

DEFINITION OF TERMINOLOGY

L is in henries and f is in hertz. This equation indicates that higher impedance levels are achieved by higher inductance values or at higher frequencies. Skin Effect and Core Losses also add to the impedance of an inductor. (Also see Skin Effect and Core Losses.)

L的單位為亨利而f的單位為赫茲，此方程式說明一較高的阻抗值可由較高的電感值或在較高的頻率下得到，此外，肌膚效應及鐵損亦會增加一電感的阻抗值，(亦參閱表肌膚效應及鐵損)。

■ IMPEDANCE ANALYZER(阻抗分析儀)

Test instrument capable of measuring a wide range of impedance parameters, gain and phase angle. In testing inductors, impedance analyzers can measure inductance, Q, SRF, insertion loss, impedance and capacitance. They operate in a much more automatic fashion in comparison to Q Meters. Some impedance analyzers have a wider test frequency range than a Q meter.

一測試儀器能夠測量一範圍之阻抗參數，增益及相位角，用於量測電感，阻抗分析儀可量取電感值，品質係數，共振頻率，插入損失，阻抗值及電容值，較之品質係數儀，其操作是較為自動化的，部份之阻抗分析儀亦有比品質係數儀有較大的量測頻率範圍。

■ INCREMENTAL CURRENT(增量電流)

The DC bias current flowing through the inductor which causes an inductance drop of 5% from the initial zero DC bias inductance value. This current level indicates where the inductance can be expected to drop significantly if the DC bias current is increased further. This applies mostly to ferrite cores in lieu of powdered iron. Powdered iron cores exhibit "soft" saturation characteristics. This means their inductance drop from higher DC levels is much more gradual than ferrite cores. The rate at which the inductance will drop is also a function of the core shape. (Also see Saturation Current.)

指一流經電感的直流偏壓電流，而使得電感值較初始無直流偏壓下之電感值下降5%，這個電流強度說明電感值在持續增加的直流偏壓下將急速的下降，這適用於大部分用來代替粉狀鐵的鐵氧磁體，粉狀鐵之鐵芯具有“軟性”的飽和特性，意思是指在較高的直流偏壓下，其電感值的下降較鐵氧磁體來的緩和，同時，電感值下降的速率亦和鐵芯的形狀有關，(亦參閱飽和電流)

■ INDUCTANCE(電感值)

The property of a circuit element which tends to oppose any change in the current flowing through it. The inductance for a given inductor is influenced by the core material, core shape and size, the turns count and the shape of the coil. Inductors most often have their inductances expressed in microhenries (μH). The following table can be used to convert units of inductance to microhenries. Thus, 47mH would equal 47,000 μH .

一電路之特性，能抑制流經之電流的改變，一電感之電感值會受鐵芯之材質，鐵芯之形狀及尺寸，繞線的圈數及線圈的形狀所影響，通常用來表示一電感的電感值，電感值的單位為微亨利 (μH)，下列的表格可以用來將電感值的單位換算成微亨利，如此，47mH既等於47,000 μH 。

1 henry(H) = $10^6 \mu H$
 1 millihenry(mH) = $10^3 \mu H$
 1 microhenry μH = $1 \mu H$
 1 nanohenry(nH) = $10^{-3} \mu H$

■ INDUCTANCE TOLERANCE(電感值公差)

Standard inductance tolerances are typically designated by a tolerance letter. Standard inductance tolerance letters include:
 (Also see color Codes.)

標準的電感值公差通常以一公差字母來表示，其字母包含(亦參閱色碼):

Letter	Tolerance
F	$\pm 1\%$
G	$\pm 2\%$
J	$\pm 5\%$
K	$\pm 10\%$
L	$\pm 15\%$
M	$\pm 20\%$
S	$\pm 25\%$

■ INDUCTOR(電感器)

A passive component designed to resist changes in current. Inductors are often referred to as "AC Resistor" The ability to resist changes in current and the ability to store energy in its magnetic field, account for the bulk of the useful properties of inductors. Current passing through an inductor will produce a magnetic field. A changing magnetic field induces a voltage which opposes the field-producing current. This property of impeding changes of current is known as inductance. The voltage induced across an inductor by a change of current is defined as:

一種被動元件，其作用在抑制電流的變化，電感亦常被稱為“交流電阻”，其抑制電流變化的功能及以磁場儲存能量的能力是電感器主要的特性，電流流經一電感器時會產生磁場，而磁場的變化會在產生電流的反方向感應一電壓，這種抑制電流變化的特性被稱為電感值，由一電流變化而在電感器兩端產生感應的電壓可被定義成:

$$V = L di/dt$$

Thus, the induced voltage is proportional to the inductance value and the rate of current change. (Also see inductance.)

如此，感應電壓正比於電感值及電流變化速率。