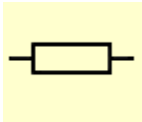
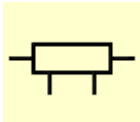
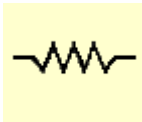
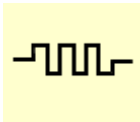
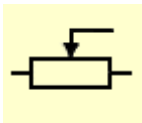
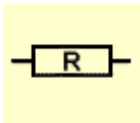
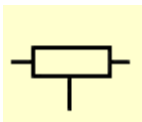
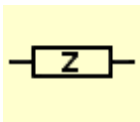
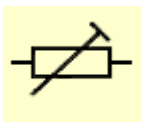
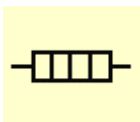
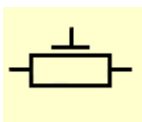
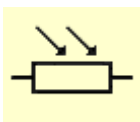
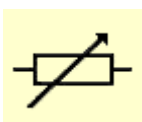
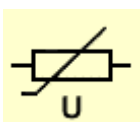
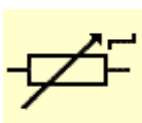
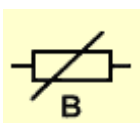


1.1 SIMBOLOGÍA

1.2.1. SÍMBOLOS ELÉCTRICOS Y ELECTRÓNICOS - RESISTENCIAS

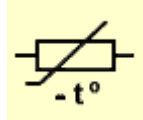
	Símbolo general de la resistencia		Resistencia con tomas adicionales de corriente
	Se utiliza también como símbolo general de la resistencia		Resistencia no inductiva
	Potenciómetro		Resistencia no inductiva
	Potenciómetro fijo		Resistencia de impedancia
	Resistencia ajustable		Resistencia de calefacción
	Resistencia ajustable		LDR *
	Resistencia variable		VDR **
	Resistencia variable escalonada		Resistencia dependiente de un campo magnético

1.2.2. TERMISTORES

Termómetros de resistencia de silicio (Si)

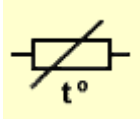


PTC*



NTC**

Termómetro de resistencia de platino (Pt)



RTD*

* RTD - Resistance Temperature Detector - Resistencia detectora de temperatura.
Esta resistencia también se le conoce como PRT - Platinum Resistance Thermometer
- Resistencia de platino termómetro.

1.2.3. SÍMBOLOS ELÉCTRICOS Y ELECTRÓNICOS – CONDENSADORES O CAPACITORES



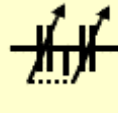
Símbolo general del condensador o capacitor no polarizado



Símbolo general del condensador variable



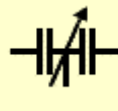
Se utiliza también como símbolo general del condensador no polarizado



Condensador variable en tándem



Condensador electrolítico polarizado



Condensador variable de armadura doble



Condensador electrolítico polarizado



Condensador ajustable (trimmer)



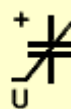
Condensador electrolítico polarizado



Condensador pasante



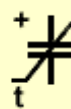
Condensador electrolítico doble, polarizado



Condensador sensible a variaciones de tensión (polarizado)

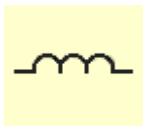


Condensador con armadura anclada a masa o tierra

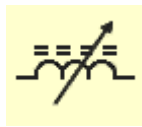


Condensador sensible a la temperatura (polarizado)

1.2.4. SÍMBOLOS ELÉCTRICOS Y ELECTRÓNICOS - BOBINAS



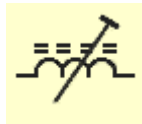
Bobina - Símbolo general.



Bobina de núcleo variable.



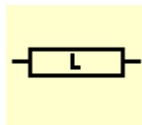
Se utiliza también como símbolo general de la bobina.



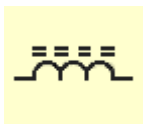
Bobina ajustable.



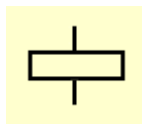
Bobina con núcleo de hierro-silicio (FeSi).



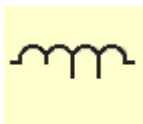
Inductancia.



Bobina con núcleo de ferrita.



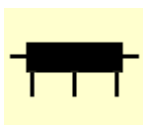
Bobina de accionamiento.



Bobina con tomas fijas de corriente.



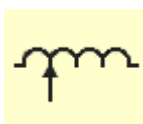
Bobina blindada.



