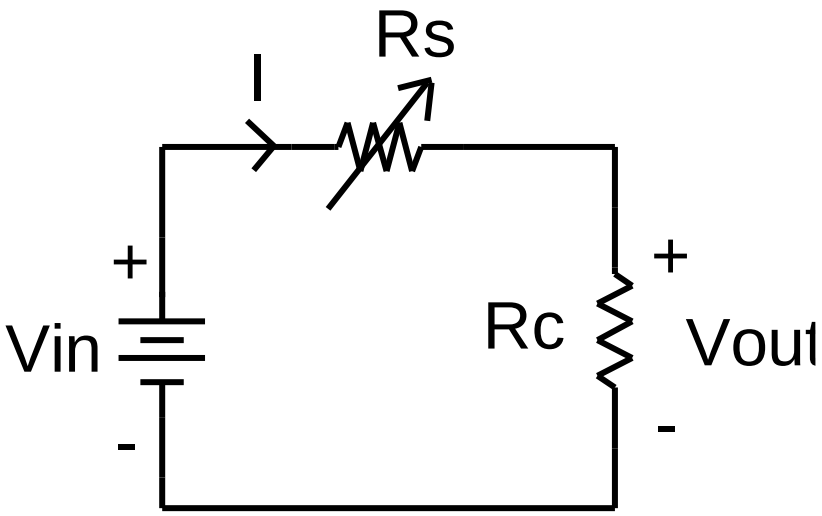
Conversores de Energia

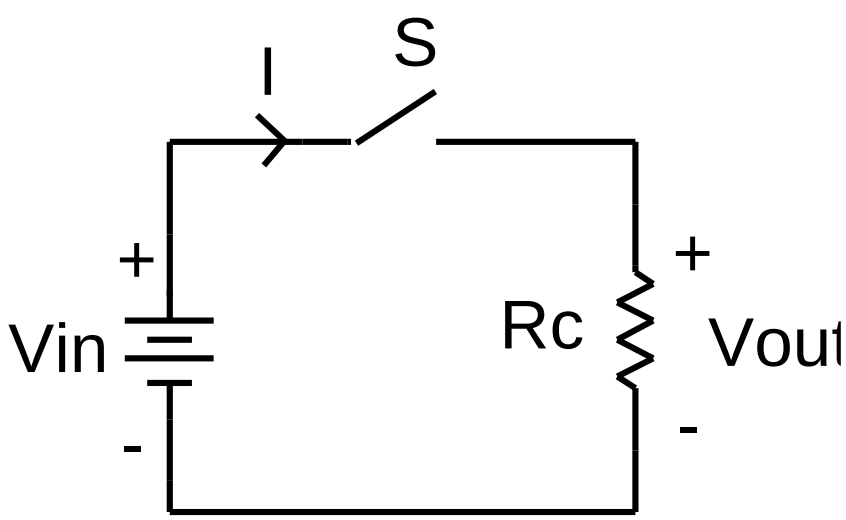


Fonte Linear x Fonte Chaveada

Fontes de tensão lineares e chaveadas:

- As fontes lineares convertem a tensão alternada da rede em tensões contínuas, normalmente de baixa amplitude, sem o uso de componentes chaveados (comutados);
- Fontes chaveadas exercem a mesma função, mas utilizando componentes comutados (chaveados).





Fonte Linear x Fonte Chaveada

Fontes de tensão lineares x chaveadas:

- Fontes lineares: são mais robustas, simples e fáceis de projetar, podem ser mais baratas ou não, são muito volumosas e pesadas.
- Fontes chaveadas: não são tão robustas, mais difíceis de projetar e **consertar**, em geral são mais baratas, são pequenas e leves.

