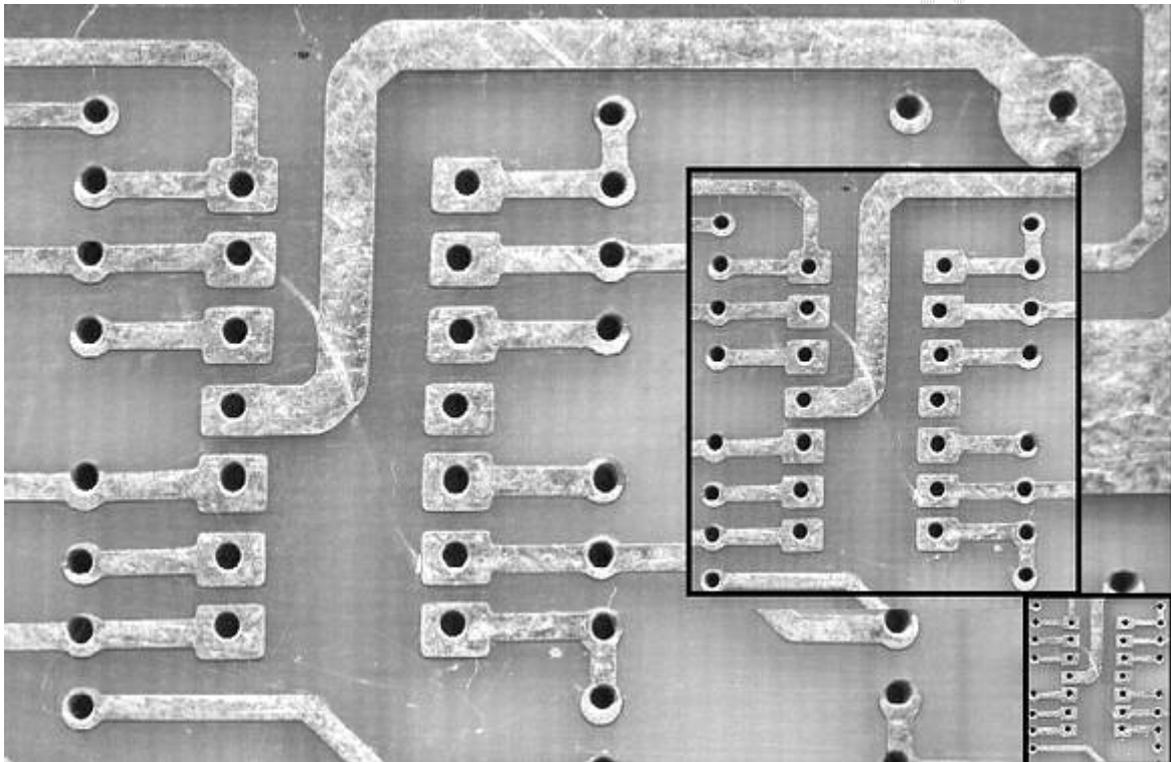


# *PROJETO DE CIRCUITO IMPRESSO*

© Prof. Eng° Luiz Antonio Vargas Pinto  
2008



**Relatórios:** Título  
Objetivo  
Circuito experimental  
Dados obtidos  
Análise  
Ocorrências  
Conclusões

**Material:**  
Guarda-pó branco  
Papel Sulfite A4 branco liso com margem  
Borracha branca plástica  
Régua 30 Cm  
Esquadro 45°  
Canetas Marca Texto  
Lapiseira 0.5 ou 0.7mm 2B  
Caneta Fine Liner ou Ultra fine preta  
Flanela  
Gabarito (opcional)  
Soldador 30W (opcional)

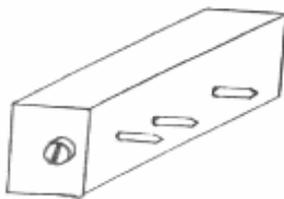
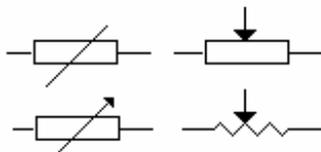
## 1. Resistores

### Resistor Fixo

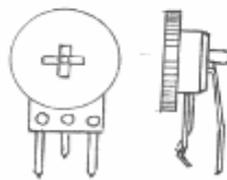
Carbono, filme metálico ou fio



### Resistor Variável



Multivolts

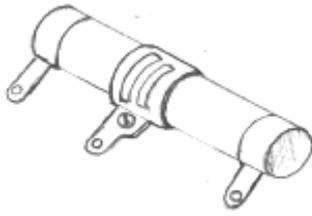
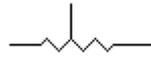


