circuit-invader: circuits drawn with the LaTeX's circuitikz package

A collection

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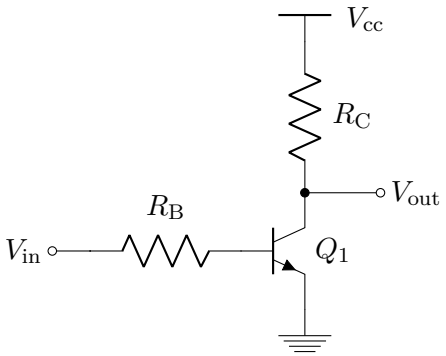
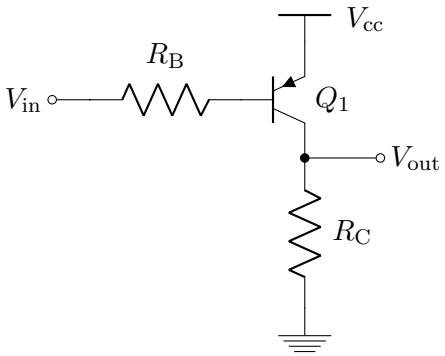
1 Bipolar-based circuits

1.1 Common emitter



(a) NPN circuit.



(b) PNP circuit.

Figure 1.1: Common emitter bipolar transistor, with direct coupling at input.

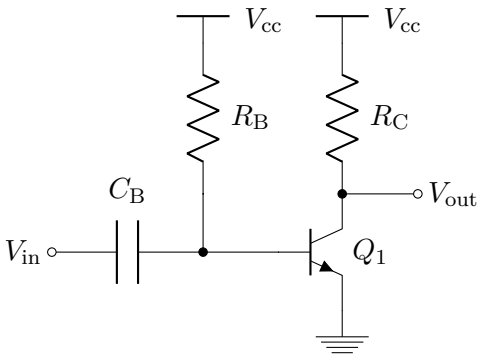
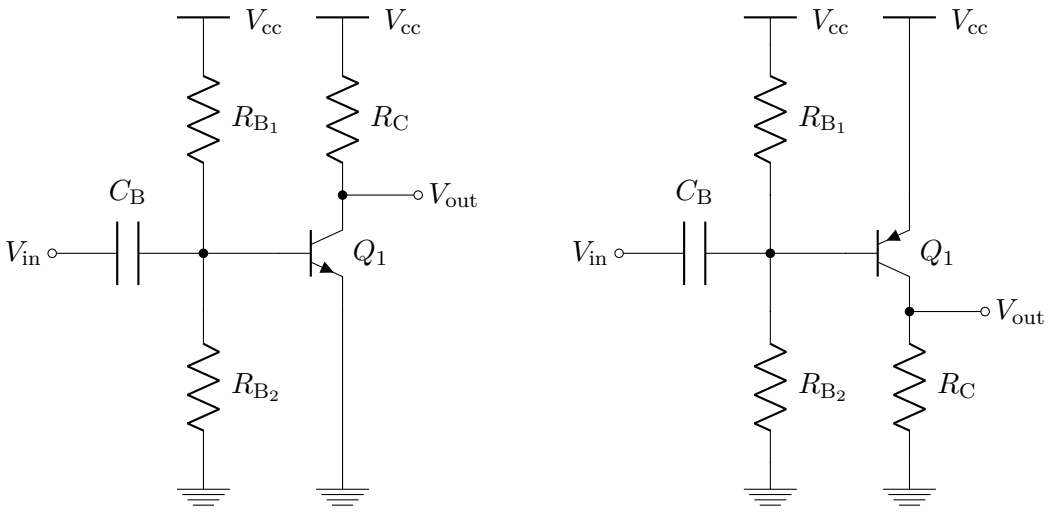


Figure 1.2: Common emitter bipolar NPN transistor polarized by current injection to the base, with capacitive coupling at input.

