一般信息 General Information

重要術語解釋 Explanation of Important Terminology

■ 標稱容值

電容器的標稱容值通常以 pF, nF 或 μF 表示。

■ Nominal Capacitance

The nominal capacitance of a capacitor is usually given in pF, nF or μF.

■ 工作/額定電壓

在下限類別溫度和額定溫度之間的任一溫度下，
可以連續施加在電容器上的最大直流電壓或脈衝電壓的峰值。
這通常僅適用於環境溫度 T ≤ + 85℃，在溫度較高的情況下，
高於 + 85℃，必須對額定電壓套用降額因素。

■ Operating/Rated Voltage (U_R)

The maximum D.C. voltage or peak value of pulse voltage that can be applied continuously to capacitor at any temperature between lower category temperature and rated temperature. This is usually only valid for ambient temperatures of T ≤ + 85℃.
In the case of higher temperatures a derating factor must be applied to the rated voltage from 85℃.

■ 損耗因素 (tanδ)

在規定頻率的正弦波電壓作用下，電容器的損耗功率除以
電容器的無功功率。

■ Dissipation factor (tanδ)

The dissipation factor is ratio between reactive power of the impedance of the capacitor and effective power when capacitor is submitted to a sinusoidal voltage of specified frequency.

■ 絕緣電阻 (I.R.) / 時間常數 (t)

絕緣電阻为電容器充電一分鐘後所加的直流電壓和流經電容器的漏電流值的比值，單位為 MΩ。時間常數為絕緣電阻和電容量的乘積，通常以秒表示。
公式如下：

$$t[s] = I.R.[M\Omega] \times C_N\ [\mu F]$$

一般情況下，絕緣電阻用於描述小容量電容器的絕緣特性，
時間常數用於描述大容量(C_N> 0.33μF)電容器的絕緣特性。

■ Insulation Resistance (I.R.) / Time Constant (t)

The insulation resistance is the ratio between an applied D.C. voltage and the resulting leakage current after a minute of charging. It is expressed in MΩ. The time constant is expressed in seconds with the following formula:

$$t[s] = I.R.[M\Omega] \times C_N\ [\mu F]$$

In general, Insulation resistance is used for describing smaller capacitance capacitors' insulation character, Time Constant for describing larger one's (C_N> 0.33μF).

■ 氣候類別

電容器所屬的氣候類別用斜線分隔的三個數来表示。

例如：55/100/56
下限類別溫度 (-55℃)
上限類別溫度 (+100℃)
穩態濕熱實驗的天數 (56天)

■ Climatic category

The climatic category which the capacitor belongs to is expressed in three numbers separated by slashes,
For example: 55/100/56
The lower category temperature (-55℃)
The upper category temperature (+100℃)
Days relevant to the damp heat test (56 days)

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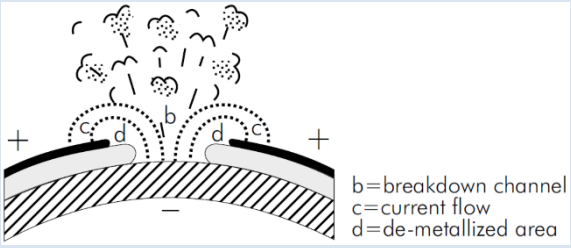
重要術語解釋 Explanation of Important Terminology

■ 自愈性

金屬化膜的金屬鍍層是通過真空蒸發的方法將金屬沈積在薄膜上，厚度只有幾十個納米，當介質上存在弱點、雜質時，局部電擊穿就可能發生，電擊穿處的電弧放電所產生的能量足以使電擊穿點鄰近處的金屬鍍層蒸發，使擊穿點與周圍極板隔開，電容器電氣性能即可恢復正常。



■ Self-healing

The metal coatings of the metallized film, which are vacuum-deposited directly onto the plastic film, have a thickness of only several tens nm. At weak points or impurities in the dielectric, a dielectric breakdown would occur.
The energy released by the arc discharge in the breakdown channel is sufficient to totally evaporate the thin metal coating in the vicinity of the channel.
The insulated region thus resulting around the former faulty area will cause the capacitor to regain its full operation ability.

■ 容量溫度系數

溫度系數 a 表示容量隨溫度的變化率，相對於 20℃ 時的電容量為參考，通常以 ppm 每 ℃ 表示。

$$C_T = C_{20} \times [1 + a \times (T - 20℃)]$$

C_{20} = 電容器在 20℃ 時的容量
C_T = 電容器在溫度 T 時的容量
a = 可以是正值或負值

■ Temperature Coefficient of Capacitance

The temperature coefficient a expresses the change in capacitance with temperature, relative to the capacitance at the reference temperature of + 20℃ ; it is usually expressed in ppm per ℃.

$$C_T = C_{20} \times [1 + a \times (T - 20℃)]$$

C_{20} = capacitance at +20℃
C_T = capacitance at T
a = may be positive or negative.

■ 脈衝上升時間 (dV/dt)

脈衝上升時間，決定了電容器承受快速電壓變化，引起的大電流峰值的能力。
峰值電流定義公式如下：

$I_P(A) = C(\mu F) \times dV/dt\ (V/\mu s)$

■ Pulse rise time (dV/dt)

The pulse rise time defines the capability of a capacitor to withstand high current peaks due to fast voltage changes.
The peak current is defined by the following formula:

$I_P(A) = C(\mu F) \times dV/dt\ (V/\mu s)$