Fonte chaveada de 65 W

Fonte linear de 29 W

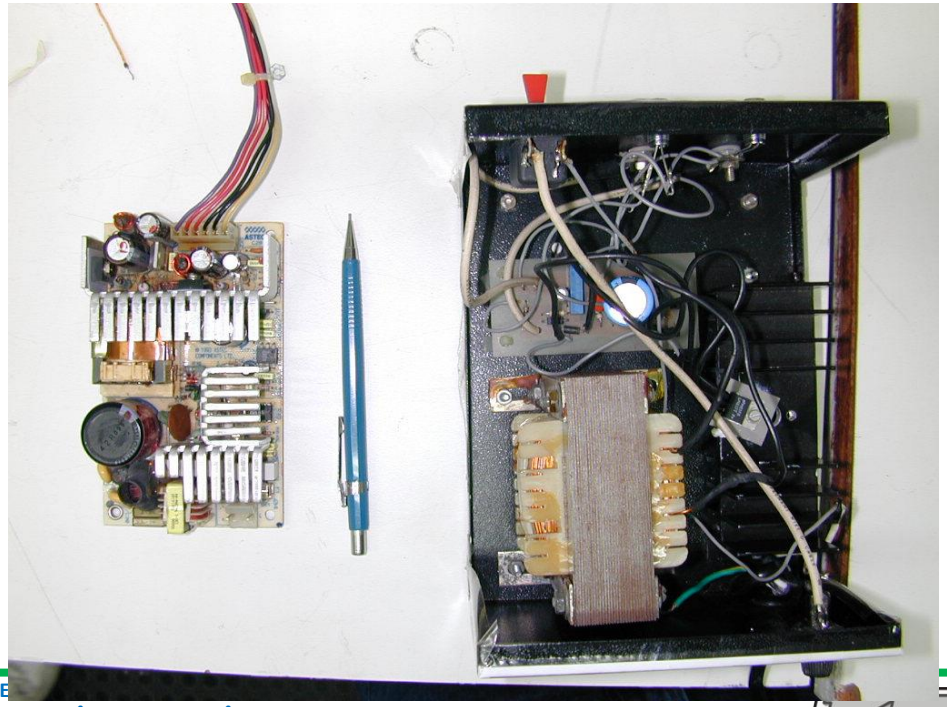
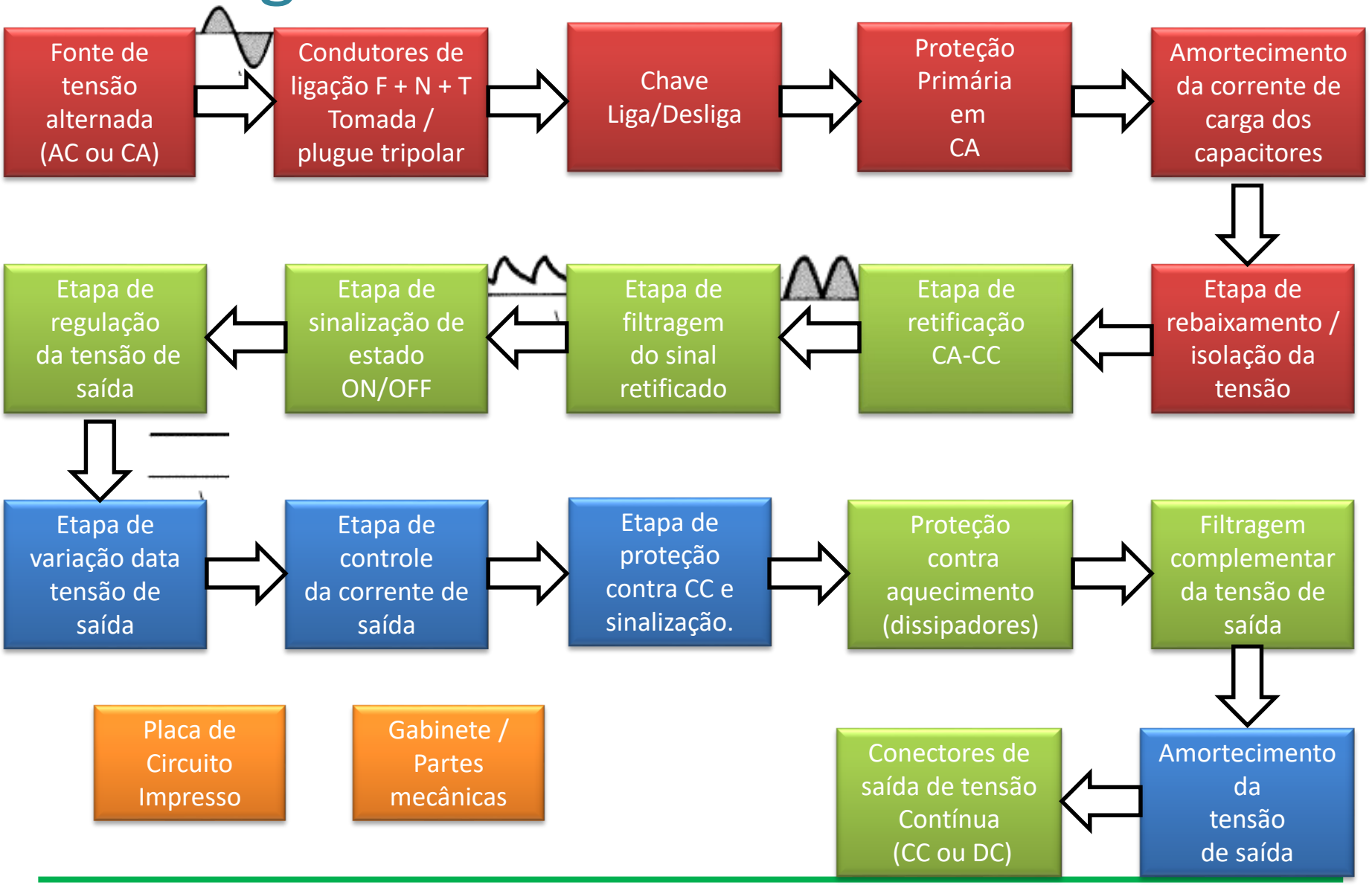
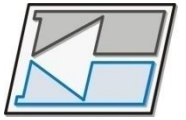


