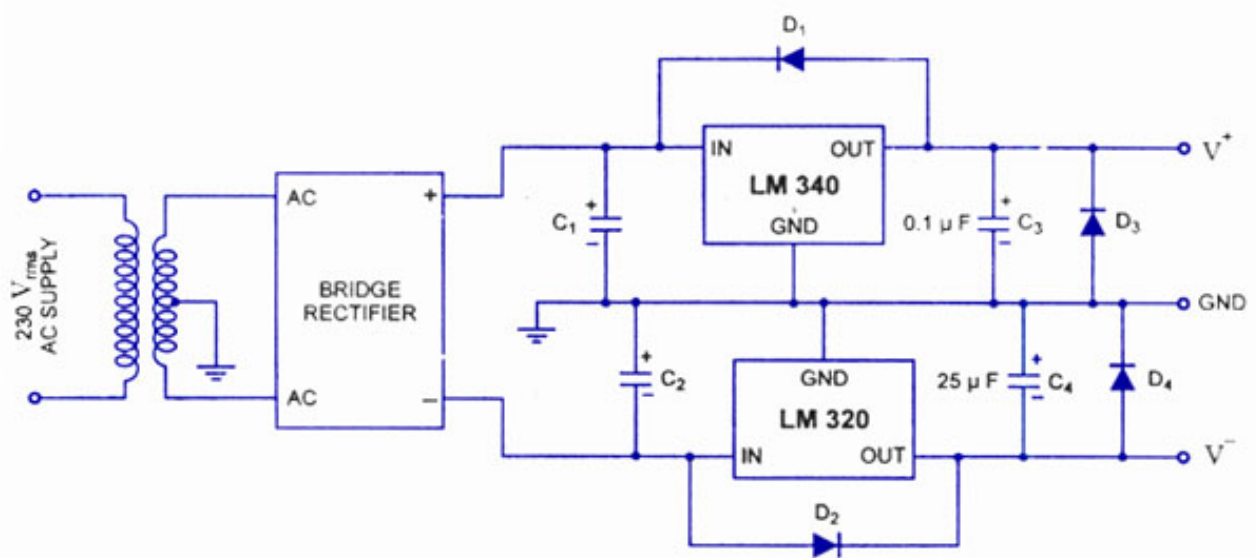


Dual Power Supply using LM 320 and LM 340



Simple Dual Power Supply

Simple Dual Power Supply

Many discrete and ICs need bipolar (dual or $\pm V$) supplies. This can be easily accomplished with two three-terminal regulators, as illustrated in figure. Opposite-phase ac is provided by the transformer's secondary and a grounded center tap. The single full-wave bridge converts these into positive and negative dc voltages (with respect to the grounded center tap). Filtering (with respect to ground) is provided by capacitors C₁ and C₂.

The LM 340 provides regulation of the positive voltage, while the LM 320 regulates the negative voltage. It is very important to mention here that LM 320 has a different pin configuration than the LM 340. The case of the LM 320 is not ground. So care is to be taken while mounting the negative regulator.

The diodes provide protection, but ensure that they are not reversed. Diodes D₁ and D₂ ensure that transients on the regulator outputs do not drive the outputs to a potential above their inputs and cause damage to the regulators. Also, the two regulators may not turn on simultaneously. If this occurs, the output of the slower regulator may be driven toward the potential of the faster one. Diodes D₃ and D₄ prevent these reverse polarities on start up.