

Curso Técnico em Eletrotécnica

Aplicações dos diodos Parte 2

Aplicações de diodos.

Sequência de conteúdos:

1. Portas lógicas com diodos;
2. Retificador de meia onda;
3. Ceifadores;
4. Grampeadores.

Vitória-ES

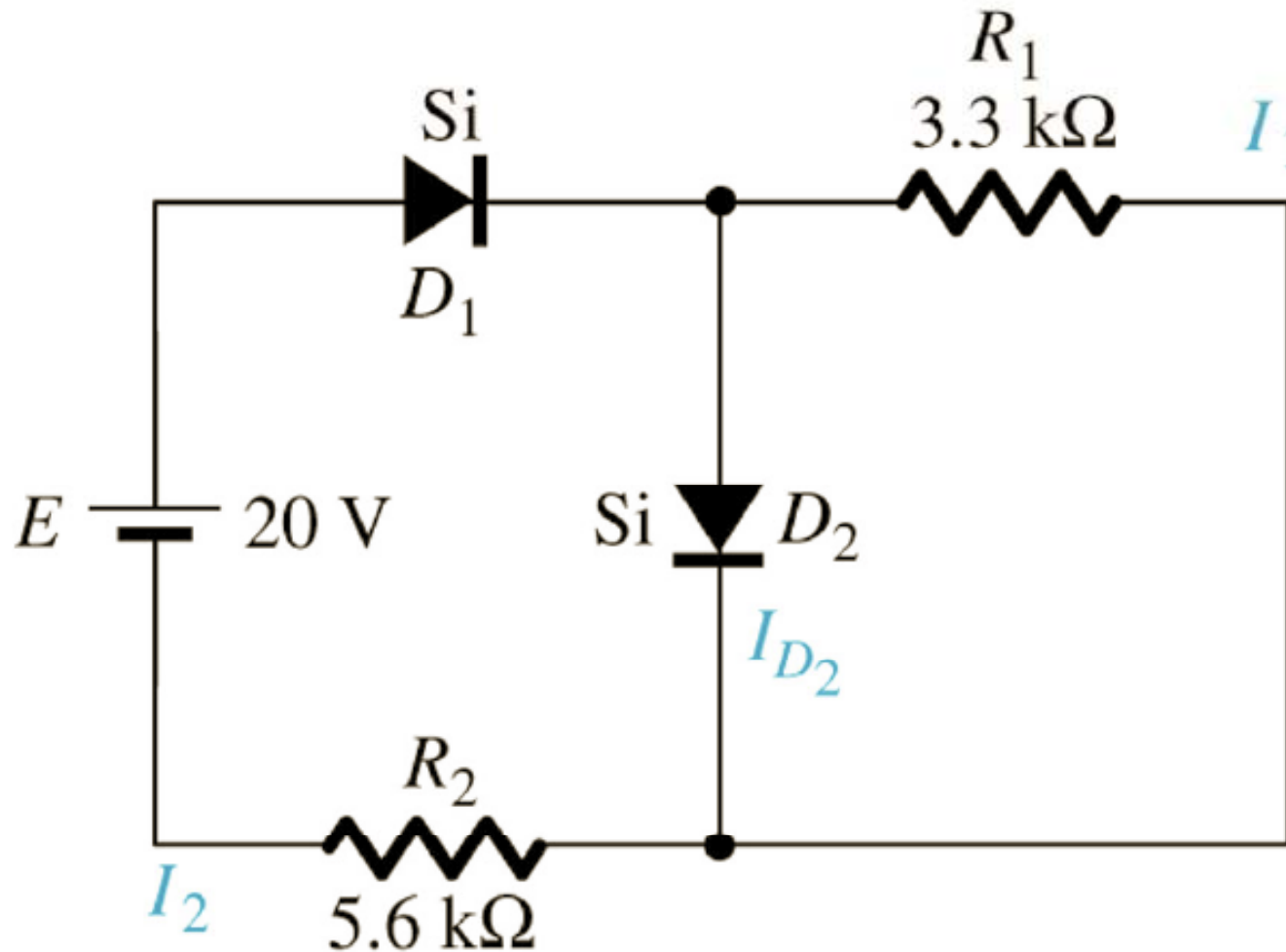
Nesta aula

Sequência de conteúdos:

1. Portas lógicas com diodos;
2. Retificador de meia onda;
3. Ceifadores;
4. Grampeadores.

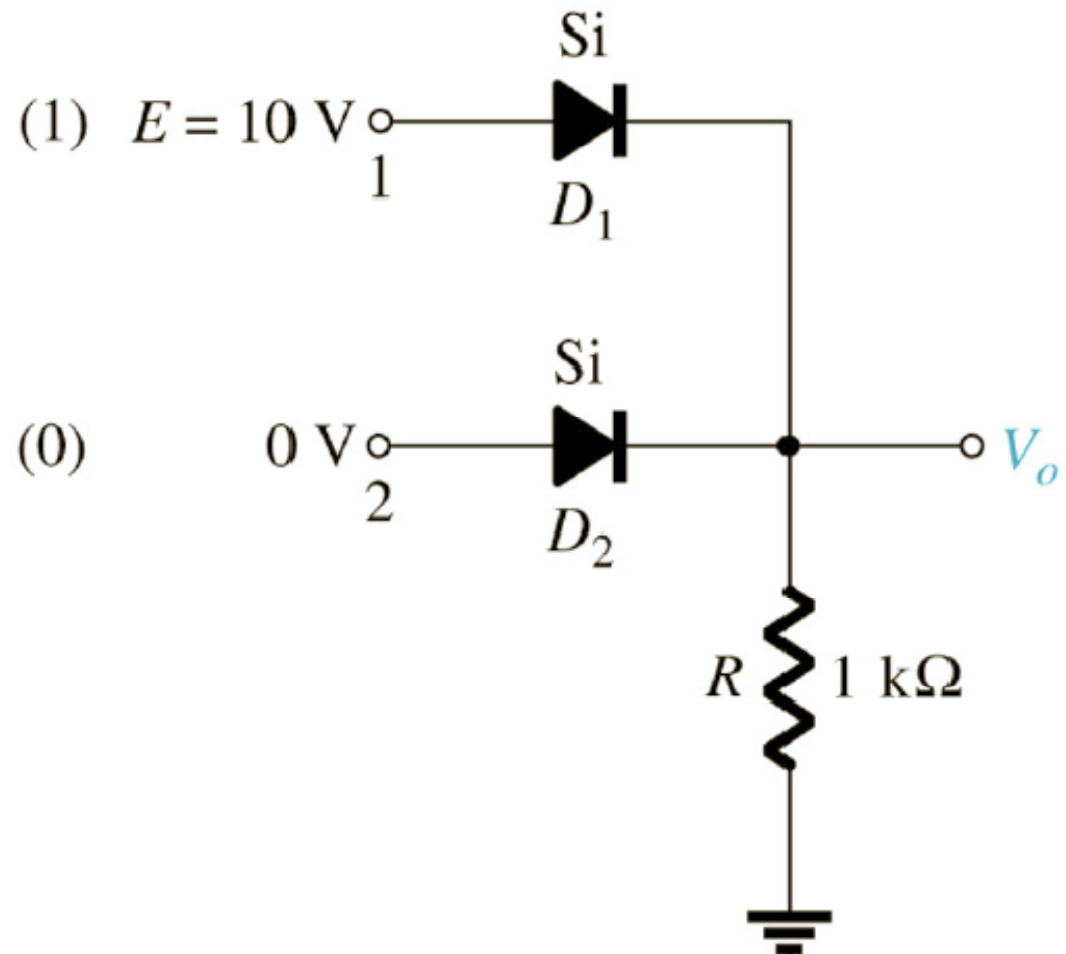
Circuitos paralelo de diodos - Resolução

Exemplo 2.15: Determinar as correntes I_1 , I_2 e I_{D2} .