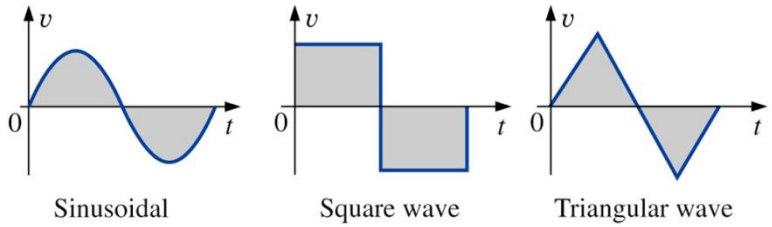
Diagrama em Blocos Fonte Linear

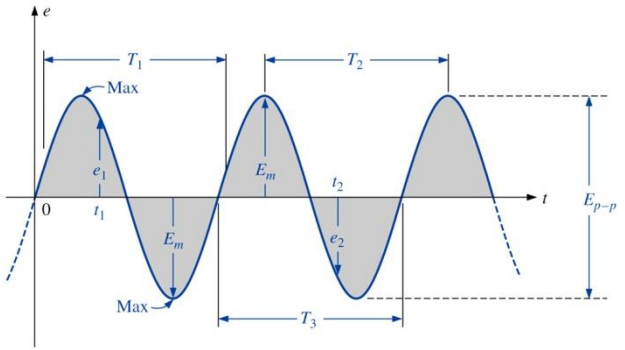


BKP

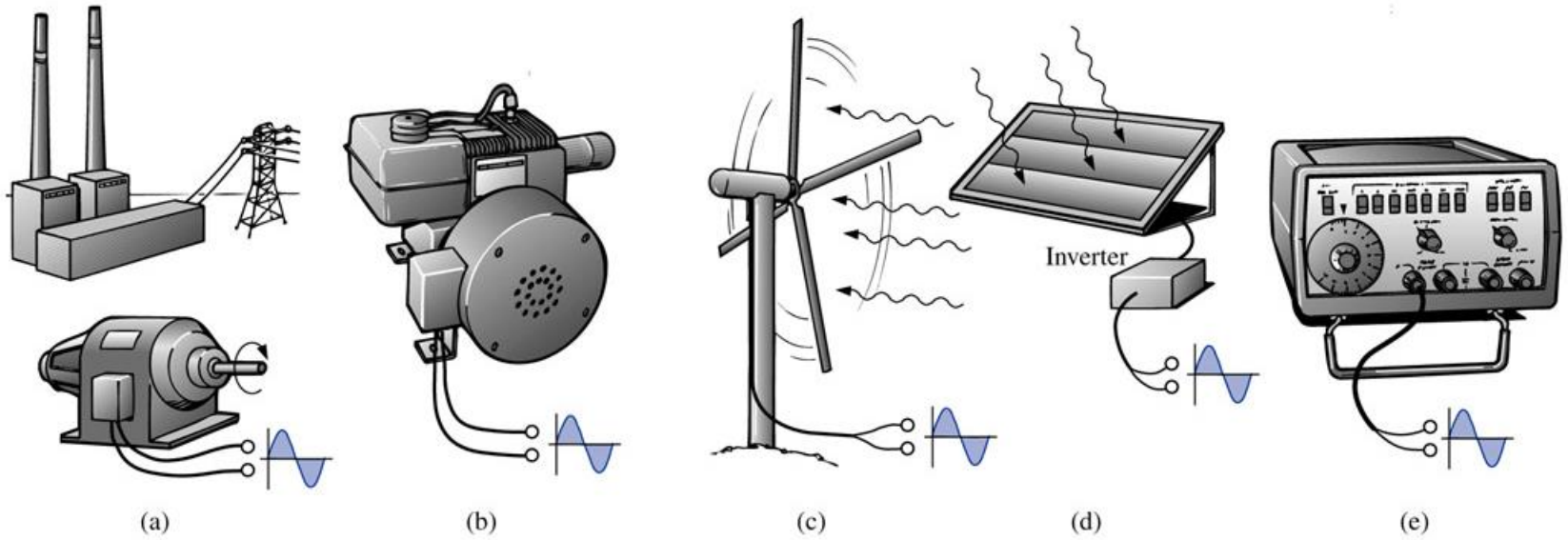


Tensão Alternada

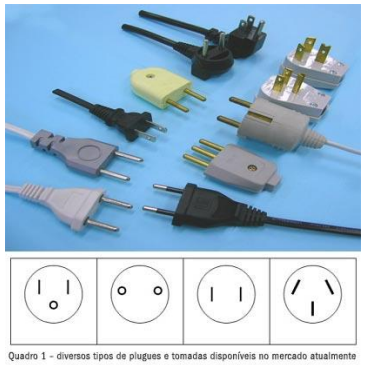




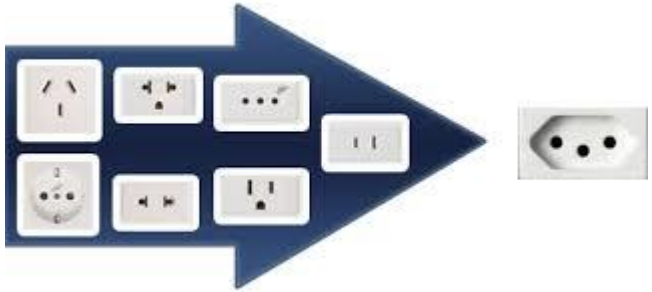
Fontes de corrente alternada:

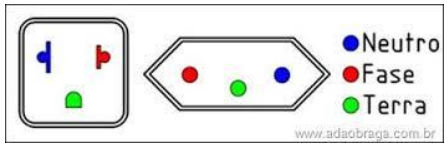


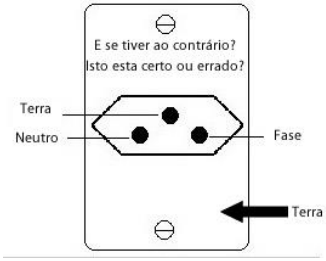
Tomadas / Plugues

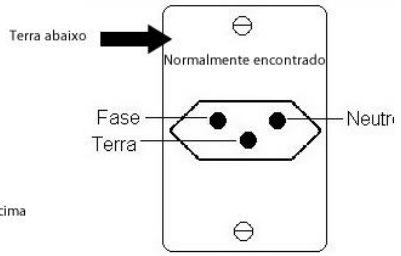


Quadro 1 - diversos tipos de plugues e tomadas disponíveis no mercado atualmente









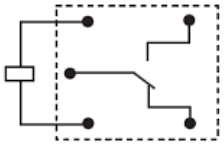
Proteção

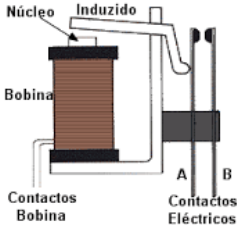
Fusíveis:

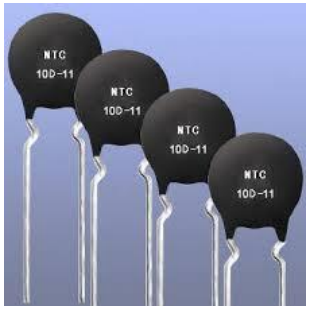
Varistores:

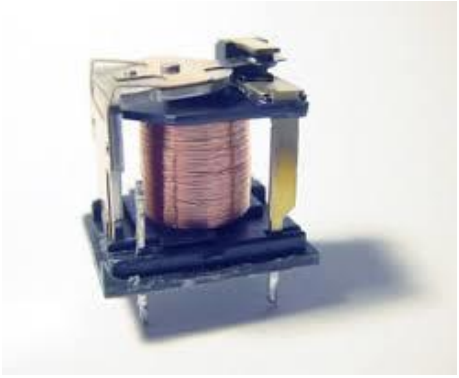
Interruptores (chaves)