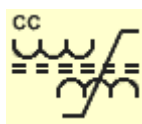
Bobina con tomas fijas de corriente.



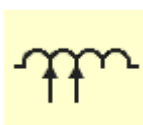
Bobina deflectora.



Bobina variable.



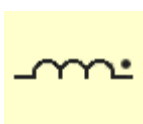
Bobina con núcleo saturable.



Bobina variable escalonada.



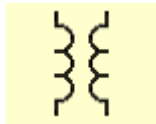
Bobina de electroimán.



Polaridad de enrollado

1.2.5. SÍMBOLOS DE TRANSFORMADORES ELÉCTRICOS

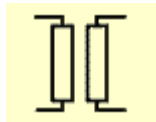
A continuación aparece una relación de símbolos con los cuales se pueden representar en los planos de instalaciones eléctricas los transformadores de empleados para aumentar o disminuir tensiones o voltajes de corriente alterna, así como para medir intensidades eléctricas.



Transformador (bobina) con núcleo de aire



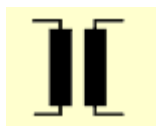
Autotransformador



Transformador (bobina) con núcleo de aire



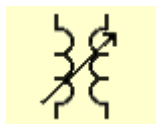
Autotransformador



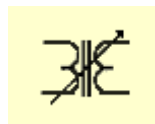
Transformador (bobina) con núcleo de aire



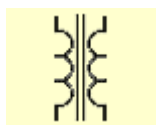
Autotransformador



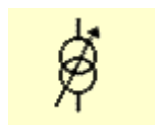
Transformador de acoplamiento ajustable



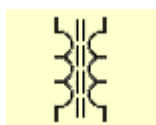
Transformador ajustable



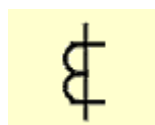
Transformador con núcleo de hierro



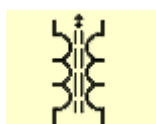
Transformador ajustable



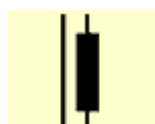
Transformador con núcleo de ferrita



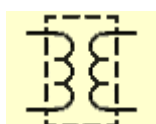
Transformador de intensidad (corriente)



Transformador ajustable con núcleo de ferrita



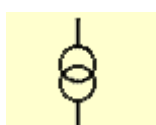
Transformador de intensidad (corriente)



Transformador apantallado o blindado

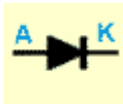


Transformador de intensidad (corriente)

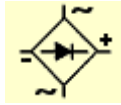


Transformador de fuerza

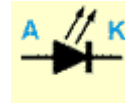
1.2.6. SÍMBOLOS ELECTRÓNICOS - DIODOS



Diodo rectificador común

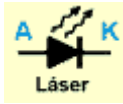


Diodo rectificador de onda completa

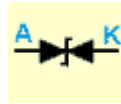


LED*

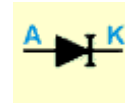
* (Light Emitting Diode - Diodo Emisor de Luz)



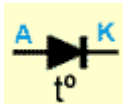
Diodo láser



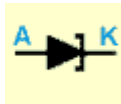
Diodo supresor de tensión



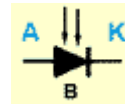
Diodo de intensidad constante



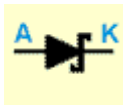
Diodo sensible a la temperatura



Diodo túnel



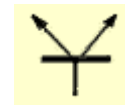
Diodo magnético



Diodo Schottky

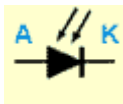


Diodo bidireccional NPN



Diodo bidireccional PNP

FOTODIODOS



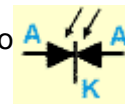
Fotodiodo común



Fotodiodo PNP

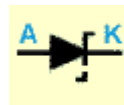
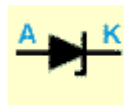
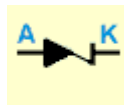
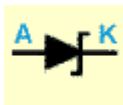


Fotodiodo NPN

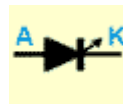
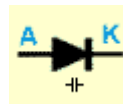
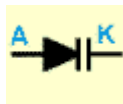


Fotodiodo PNP de cátodo común

DIODOS ZENER



DIODOS VARICAP



1.2.7. SÍMBOLOS DE TRANSISTORES

A continuación encontrarás una relación del conjunto o sistema de símbolos comúnmente utilizado para representar los transistores de unión, los transistores del tipo FET (Field Effect Transistor - Transistor- de Efecto de Campo) y los transistores tipo MOSFET (Metal Oxide Semiconductor Field Effect Transistor- - Transistor de Efecto de Campo Semiconductor de Óxido Metálico).