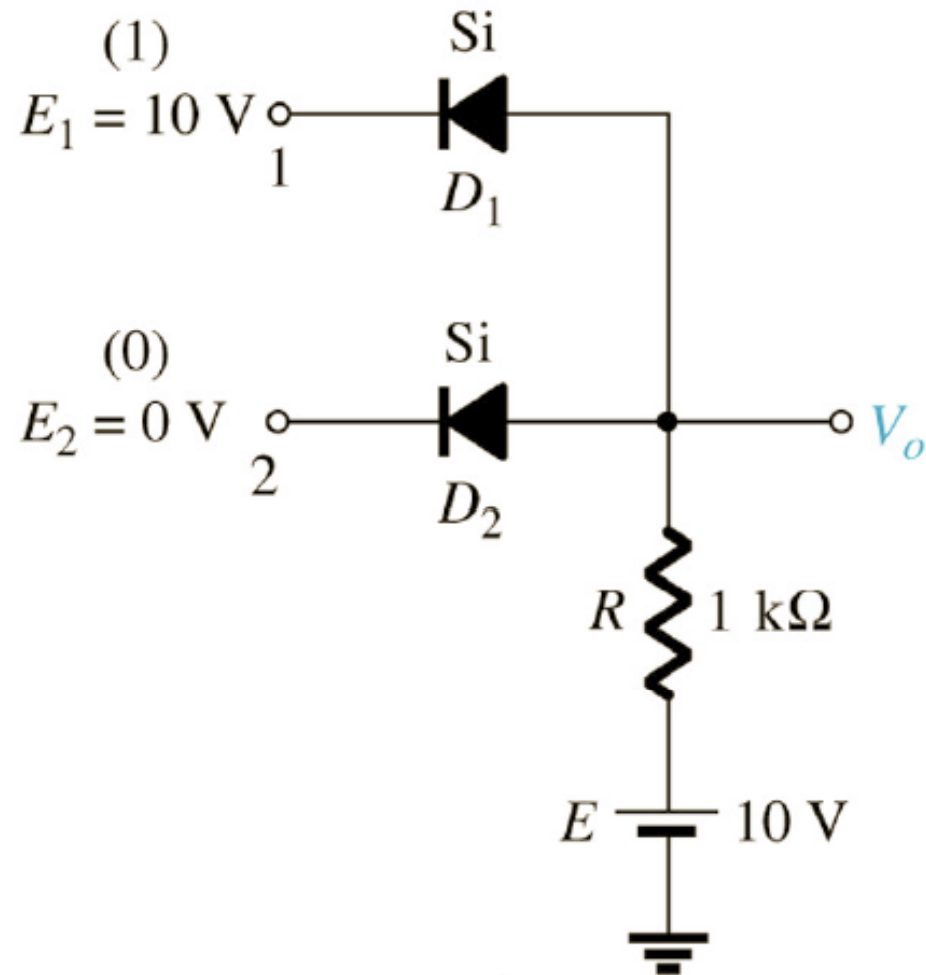
Portas lógicas com diodos

Porta OU (OR):



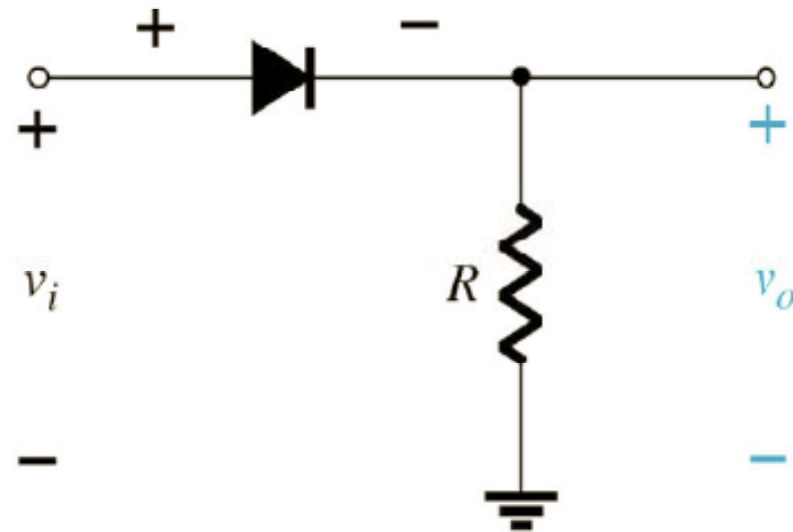
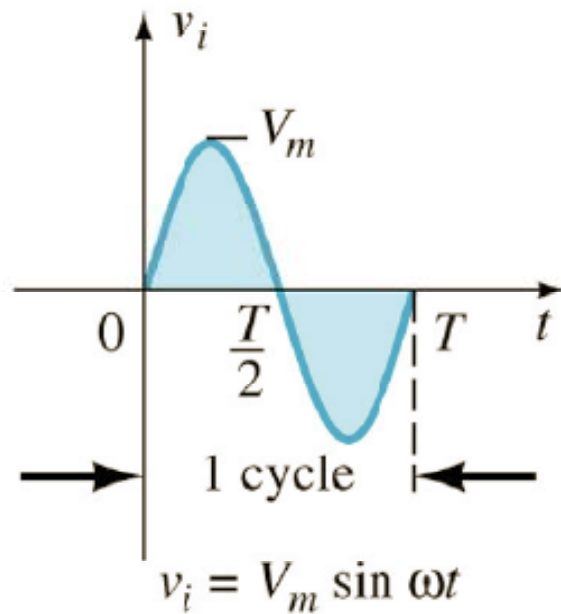
Portas lógicas com diodos

Porta E (AND):



Retificadores

Retificador de meia onda:

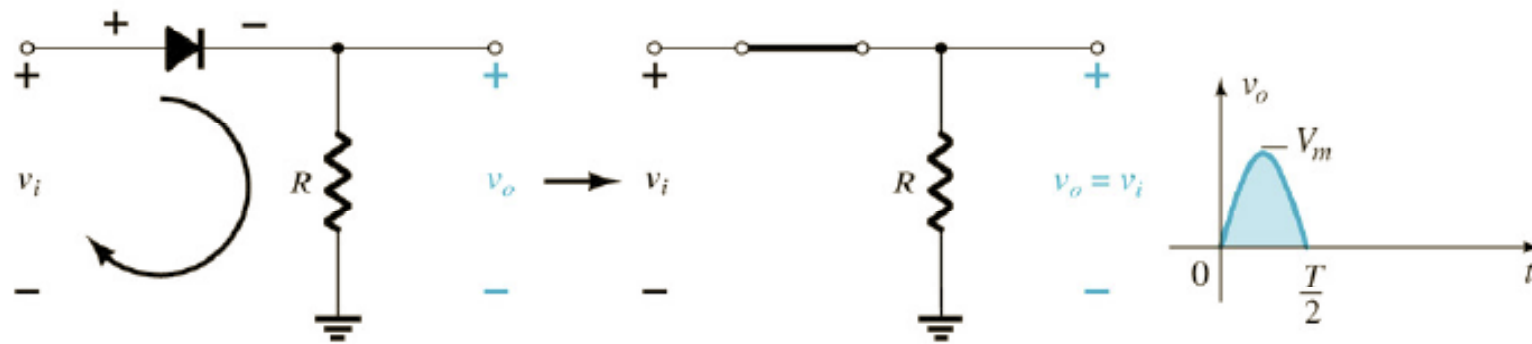


Os circuitos retificadores serão estudados em detalhe em outro momento desta disciplina.