Reles / NTC / Resistor/ Sensores

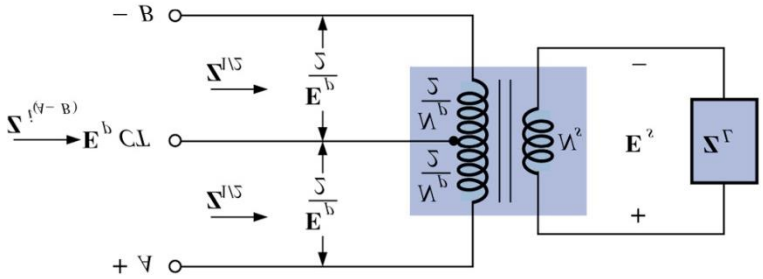


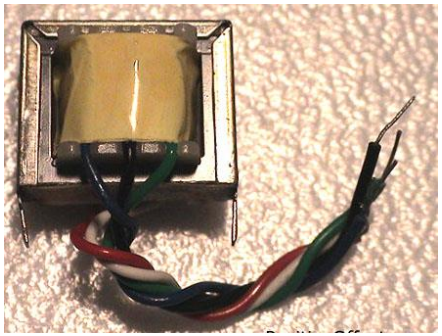


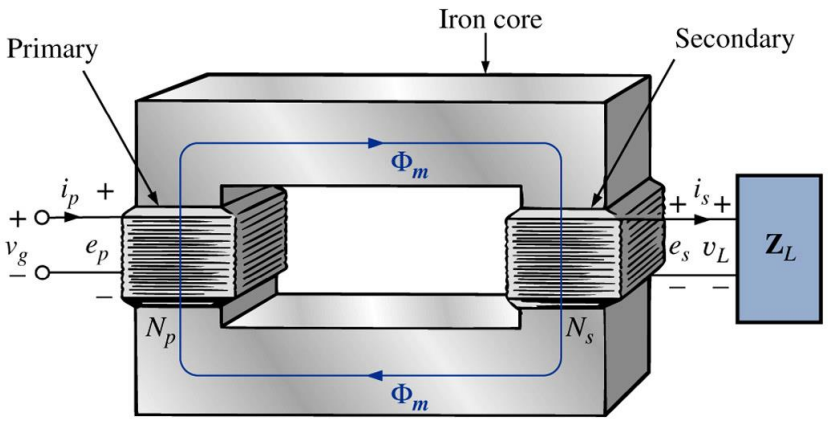


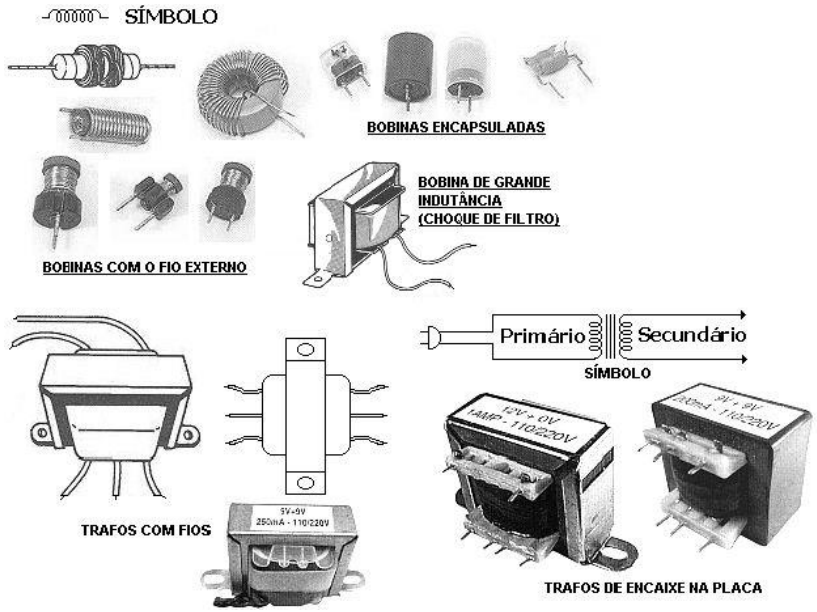


Transformadores

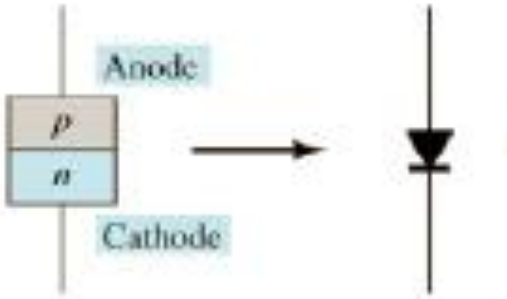


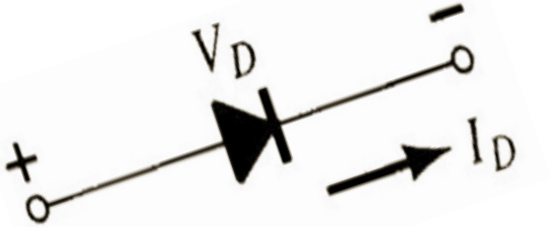


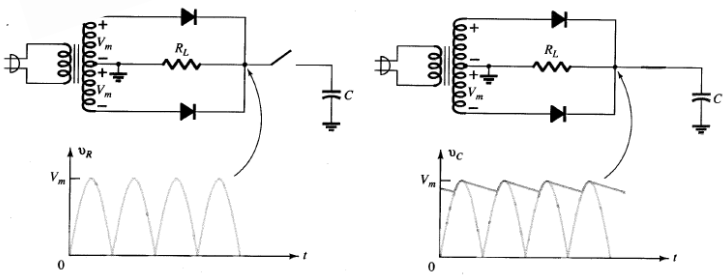


