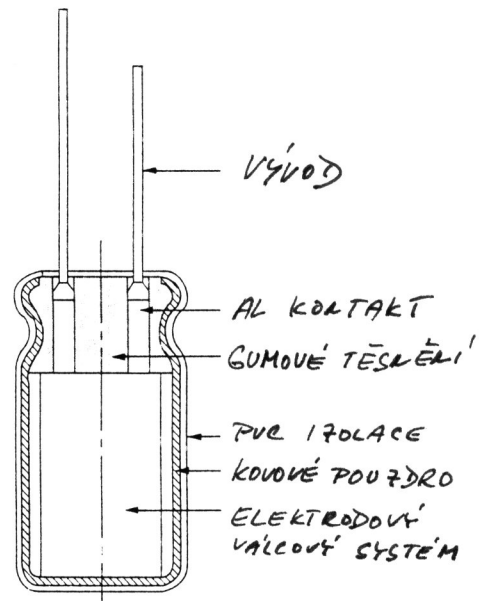
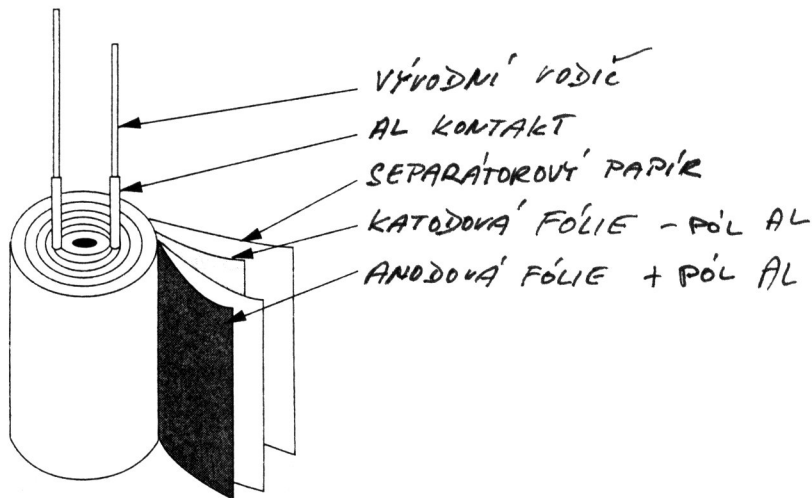
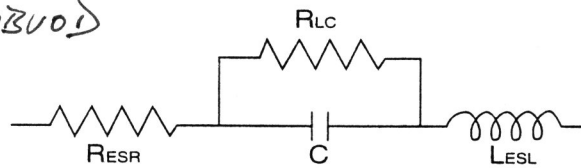


# ELEKTROLYTICKÉ KONDENZÁTORY

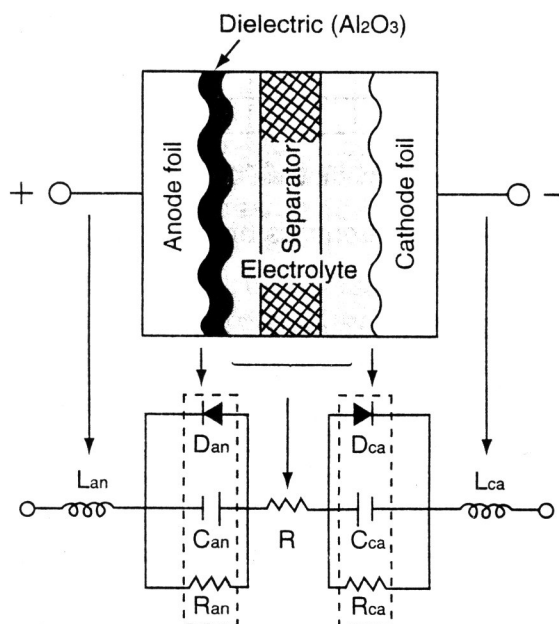


ANÓDOVÁ FÓLIE S OXIDEM HLINÍKU -  $Al_2O_3$   $\Rightarrow$  MÁ USMĚRNŮJÍCÍ SCHOPNOSTI

EKVIVALENTNÍ OBVOU

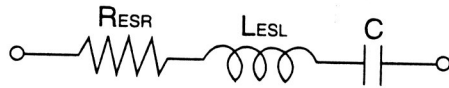


$R_{ESR}$  = Equivalent series resistance (ESR)  
 $R_{LC}$  = Resistance due to leakage current  
 $C$  = Capacitance  
 $L_{ESL}$  = Equivalent series inductance



$C_{an}, C_{ca}$  = Capacitance due to anode and cathodes foils  
 $R$  = Resistance of electrolyte and separator  
 $R_{an}, R_{ca}$  = Internal resistance of oxide layer on anode and cathode foils  
 $D_{an}, D_{ca}$  = Diode effects due to oxide layer on anode and cathode foils  
 $L_{an}, L_{ca}$  = Inductance due to anode and cathode terminals

# TRA'TOUY ČIATEL $\tan \delta$

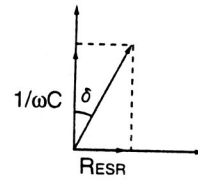


$$\tan \delta = \text{RESR} / (1/\omega C) = \omega C \text{ RESR}$$

Where:  $\text{RESR} = \text{ESR}$  at 120Hz

$$\omega = 2\pi f$$

$$f = 120\text{Hz}$$



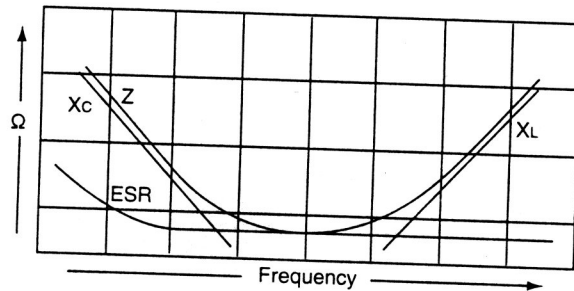
## IMPEDANCE

$$Z = \sqrt{\text{ESR}^2 + (X_L - X_C)^2}$$

Where:  $X_C = 1/\omega C = 1/2\pi f C$

$$X_L = \omega L = 2\pi f L$$

$$\begin{aligned} f_g \ 0^\circ &= 0 \\ f_g \ 95^\circ &= 1 \\ f_g \ 90^\circ &= \infty \end{aligned}$$



Impedance VS. Frequency

- ESR
- KAPACITA
- TEPLOTA
- PIVOTNOST

STANDARD 25°C  
105°C  
125°C

2000hod Standard  $\approx$  3mice  
5000hod  $\Rightarrow$  7mice

1rok = 8760hod

- při max t = 105°C

- při t = 50°C  $\Rightarrow$  676000hod  $\approx$  80let