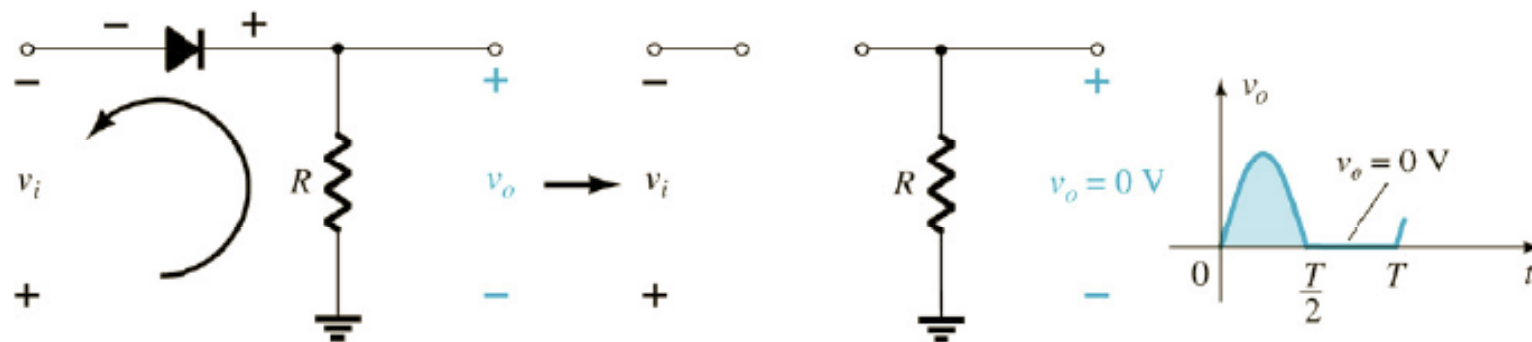
Retificadores

Retificador de meia onda:

Diodo conduzindo.

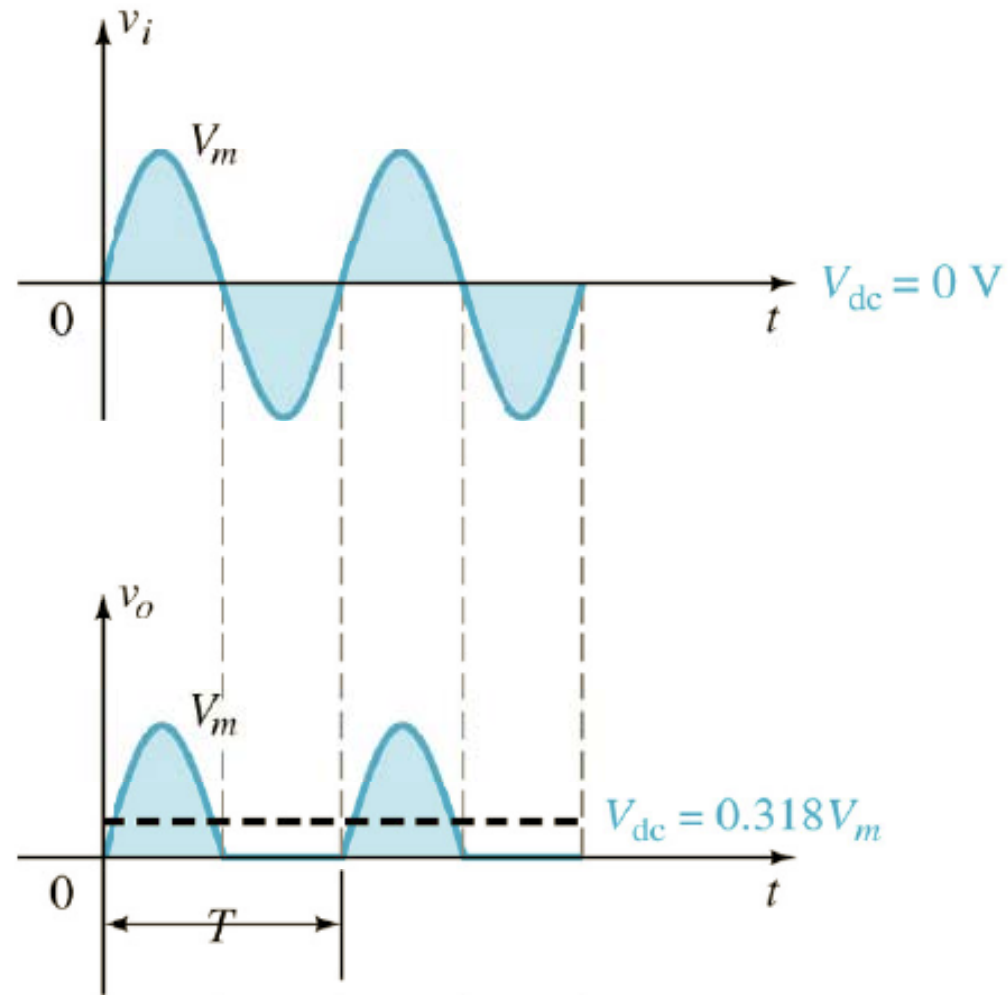


Diodo bloqueado.