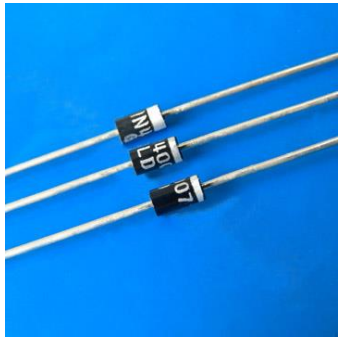


Diodos

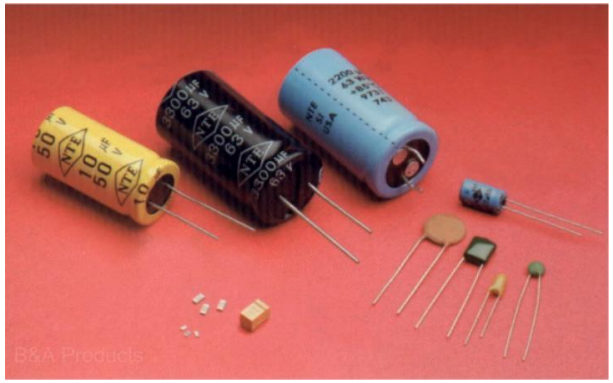


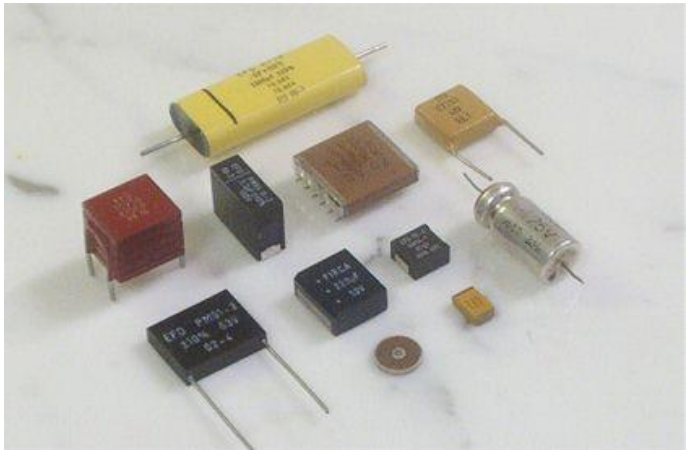




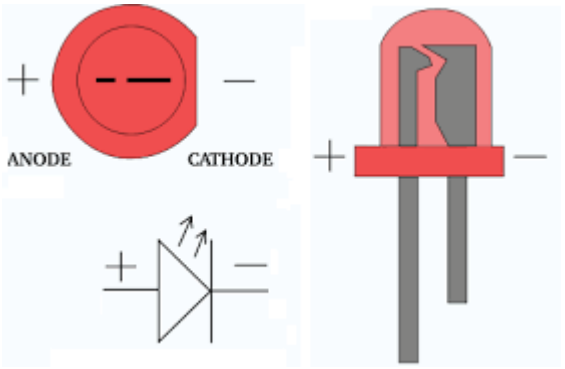


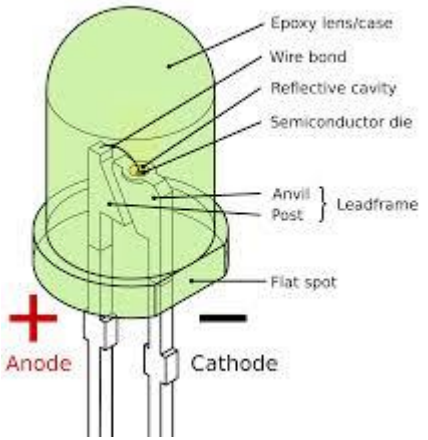
Capacitores

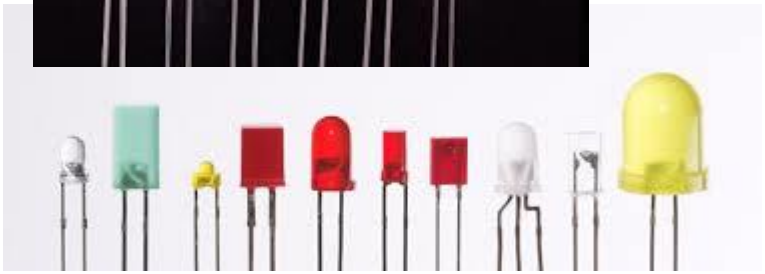




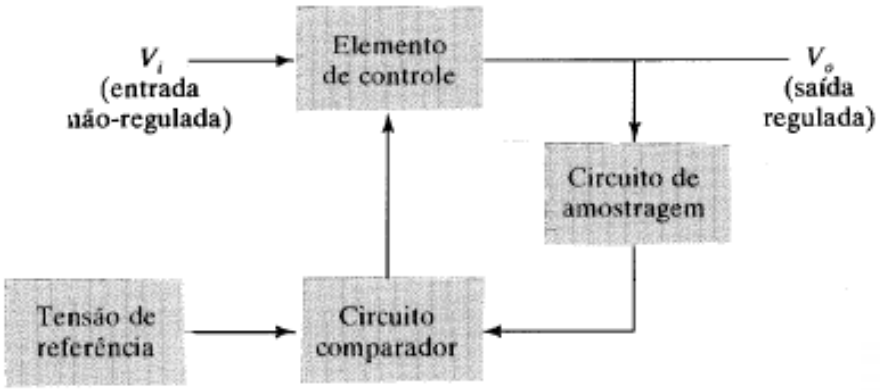
LED (Diodo Emissor de Luz)