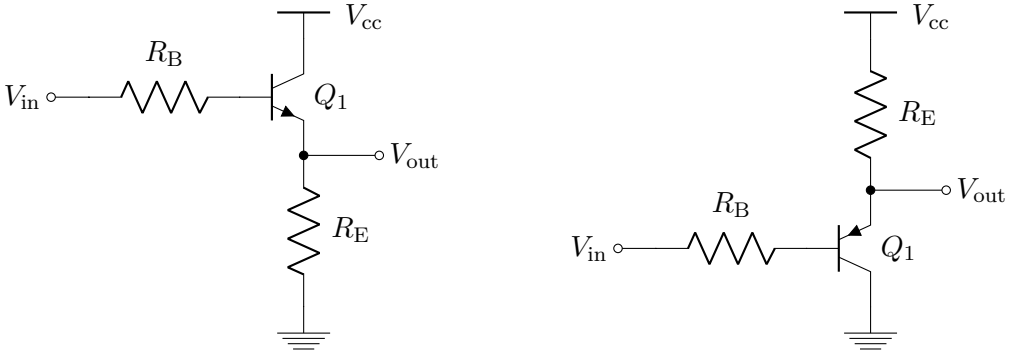
1.2 Common collector

1.3 Common base



(a) NPN circuit. (b) PNP circuit.

Figure 1.3: Common emitter bipolar transistor polarized by a resistive divider, with capacitive coupling at input.

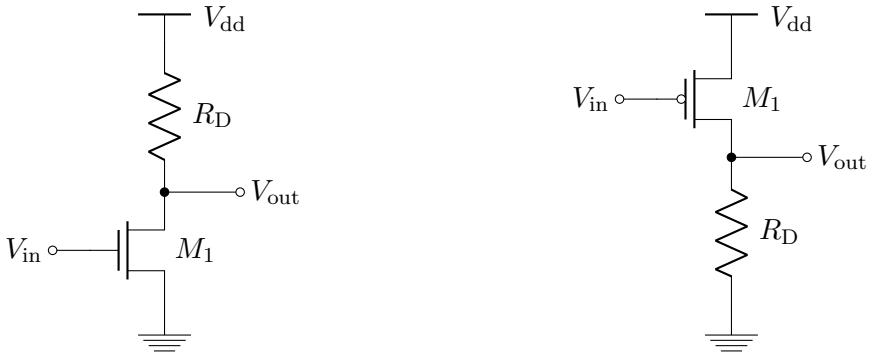


(a) NPN circuit. (b) PNP circuit.

Figure 1.4: Common collector bipolar transistor, with direct coupling at input.

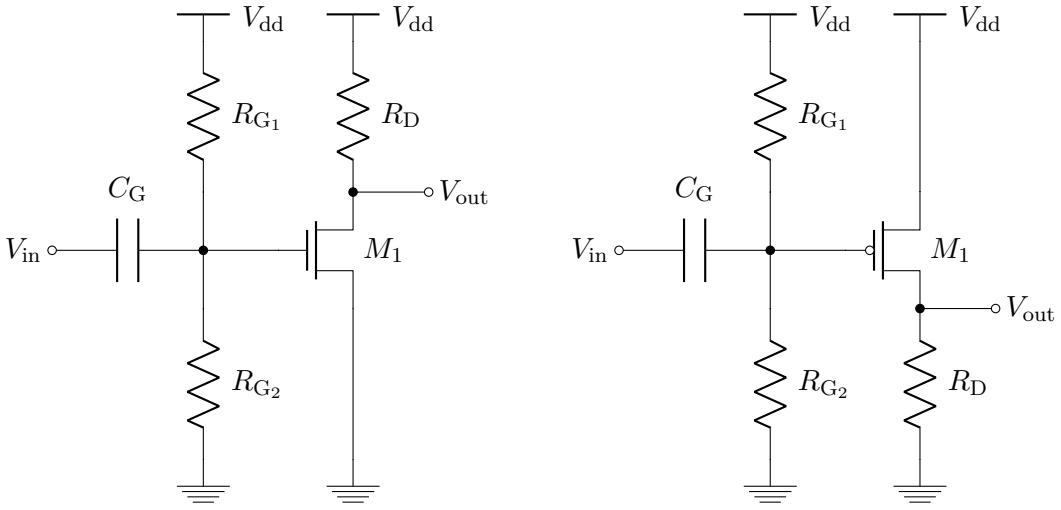
2 CMOS-based circuits

2.1 Common source



(a) NMOS circuit. (b) PMOS circuit.