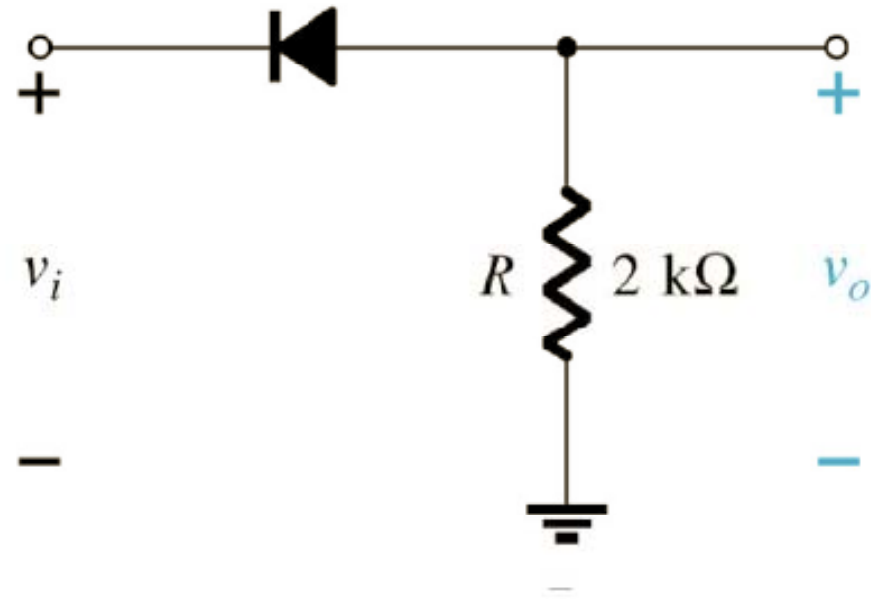
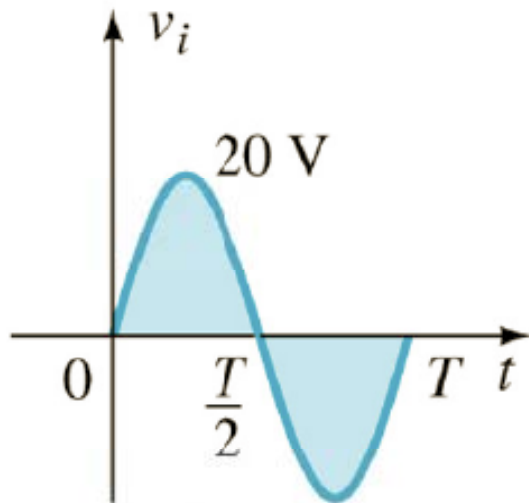
Retificadores

Retificador de meia onda:



Retificadores

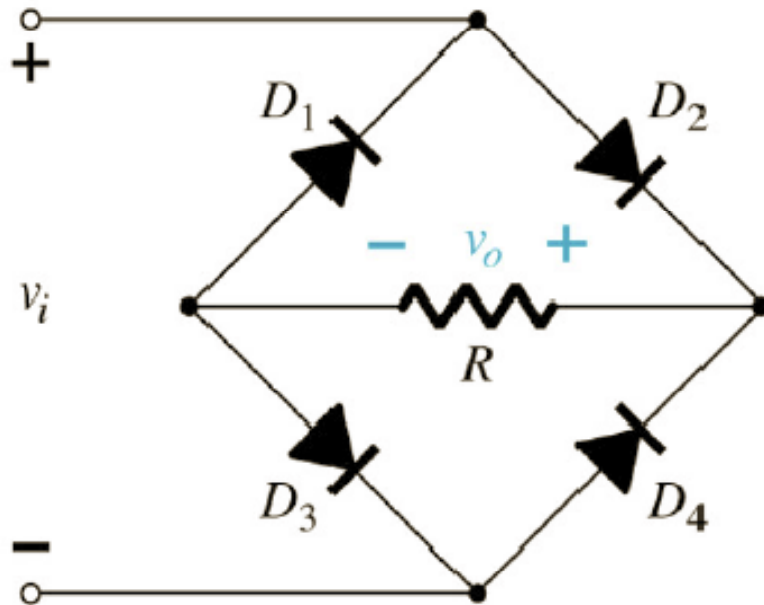
Retificador de meia onda:



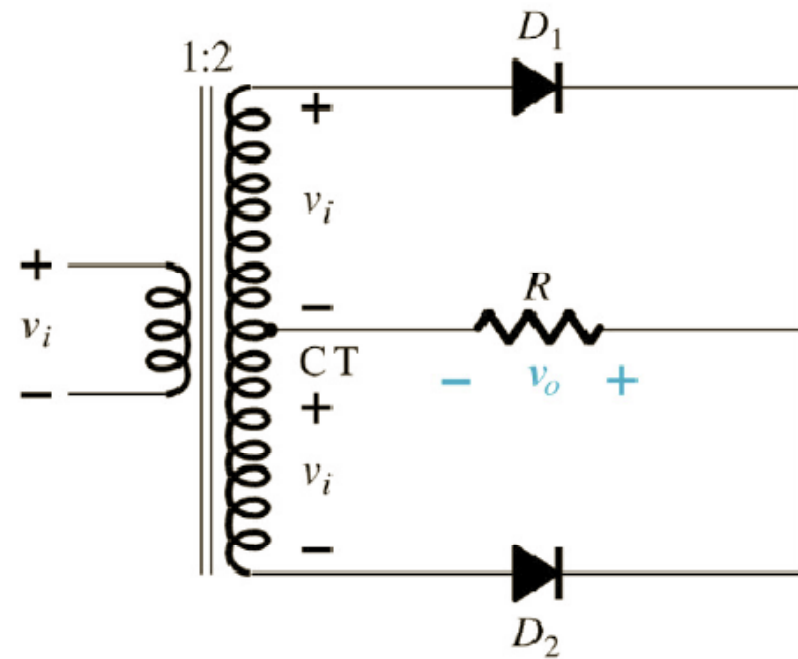
Esboçar a forma de onda da tensão de saída.

Retificadores

Retificadores de onda completa:



Em ponte.



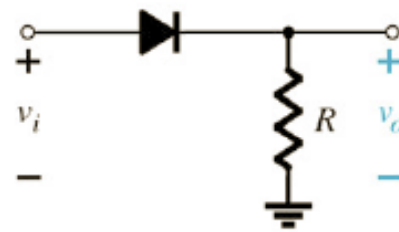
Com transformador em derivação central (tap central).

Ceifadores

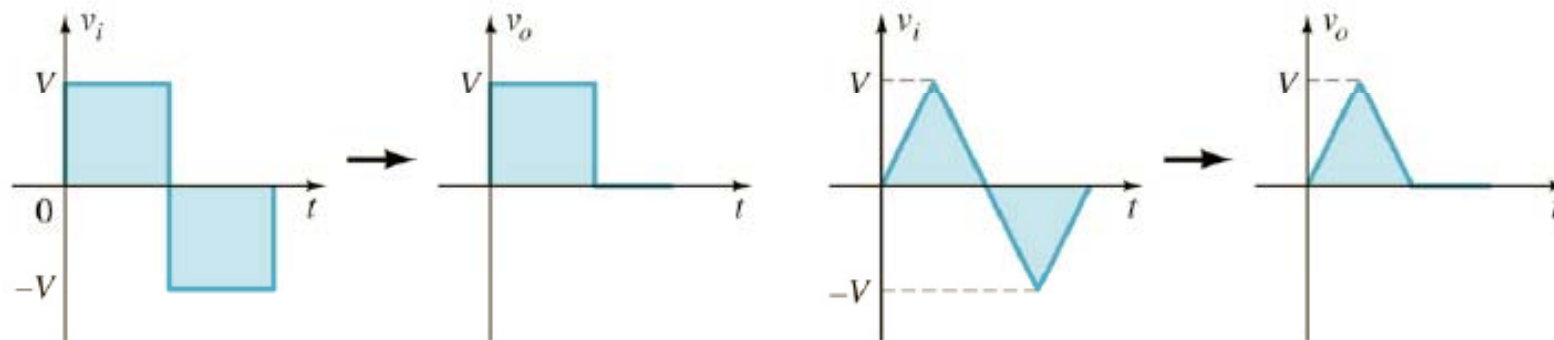
Circuitos ceifadores:

- Tem a capacidade de ceifar (cortar) uma parte do sinal;
- Podem ser em série ou em paralelo.

