- the HF power oscillator takes the steady DC voltage from the buffer capacitor and using semi conductor switches controlled by the ballast controller creates a high frequency square wave
- the output of the power oscillator is fed through a small HF coil that acts as a stabilisation coil to the lamp.

Figure 5.9 shows the main components in typical HF fluorescent lamp ballast

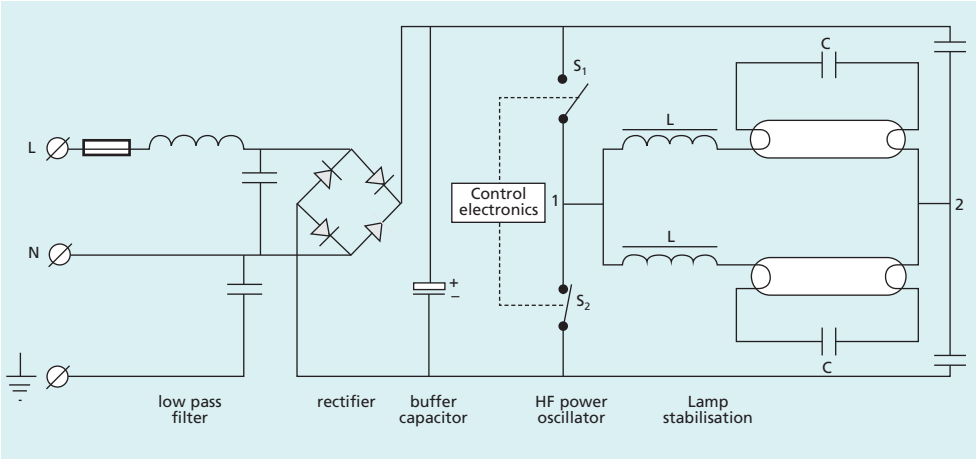

Figure 5.9 A circuit diagram of an electronic ballast for two fluorescent lamps

In some ballasts the electronics that control the power oscillator can vary the frequency at which the power oscillator runs; as the frequency increases the current passing through the coils decreases and thus it is possible to dim the lamps. Some types of ballast have a 0 to 10 volt input that is used to regulate the output while some have digital interfaces. See Section 5.2 for further information on controls.

Electronic gear for HID light sources

Making electronic control gear for HID light sources is a complex process. There are many different lamp types each with different electrical requirements and a limited range of frequencies in which they can be operated. Also many lamp types do not show a significant gain in efficiency when operated on high frequencies. For these reasons electronic control gear has been developed more slowly for HID lamps than for fluorescent lamps.

However, it is possible to gain a number of benefits from electronic gear for HID lamps. These include:

- increased lamp life
- elimination of visible flicker
- better system efficacy
- less sensitivity to mains voltage or temperature fluctuations
- the possibility of dimming with some lamp types.