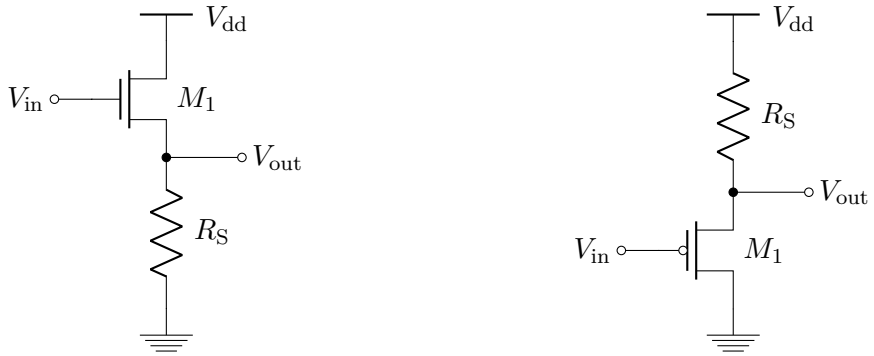
Figure 2.1: Common source CMOS transistor, with direct coupling at input.



(a) NMOS circuit. (b) PMOS circuit.

Figure 2.2: Common source CMOS transistor polarized by a resistive divider, with capacitive coupling at input.

2.2 Common drain



(a) NMOS circuit.

(b) PMOS circuit.

Figure 2.3: Common drain CMOS transistor, with direct coupling at input.

2.3 Common gate

3 Operational amplifier based circuits

3.1 Basic stages

Basic stages include:

- the follower (fig. 3.1),
- the inverting amplifier (fig. 3.2a), and
- the non-inverting amplifier (fig. 3.2b).

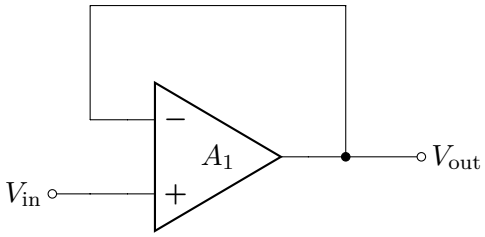
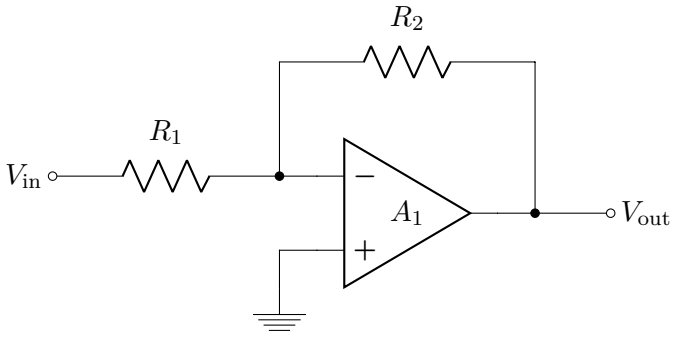


Figure 3.1: Follower amplifier.

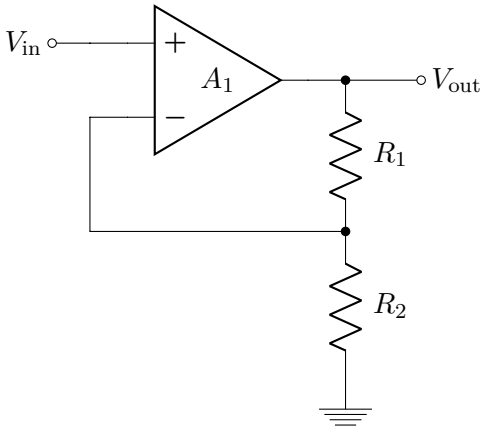
3.2 Electrical arithmetic operators

3.3 First order active filters

First order active filters include low-pass and high-pass filters, either with infinite (fig. 3.4) or limited (fig. 3.5) gain.



(a) Inverting.



(b) Non-inverting.

Figure 3.2: Amplifiers.

