

DEFINITION OF TERMINOLOGY

■ COLOR CODES(色碼)

Inductors color codes have been standardized. The color marks or bands represent the inductor's value and tolerance. Following is a table that translates the colors and numbers.

電感的色碼是標準化的，其色標或色帶代表電感的值或公差，以下表格列出顏色及其代表之數字。

Color	Significant Figures or Decimal Point	Multiplier	Inductance Tolerance
Black	0	1	--
Brown	1	10	±1%
Red	2	100	±2%
Orange	3	1000	±3%
Yellow	4	10,000	±4%
Green	5	--	--
Blue	6	--	--
Violet	7	--	--
Gray	8	--	--
White	9	--	±20%
Silver	--	--	±10%
Gold	--	--	±5%

■ COMMON-MODE NOISE(共模雜訊)

Noise or electrical interference that is common to both electrical lines in relation to earth ground.

在與接地相關之電路上發生的雜訊或電氣干擾。

■ COPPER LOSS(銅損)

The power lost by current flowing through the winding. The power loss is equal to the square of the current multiplied by the resistance of the wire (I^2R). This power loss is transferred into heat.

電流流經線圈所產生之能量損失，此能量損失等於電流大小的平方乘上線圈的電阻(I^2R)，這些能量損失轉換成熱能。

■ CORE LOSSES(鐵損)

Core losses are caused by an alternating magnetic field in the core material. The losses are a function of the operating frequency and the total magnetic flux swing. The total core losses are made up of three main components: Hysteresis, eddy current and residual losses. These losses vary considerably from one magnetic material to another. Applications such as higher power and higher frequency switching regulators and RF Designs require careful core selection to yield the highest inductor performance by keeping the core losses to a minimum.

鐵損是由於在鐵芯中的變更磁場所造成，這個損失與操作頻率及總流動的磁通量有關，總鐵損由三個成份組成，磁滯損，渦流損及殘留損。這些損失因磁性材料不同而異，在如高功率及高頻率切換調整器和RF的設計需要小心選擇鐵芯種類以降低鐵損使電感的表現最佳。

■ CURIE TEMPERATURE(居禮溫度)

The temperature above which a ferrite core loses its magnetic properties. The core's permeability typically increases dramatically as the core temperature approaches the curie temperature which causes the inductance to increase. The permeability drops to near unity at the curie temperature which causes the inductance to drop dramatically. The curie point is the temperature at which the initial permeability has dropped to 10% of its original value at room temperature.

在此一溫度以上鐵氧磁體鐵芯失去磁性質，鐵芯的磁導率一般在接近居禮溫度時會急速上升因而電感值亦上升，於居禮溫度時，導磁率約降至1，因而使電感值急速下降，當初導磁率下降為在室溫下之初導磁率的10%時，其溫度稱之為居禮溫度。

■ DC - DC CONVERTER(直流-直流轉換器)

A circuit or device that converts a DC input voltage to a regulated output voltage. The output voltage may be lower, higher or the same as the input voltage. Switching regulator DC-DC circuit most often require an inductor or transformer to achieve the regulated output voltage.

Switching regulator circuits can achieve a higher level of power efficiency when compared to non-switching techniques.

指一電路或儀器可將一直流輸入電壓轉換成一調整過的輸出電壓，此輸出電壓可為較低，較高或與輸入電壓相同，交互式直流對直流調整電路通常需要一電感或變壓器以達到所要之輸出電壓，交換式調整電路較之非交換式技術，有較高之功率效率。

■ DCR (DC RESISTANCE)(直流電阻)

The resistance of the inductor winding measured with no alternating current. The DCR is most often minimized in the design of an inductor. The unit of measure is ohms, and it is usually specified as a maximum rating.

電感器的線圈本身在非交流電下量得之電阻，在電感設計中，直流電阻愈小愈好，其量測單位為歐姆，通常以其最大值為標註。

■ DIFFERENTIAL-MODE NOISE(差模雜訊)

Also known as normal-mode noise, it is electrical interference that is not common to both electrical lines but present between both electrical lines.

亦稱之正常模式雜訊，些種電氣干擾並非發生在電路中而是在電路與電路之間。