Trim Pot

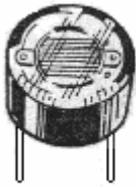


Potenciômetro

**Com derivação**



**LDR**



## **2. Indutores**

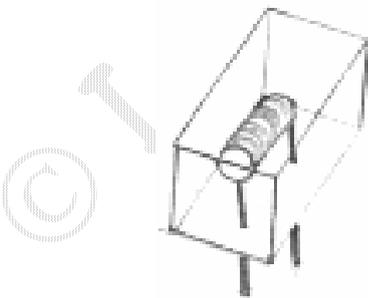


**Bobinas**

**Bobinas de RF**



**Encapsulada**



## Toróide



## 3. Capacitores $\parallel$

### **Cerâmico**

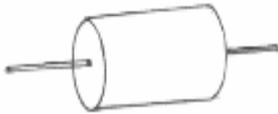
Capacidade medida em picoFarad ( $\times 10^{-12}$  F)



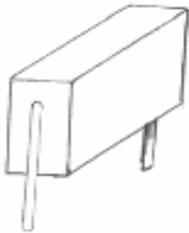
### **Poliéster**

Capacidade medida em nanoFarad ( $\times 10^{-9}$  F)

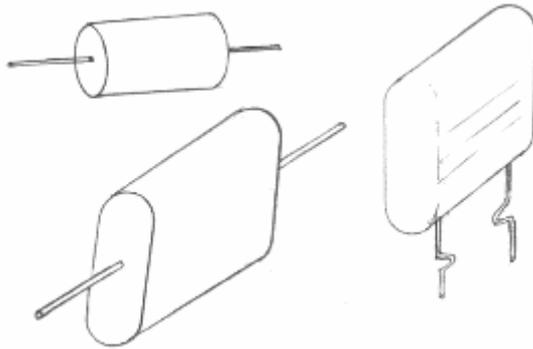
### **Styroflex**



### **Schiko**



## Poliéster

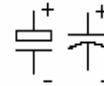


## Tântalo [polarizado]



## Eletrolítico [polarizado]

Capacidade medida em microFarad ( $\times 10^{-6}$  F)

