Terminology

AL Value (nH/N²)
The inductance (nanohenries) of a core for 1 turn winding It is measured at peak AC flux density of 10 gauss and frequency of 10kHz. 1nH/N² = 1mH(1000turns)²

Ambient Temperature
Temperature around the devices or circuits. Ambient temperature is measured at 0.5inch(1.27cm) away from the devices or circuits.

Attenuation
Ratio of output parameter (voltage, current, power, etc.) to input parameter. Unit is [dB]. In case of power, dB is10 log (output power / input power). In case of current and voltage, dB is 20log(output current / input current), 20log(output voltage / input voltage) respectively.

Coercive Force (Hc) Refer to Hysteresis Curve.

Common-Mode Noise
Electrical interference that is common to both lines in relation to earth ground.

Copper Loss [watts]
The power loss (I^2R) or heat generated by current (I) flowing in a winding with resistance (R).

Core loss [watts]
Core loss is composed of eddy current loss, hysteresis loss and residual loss. Refer to Magnetic Design Formulae.

Cross Sectional Area (A)
The effective cross sectional area of a core available for magnetic flux. The cross sectional area listed for toroidal cores is based on bare core dimensions.

Curie Temperature, Tc [°C]
The transition temperature above which a core loses its ferromagnetic properties. Usually defined as the temperature at which μi falls to 10% of its room temperature value.

DC Resistance [Ω]
Resistance of winding when AC current is not applied.

Differential Mode Noise
Electrical interference that is not common to both lines but is present between both lines. This is also known as normal mode noise.

Disaccommodation
The proportional change of permeability after a disturbance of a magnetic material, measured at constant temperature, over a given time interval.

Distributed Capacitance
In an inductor, each winding behaves as a capacitor having the distributed capacitance. Distributed capacitance is parallel with inductance in the circuit and causes self-resonance at a certain frequency. The smaller is the magnitude of distributed capacitance of an inductor, the higher is the self-resonant frequency. So inductor should be wound to have as small distributed capacitance as possible.

Eddy Current
When a varing electric or magnetic field passes through the conducting material, current which opposes the change of field is induced in it. This current is called eddy current. As a conducting material has electric resistance, so the eddy current results in heat loss, that is, eddy current loss.

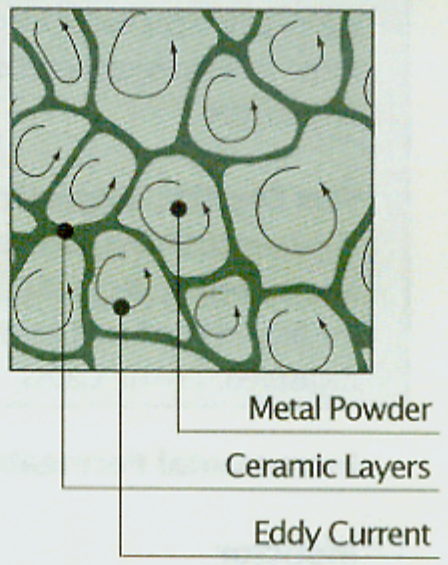

Figure 1. Eddy Current in Powder Cores

Effective Permeability (μe) Refer to Permeability.

EMI
Electromagnetic Interference is called EMI in short.
Generally, it means unnecessary electrical energies like noise.

EMC Electromagnetic Compatibility

Hysteresis Curve (B-H Loop)

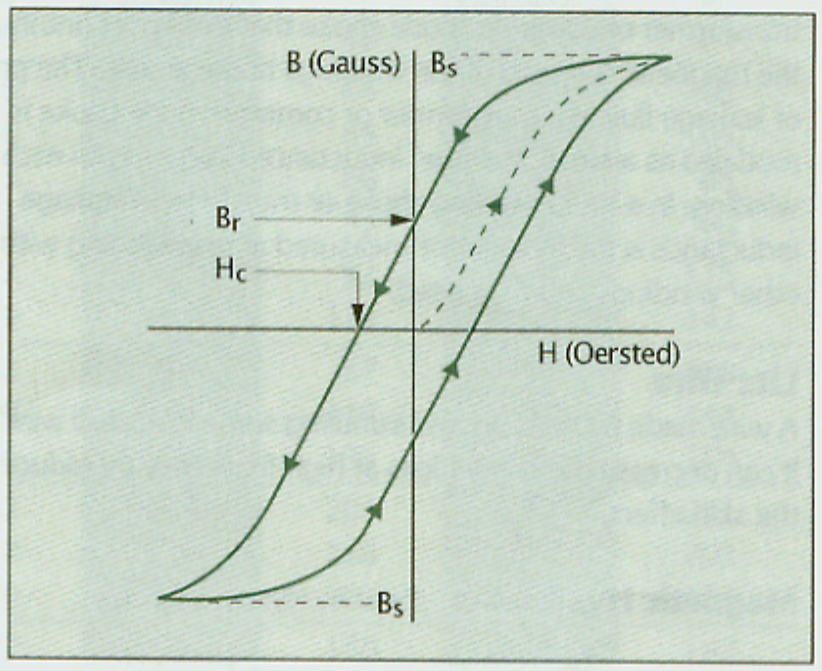

Figure 2. B-H Loop

When the magnetic material is taken through a complete cycle of magnetization and demagnetization, magnetic flux density in that material behaves irreversibly according to change of magnetizing force.

The results are as shown in Figure 2. As H is increased in the neutral magnetic material, flux density B increases along the dashed line (initial magnetization curve) to the saturation point, Bs.