

# Types of Switch Mode Power Transformers

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There are 2 types of power supply designs - linear and switching mode. Linear power are bulky but has very low noise and are suitable for medical and some low cost industrial applications. Linear power supply uses lamination transformers that operate at 50 or 60 Hz.

Switch Mode power supplies are compact, and can deliver very high power in a small size. Almost all power supply designs used today are based Switching Mode. Switch Mode power supplies used high switching frequency. The typical switching frequency in today switch mode power supplies are between 100 KHz to 300 KHz. The designs of Switch Mode power supplies are classified by the topologies used. The simplest are called the RCC ( ringing choke circuit). This is followed by flyback, forward, half bridge, full bridge, push pull, resonant, etc.

As a rule of thumb, the power level and topologies used are given below.

**Flyback:** Under 10 watts.

**Forward:** Under 500 watts.

**Half bridge:** Under 500 watts

**Full Bridge and push pull:** Over 500 watts

In a design of the switch mode power supplies, many different types of magnetic components are used. On the input side, there is the differential mode choke, common mode choke and power factor correction (PFC) choke. Then, the main power transformer, drive transformers, current sensors, auxiliary transformers, MAG AMP chokes, output chokes, etc. Please see the drawing below indicating various types of magnetics used.

HST can make all these magnetic components for you. Just send us your specifications, and we will do the rest.