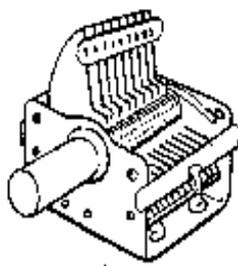


Radial

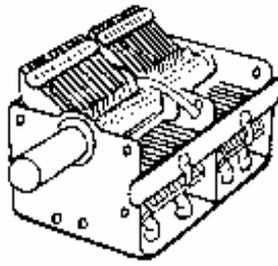


Axial

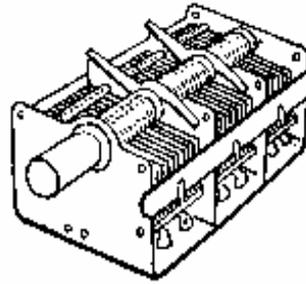
## Capacitor Variável



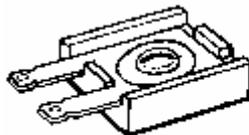
Com uma secção



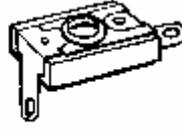
com duas secções



com três secções



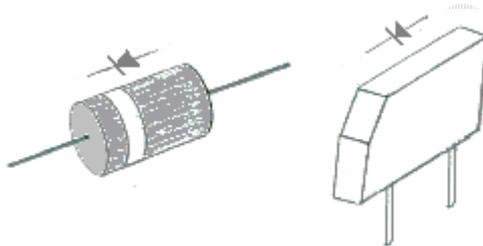
PADDER



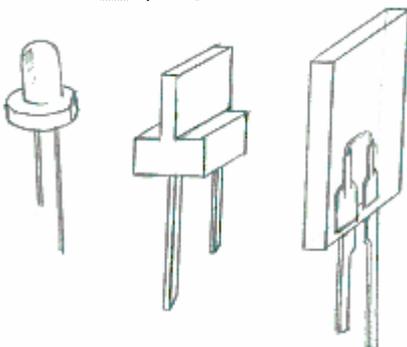
TRIMMER

## 4. Semicondutores

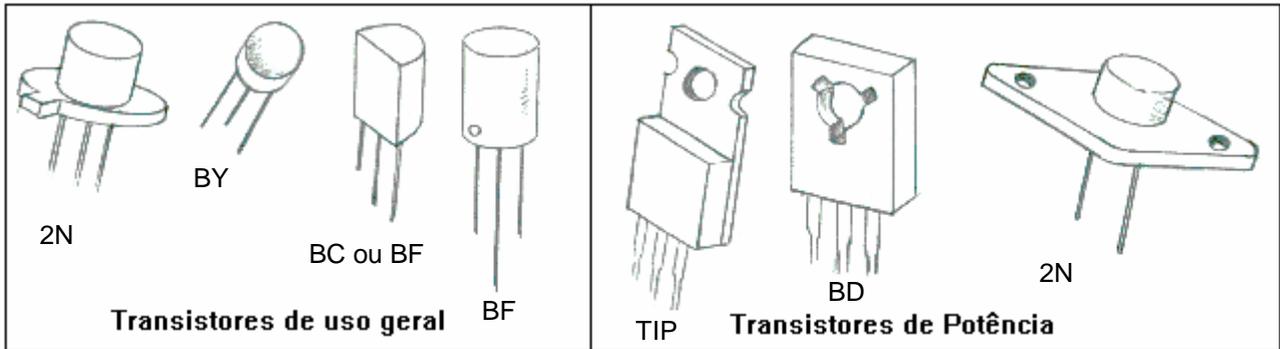
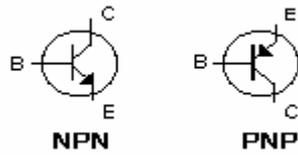
### Diodo



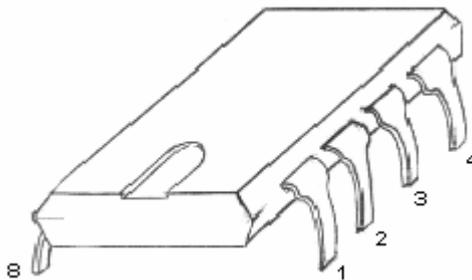
### LED



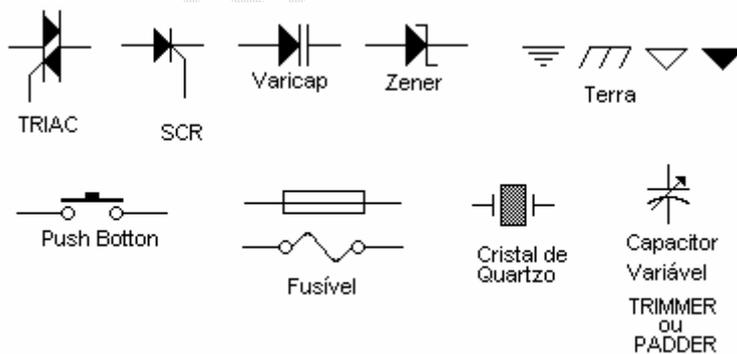
## Transistor



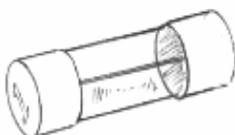
## 5. Circuito Integrado



## 6. Mais alguns símbolos



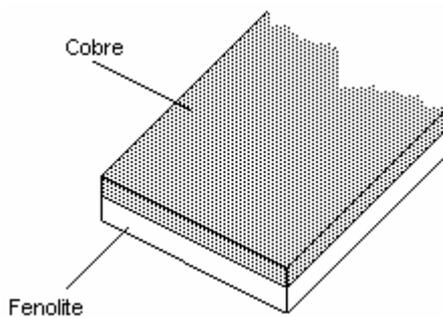
## 7. Fusível



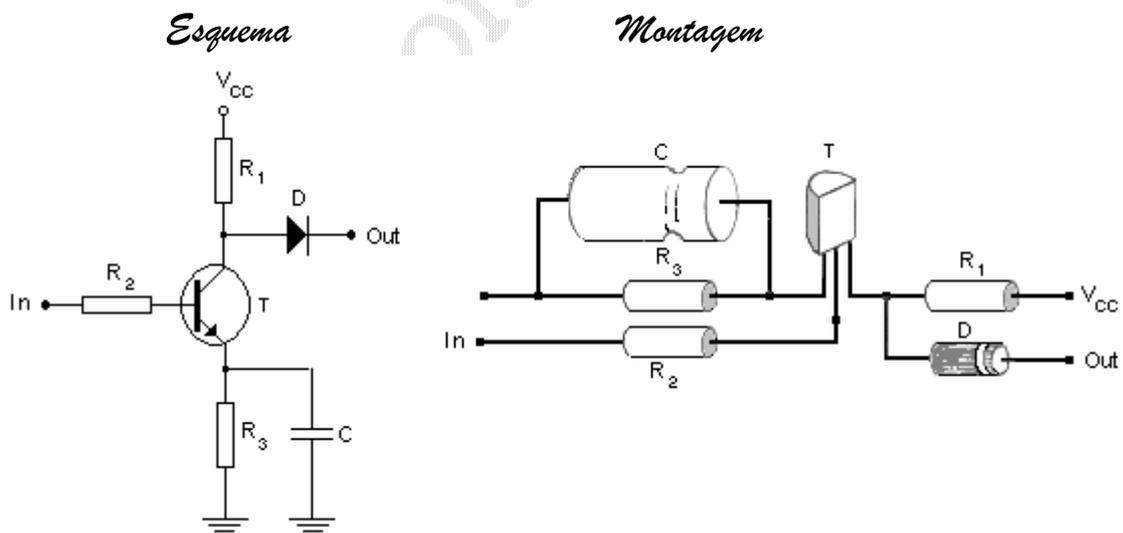
## 8. Bateria (Vcc-Positivo e GND-Terra)