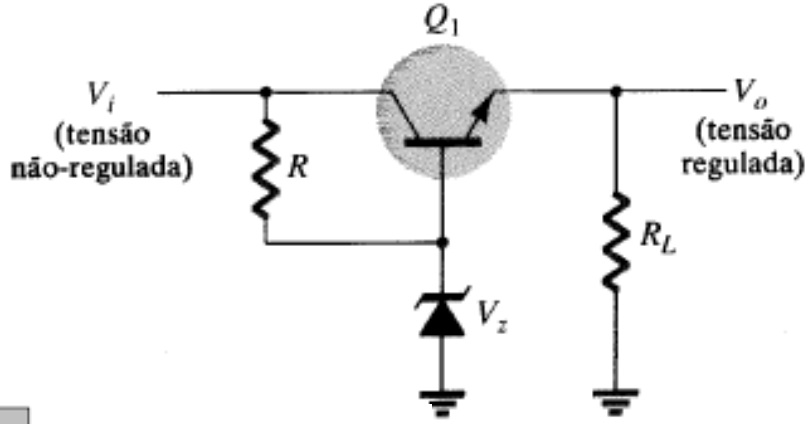


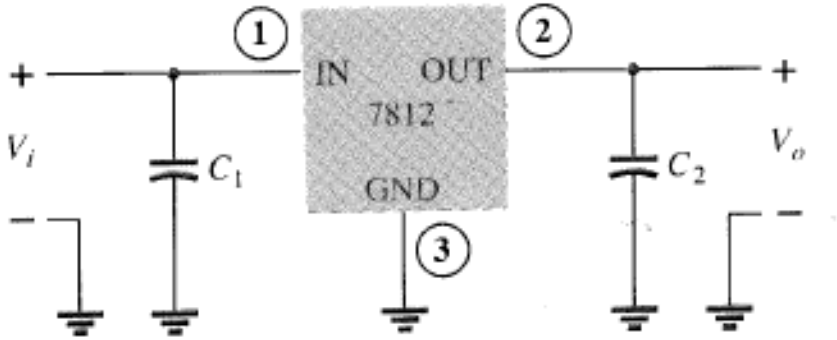


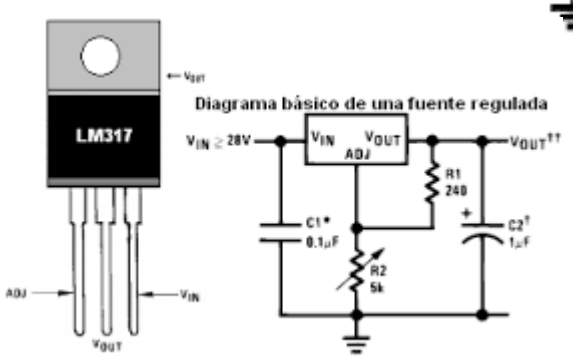


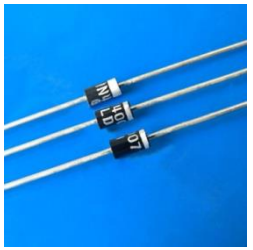
Regulação da Tensão

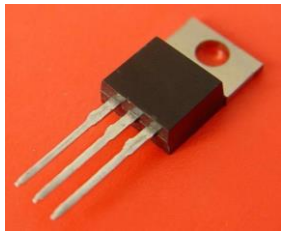








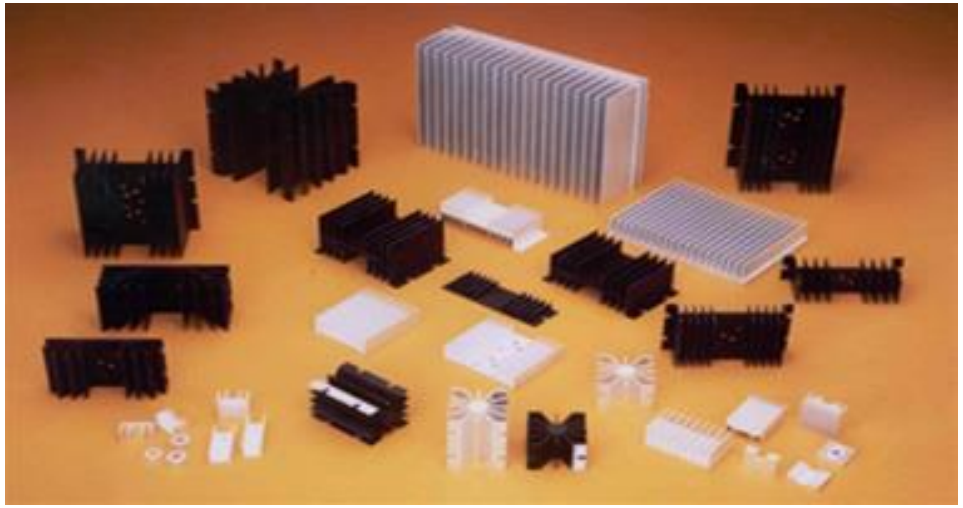


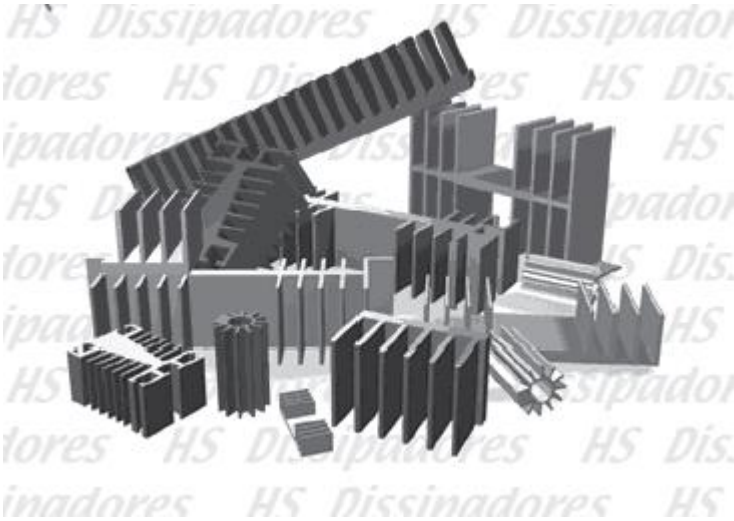


Ajuste/controle da tensão (Potenciômetro)

Conectores

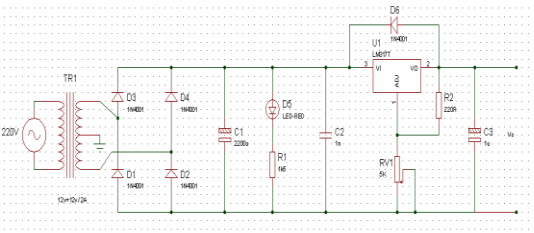
Dissipadores de Calor

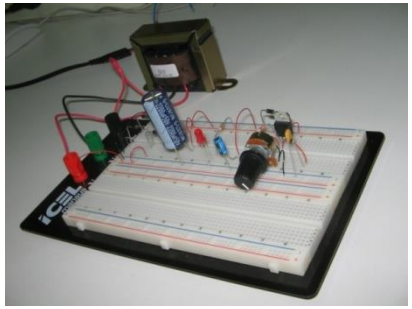


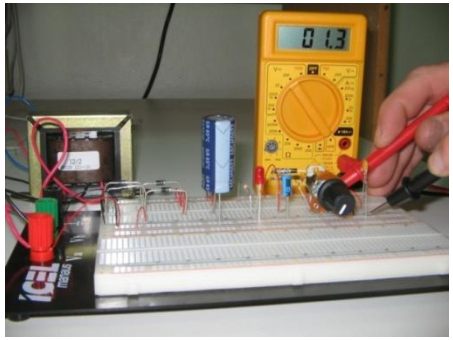


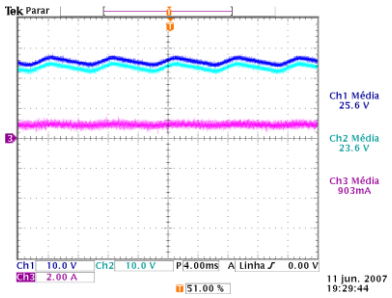
Site de dissipadores: http://www.hsdissipadores.com.br

