Life Calculation for Rubycon capacitors
Rubycon 電容的壽命計算

$$L = Lb \times 2^{\frac{T\,max - Ta}{10}} \times 2^{B - \frac{\Delta Tj}{10 - 0.25 \times \Delta Tj}}$$

By Ta (Ambient Temp.) 環境溫度
Based on Arrhenius's law
根據阿累尼烏斯准則

By ΔTj (Heat rise by Ripple current)
Based on experimental confirmation
根據實驗數據統計得出

L : Life expectancy at the actual use **實際使用的預期壽命**
Lb : Basic life at max. temperature with ripple (Specified lifetime)
最高溫度和額定紋波電流時基本壽命
Tmax : Maximum operating temperature **最高工作溫度**
Ta : Actual operating temperature**實際工作溫度**
ΔTj : Heat rise by ripple current **紋波電流引起的溫升**

$$\Delta Tj = \Delta Tjo \times \left(\frac{I / F}{Io} \right)^2$$

ΔTjo : Heat rise by rated ripple current **額定紋波電流引起的溫升**
I : Actual ripple current **實際工作時紋波電流**
Io : Rated ripple current **額定紋波電流**
F : Frequency coefficient **頻率系數**

B : Constant by series **系列常數**

85deg.C type: C=1.205 130deg.C type: C=0.606
105deg.C type: C=0.571 USP, USR, USC, USG series: C=1.205