

What is Inductance?

Inductance (L) is the property of an electrical circuit whereby changes in current flowing in the circuit produces changes in the magnetic field such that a counter EMF is set up in that circuit or in neighboring ones. If the counter EMF is set up in the original circuit, it is called self-inductance and if it is set up in neighboring circuit it is called mutual inductance.

The unit of inductance is the Henry (H) and is defined as that value of inductance in which an induced EMF of one volt is produced when the inducing current is varied at the rate of one ampere per second. The henry is commonly sub-divided into several smaller units, the milliHenry (10^{-3} Henry) abbreviated mH, the microHenry (10^{-6} Henry) abbreviated μ H, and the nanoHenry (10^{-12} Henry) abbreviated nH.

The storage of energy in a magnetic field is expressed in joules and is equal to $LI^2/2$ and the dimensions are in watt-seconds