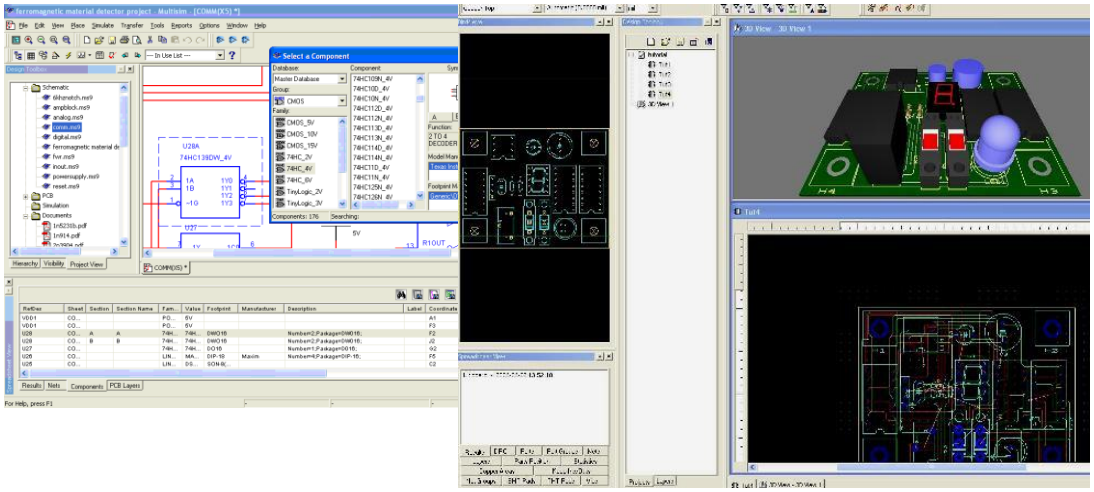
Placa de Circuito Impresso

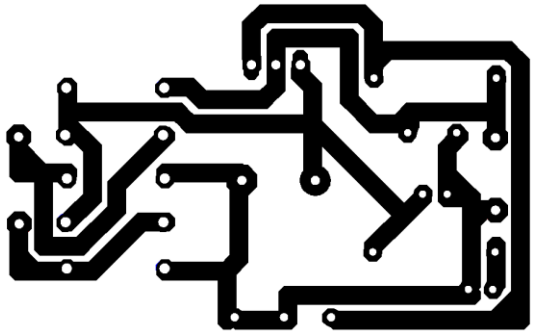


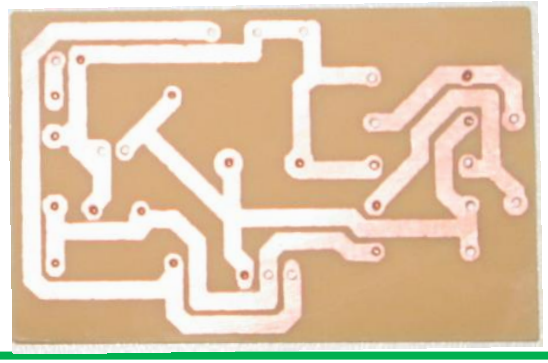






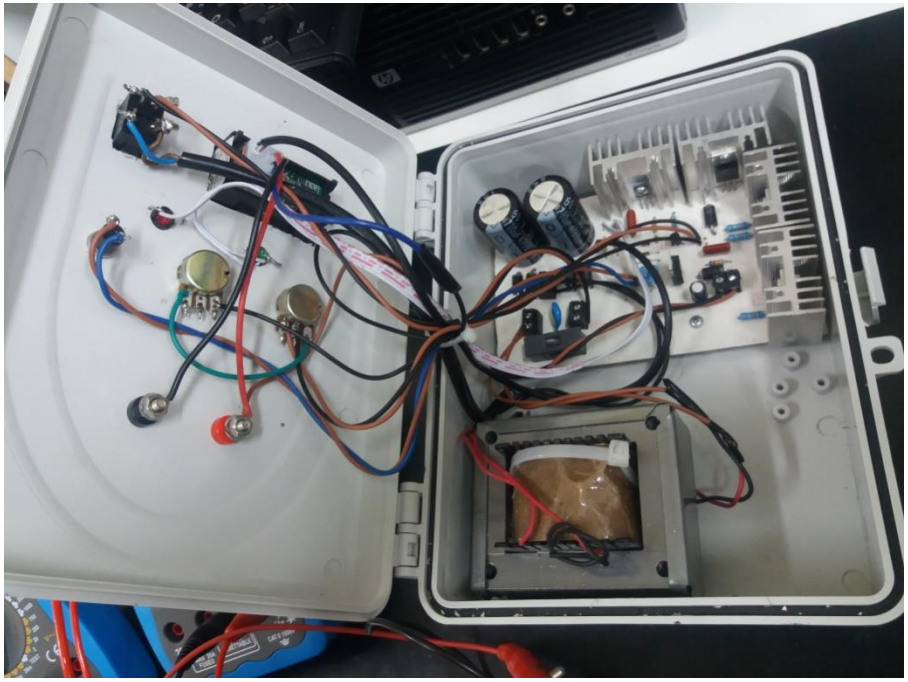






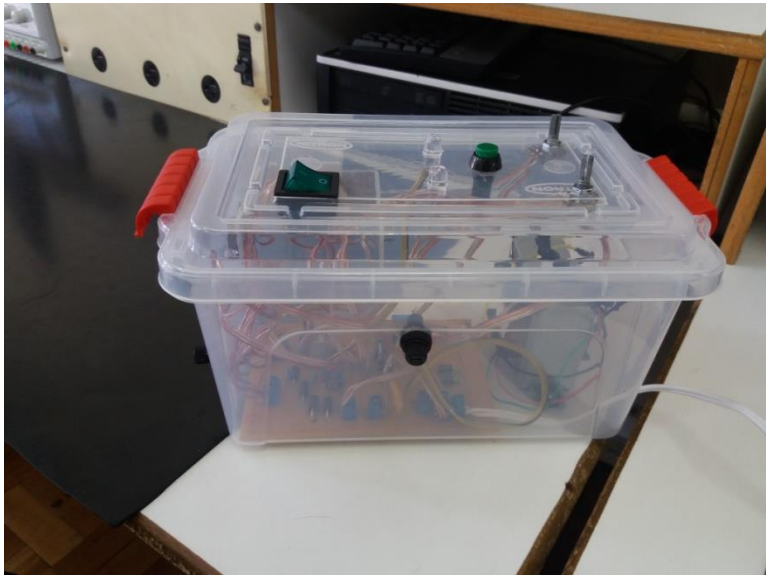
Gabinetes

Projeto Fontes Turmas Anteriores



Projeto Fontes Turmas Anteriores

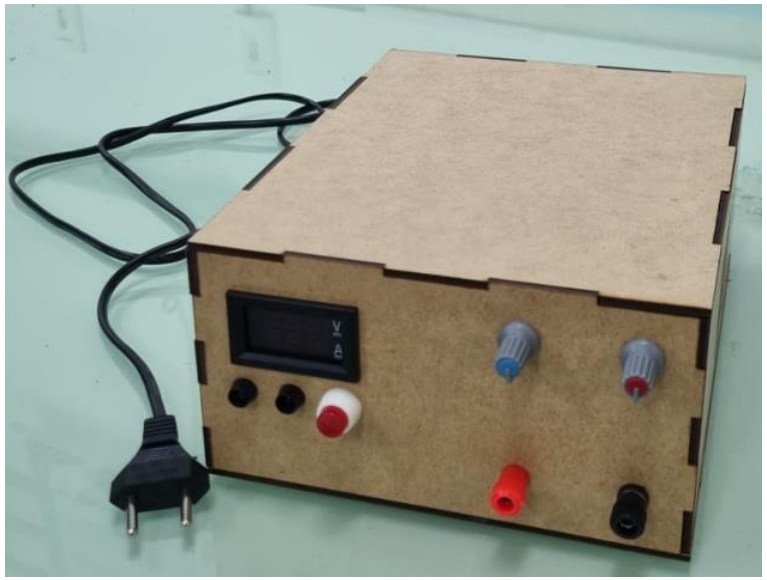