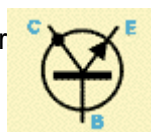
TRANSISTORES DE UNIÓN



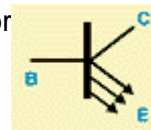
Transistor común PNP



Transistor común NPN

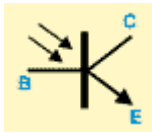


Transistor NPN con unión en la cápsula



Transistor multiemisor

FOTOTRANSISTORES

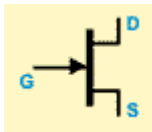


NPN con conexión a base

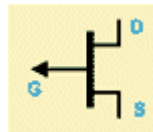


NPN sin conexión a base

TRANSISTORES FET



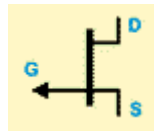
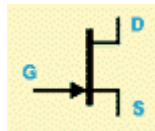
Canal N



Canal P

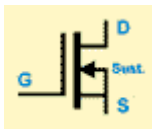
TRANSISTORES DE UNIÓN FET (JFET)

(Joint Field Effect Transistor - Transistor de Unión de Efecto de Campo)

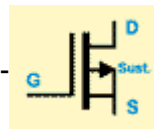


TRANSISTORES MOSFET

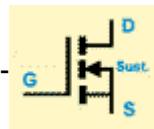
Con tres terminales o patillas y sustrato unido a la fuente "S"



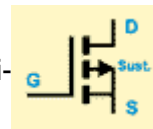
Tipo Empobrecimiento N



Tipo Empobrecimiento P

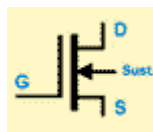


Tipo Enriquecimiento N

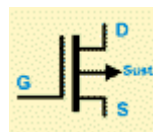


Tipo Enriquecimiento P

Con cuatro terminales o patillas

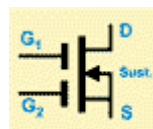


Tipo N

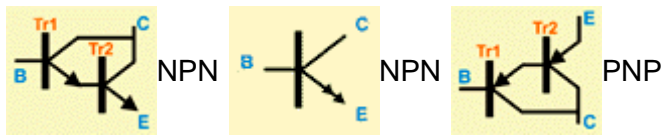


Tipo P

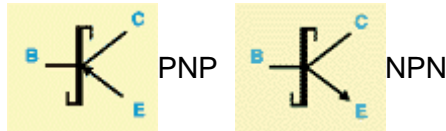
De doble puerta



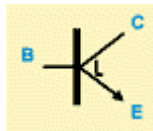
DARLINGTON



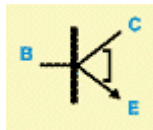
SCHOTTKY



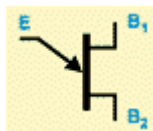
Otras variantes de MOSFET



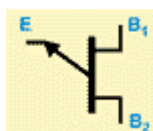
Transistor de
avalancha NPN



Transistor de túnel
NPN



Transistor UJT* de
doble base, Canal N



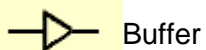
Transistor CUJT** de
doble base, Canal P

* UJT (Unijunction Transistor - Transistor Monounión o Uni-uni3n)

** CUJT (Complementary Unijunction Transistor - Transistor Monouni3n o Uni-uni3n Complementario)

Todas las representaciones gráficas de los transistores pueden ir encerradas en un c3rculo o dibujadas- simplemente sin c3rculo.

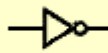


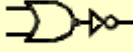

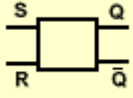

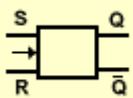
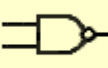
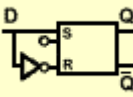

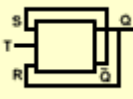


1.2.8. SÍMBOLOS DIGITALES (L3GICOS)



Buffer



Puerta Ex-NOR (dos
entradas)

	Inversor puerta NOT		Puerta triestado
	Buffer triestado		Puerta Y (Exclusiva)
	Puerta AND (dos entradas)		Báscula R-S
	Puerta OR (dos entradas)		Báscula J-K
	Puerta NAND (dos entradas)		Báscula D
	Puerta NOR (dos entradas)		Flip Top T
	Puerta Ex-OR (dos entradas)		Display alfanumérico de siete segmentos