Ceifador série



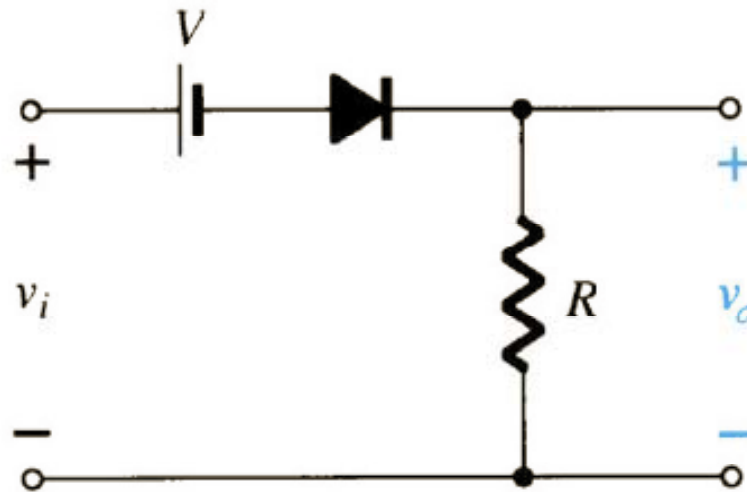
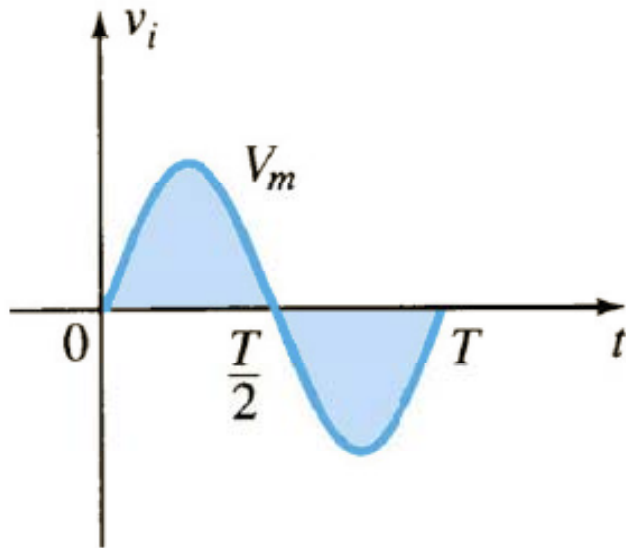
(a)



(b)

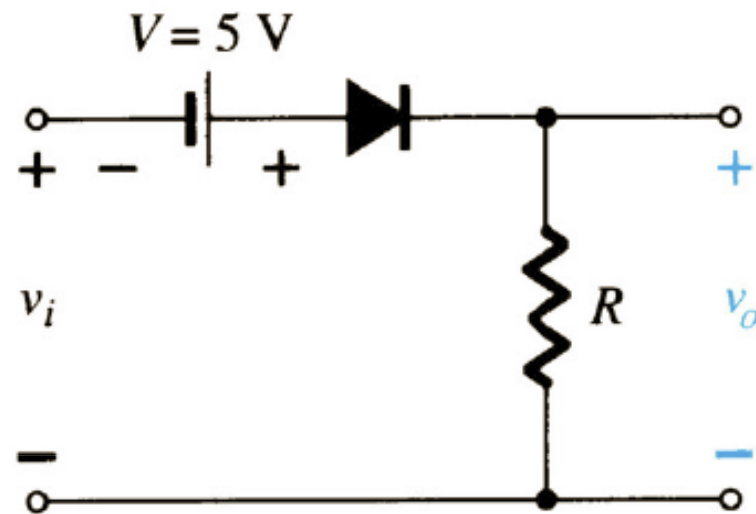
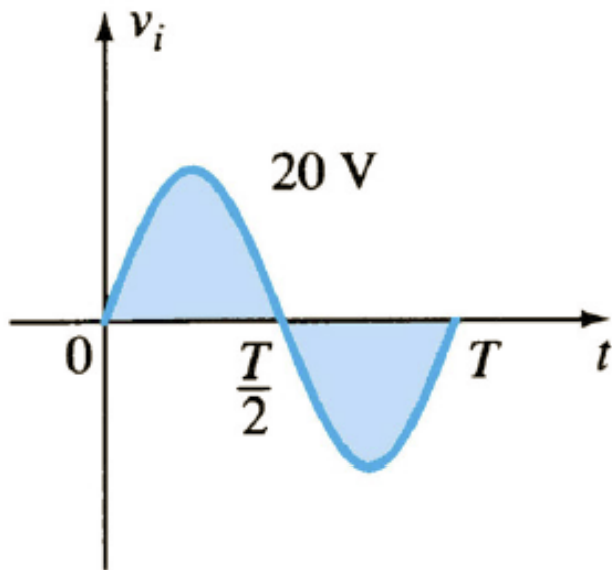
Ceifadores

Ceifador série com fonte:



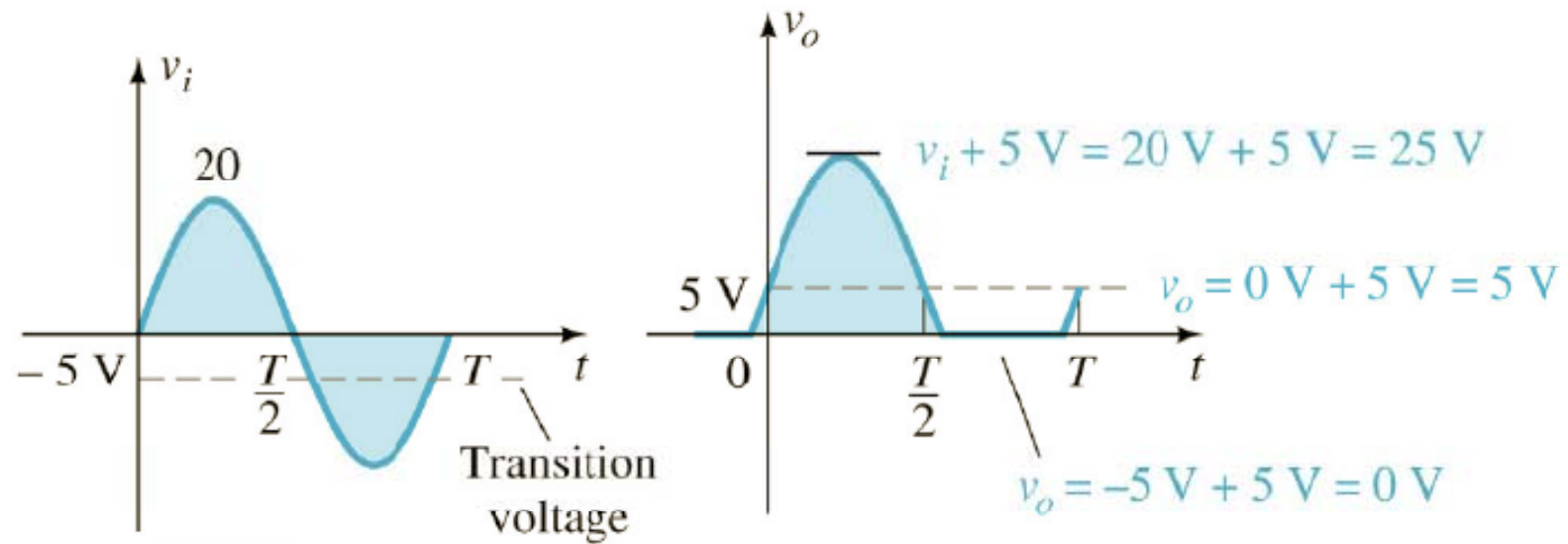
Ceifadores

Ceifador série com fonte, exemplo:



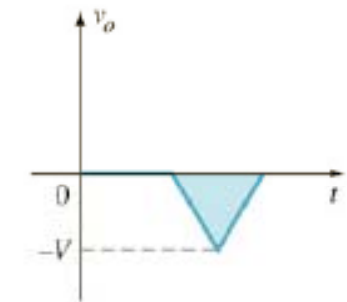
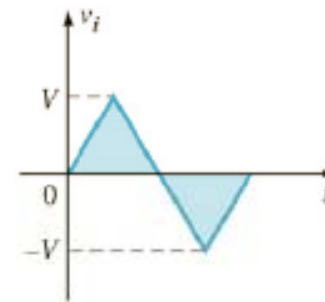
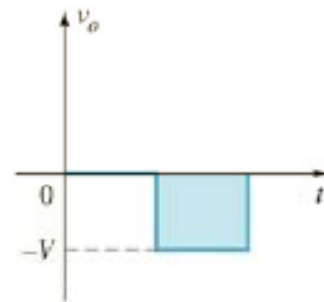
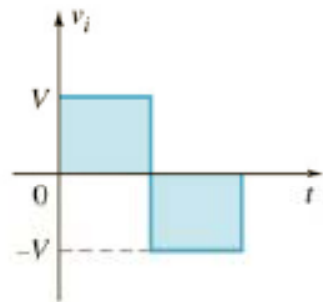
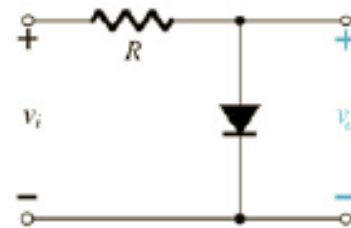
Ceifadores

Ceifador série com fonte, exemplo:



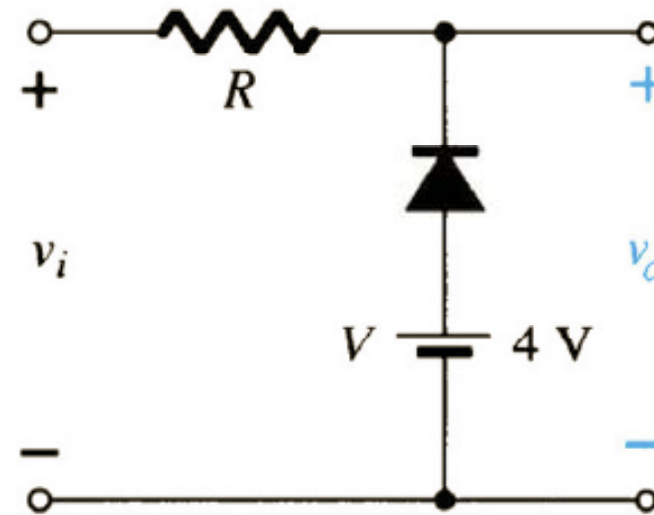
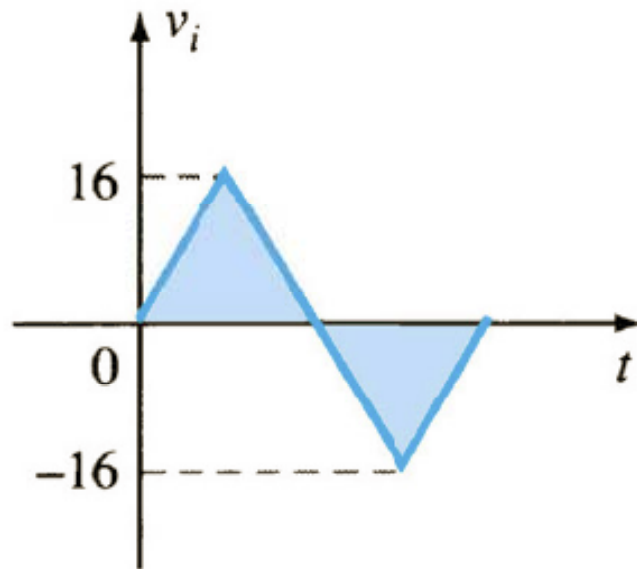
Ceifadores

Ceifador paralelo



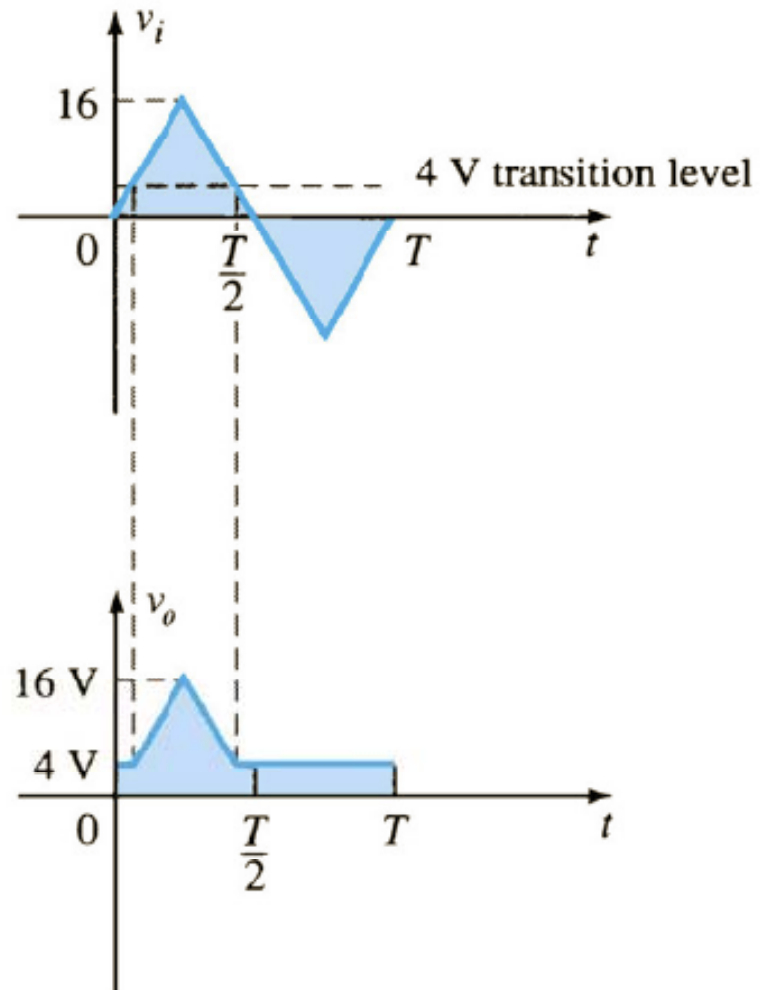
Ceifadores

Ceifador paralelo com fonte, exemplo:



Ceifadores

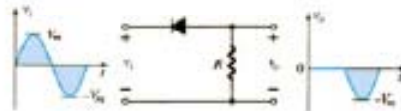
Ceifador paralelo com fonte, exemplo:



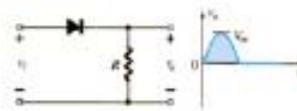
Ceifadores

Simple Series Clippers (Ideal Diodes)

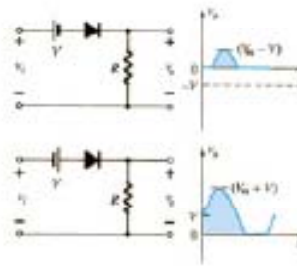
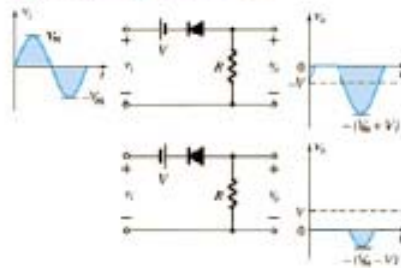
POSITIVE



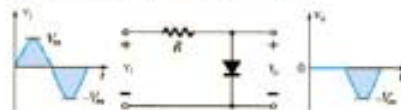
NEGATIVE



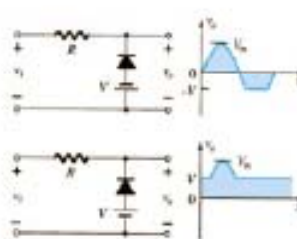
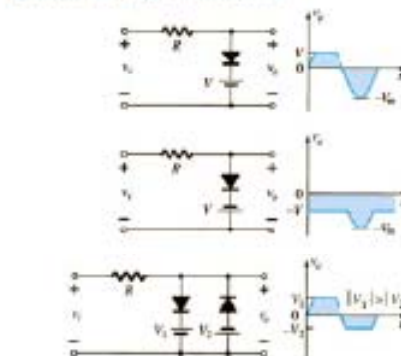
Biased Series Clippers (Ideal Diodes)



Simple Parallel Clippers (Ideal Diodes)



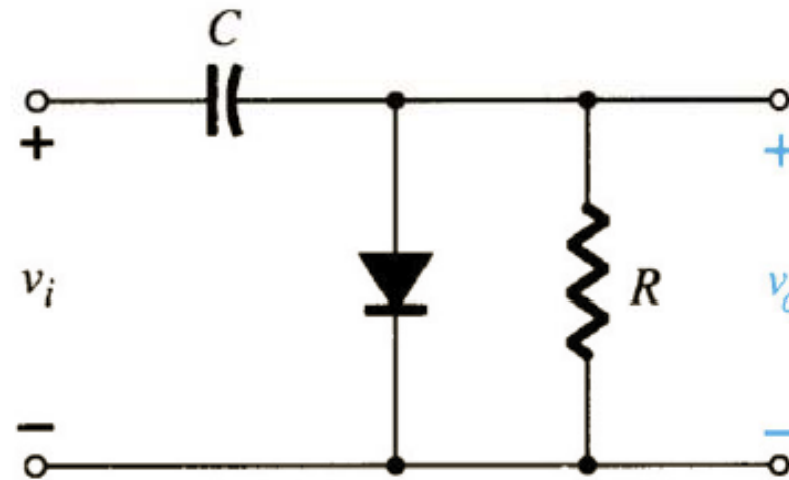
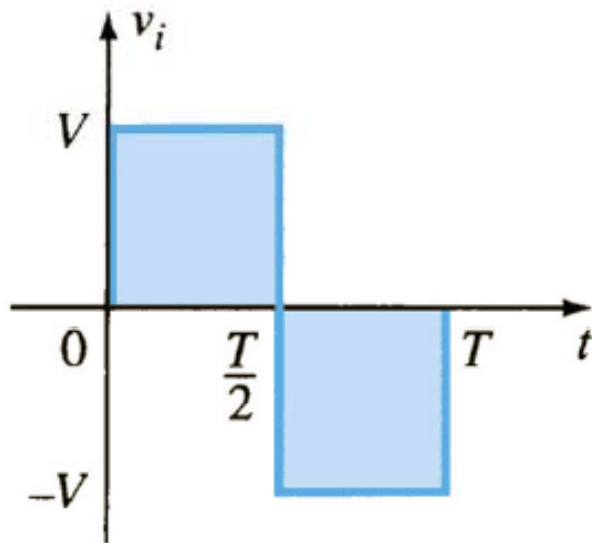
Biased Parallel Clippers (Ideal Diodes)



Grampeadores

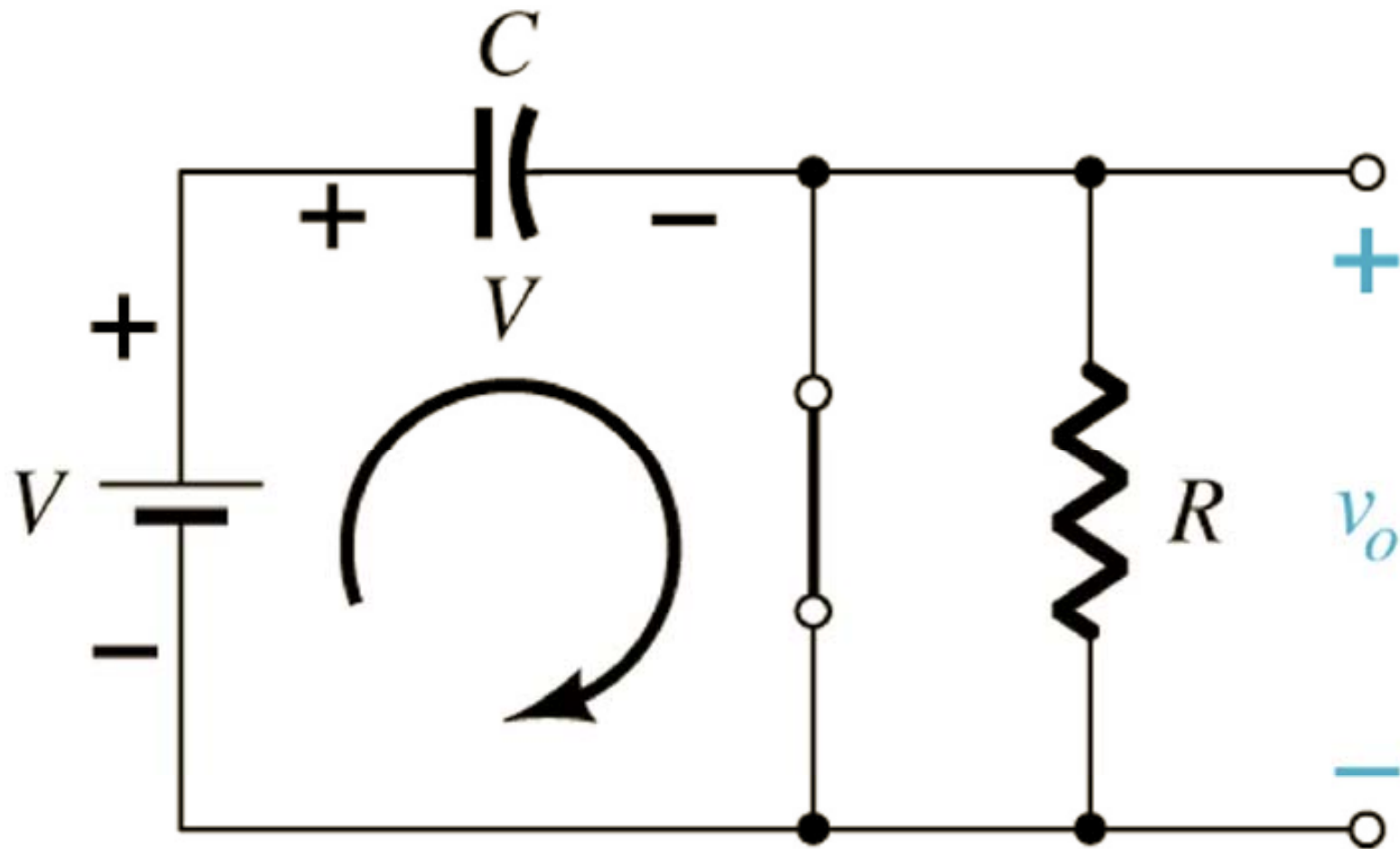
Circuitos grampeadores:

- Tem a capacidade de grampear um sinal em um valor cc diferente.



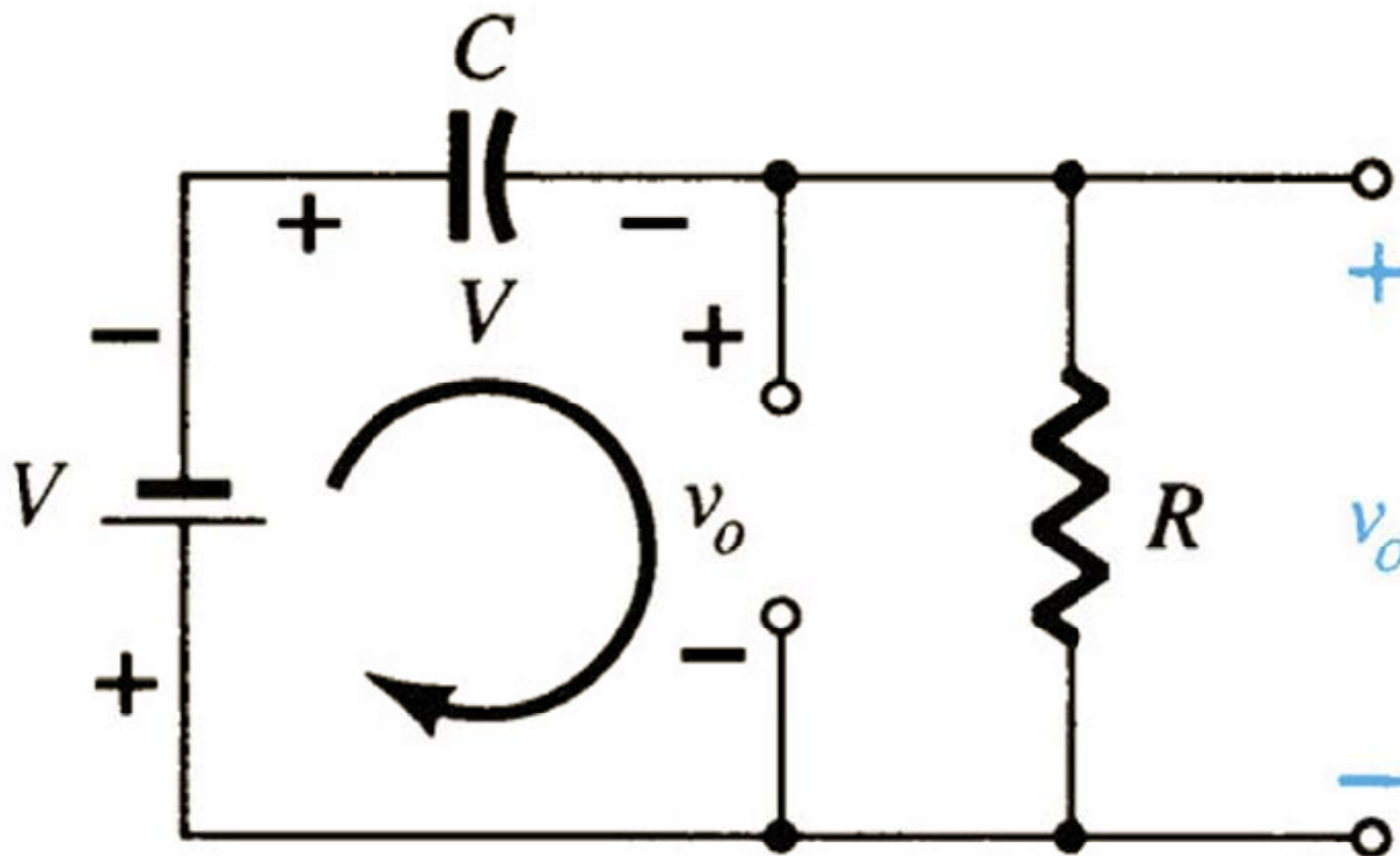
Grampeadores

Diodo em condução:

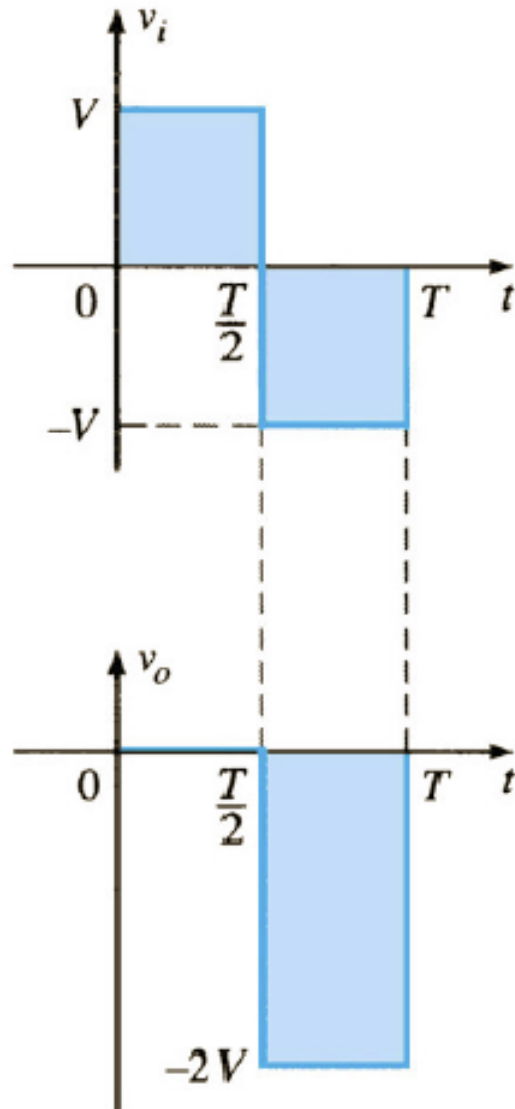


Grampeadores

Diodo bloqueado:



Grampeadores



A excursão total da saída é igual à excursão total do sinal na entrada.

Grampeadores – alguns circuitos

Clamping Networks