Projeto Fontes Turmas Anteriores

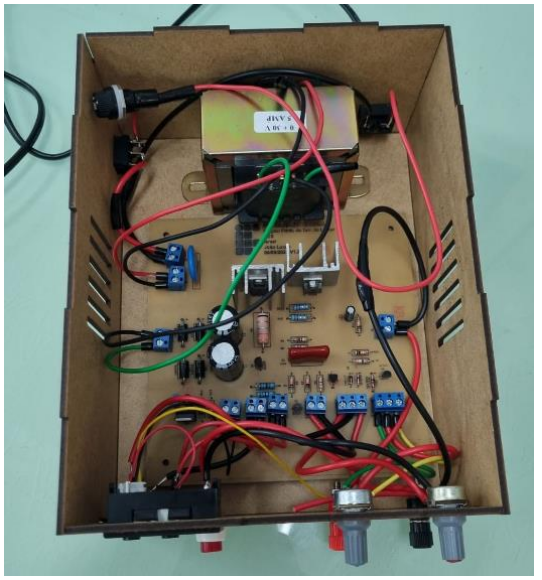


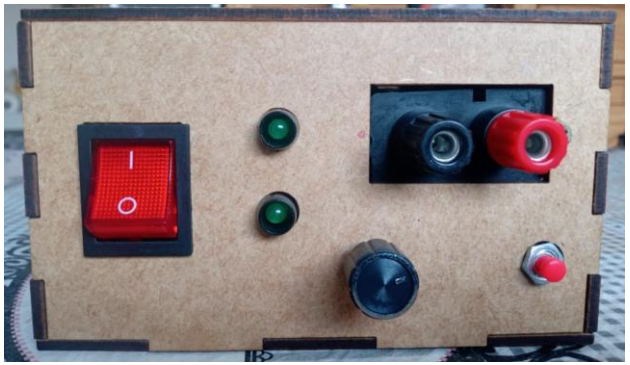
Projeto Fontes Turmas Anteriores

Projeto Fonte Linear – Turma: 2024-1

Projeto Fontes Turmas Anteriores

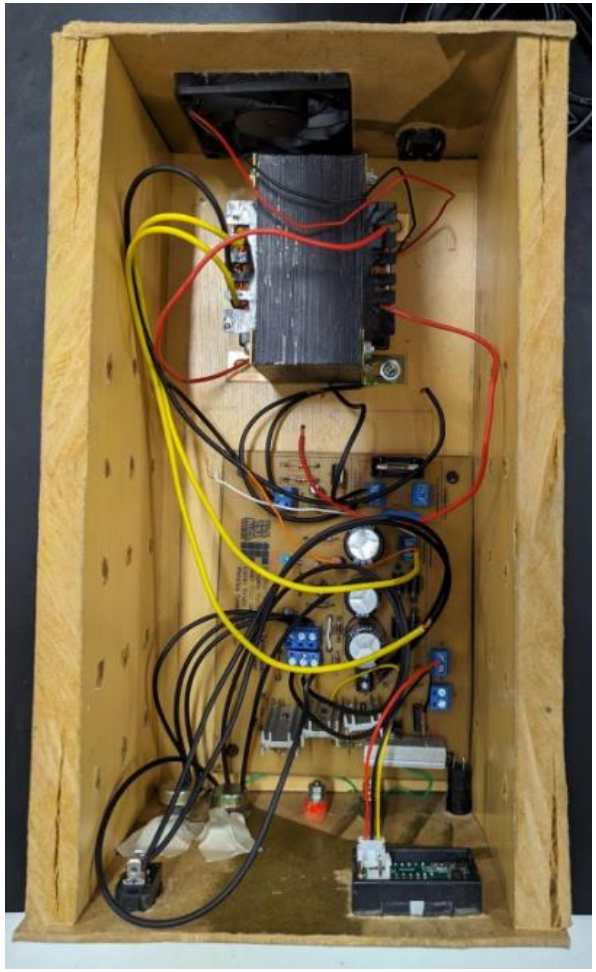






Projeto Fonte Linear – Turma: 2024-1

Projeto Fontes Turmas Anteriores



Projeto Fonte Linear – Turma: 2024-1