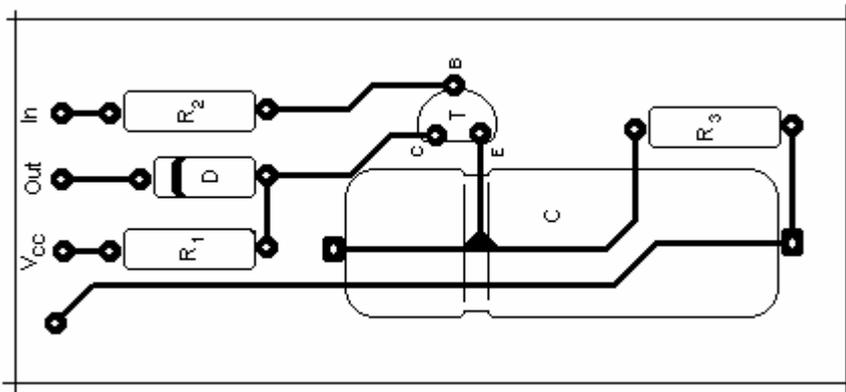
## 9. Placa de Fenolite ou fiberglass:



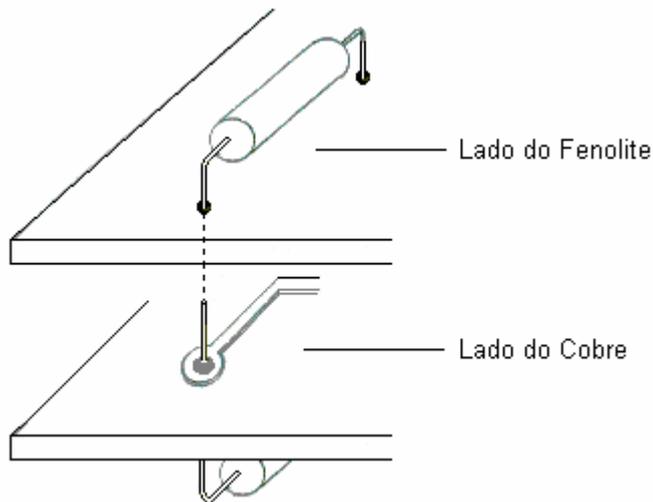
## 10. Projeto de circuito impresso:



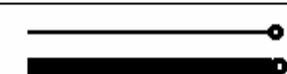
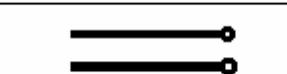
## PCI (*Placa de Circuito Impresso*)

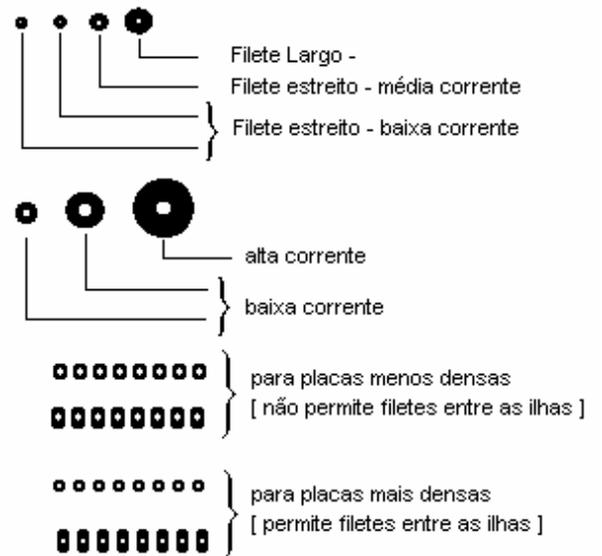


## Soldagem



## Considerações

Errado	Correto
	
	
	
	
	
	
	



## Medidas

A utilização de algumas medidas tem aplicação em placas de pequeno e médio porte pois dificilmente se utilizaria algum programa de CAD para o desenvolvimento das mesmas exceto em empresas que trabalhem especificamente com esse serviço.

Alguns componentes tem medidas simples, as quais veremos a seguir: