

### Shelf life

Shelf life is where the electrolytic capacitor is stored dormant, either within equipment, or individually. Time, humidity and temperature will have an effect on a dormant capacitor where the leakage current will slowly increase over time without voltage present. A reversal of the aging process will occur as a chemical change will occur. As such, re-aging will be required before use. For how long you can leave a capacitor on the shelf at what temperature is shown in figure 10.

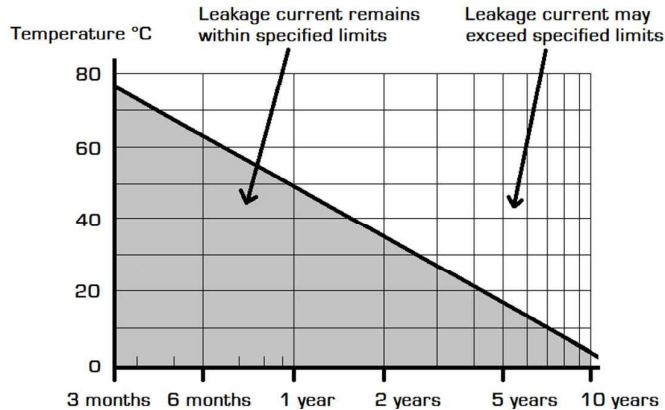


Figure 10

In a typical warehouse, the shelf life should be a minimum of 2 years. Beyond this, the leakage current may exceed the limits. If re-aging is required then this needs to be completed at room temperature. Connect a voltage supply equal to the rated voltage, but current limited to a value equal to the specified leakage limit of the capacitor. Anything from 1 to 4 hours may be required to re-age depending on the initial condition. Care should be taken when re-aging with high voltages.

### Voltage Deration

Voltage deration is the operation of an electrolytic capacitor below its rated voltage. This may occur through personal choice based on 'best practise' or through mandated requirements of the end market. How voltage deration works is shown in Figure 11.

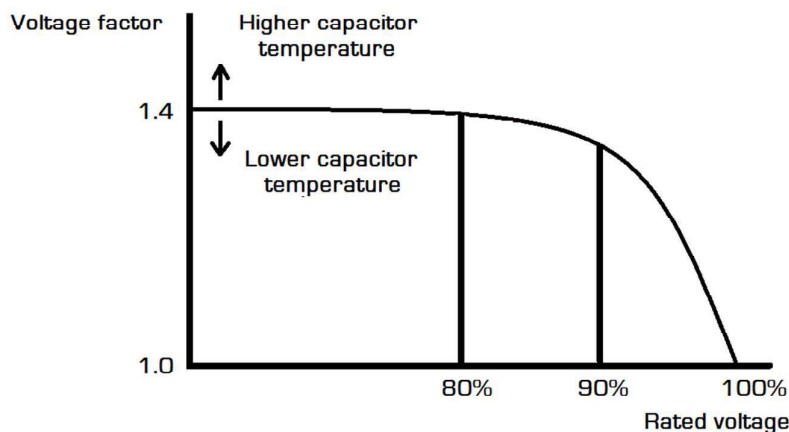


Figure 11

From the figure 11, you can see that you do not gain any further benefit from derating the capacitor below 80% of the rated voltage. Voltage factor has more effect at higher capacitor temperatures and is a parameter that is included in an expected life calculation. The 1.4 value represents a 40% increase in expected life.