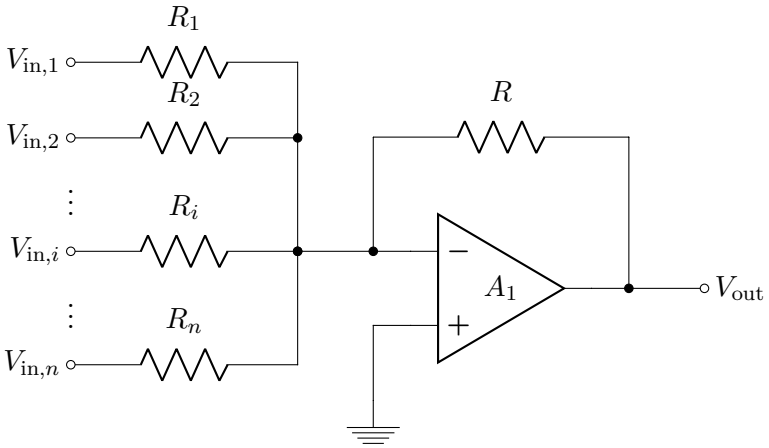
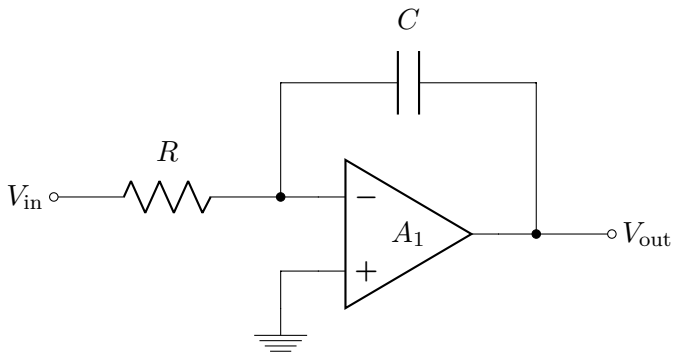
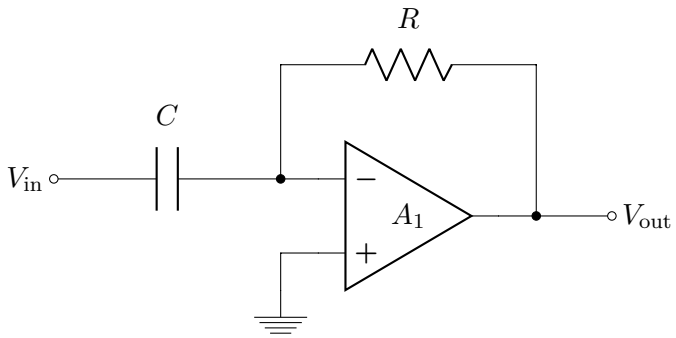


Figure 3.3: Voltage sum.

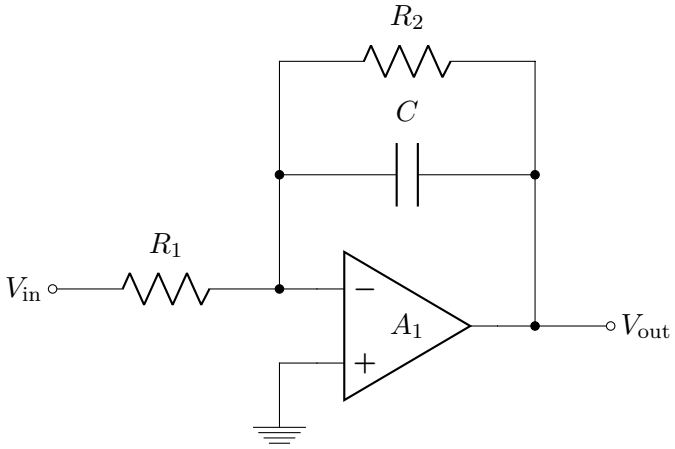


(a) Low-pass.

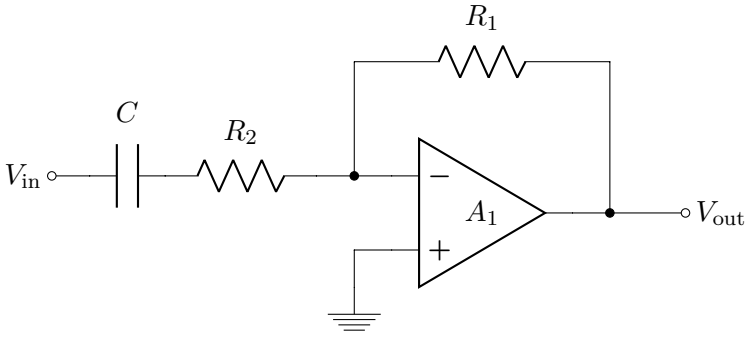


(b) High-pass.

Figure 3.4: First order active filters op amps architectures with infinite gain.



(a) Low-pass.



(b) High-pass.

Figure 3.5: First order active filters op amps architectures with limited gain.