



# Elektrotechnika i elektronika

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V2021/1

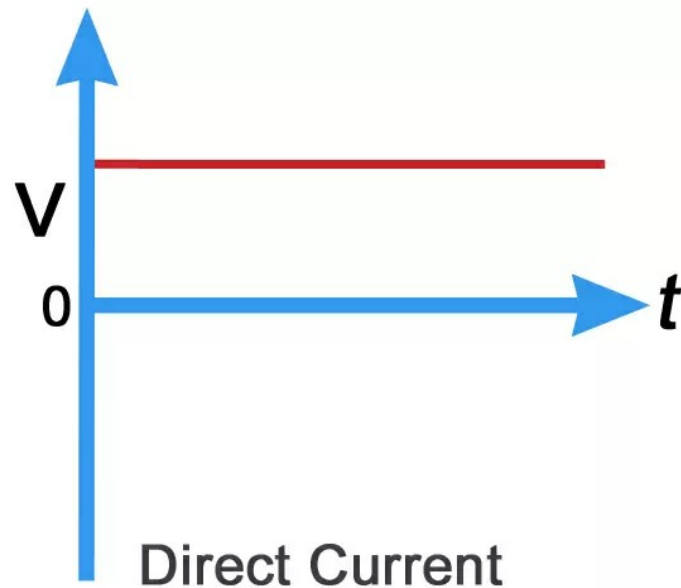
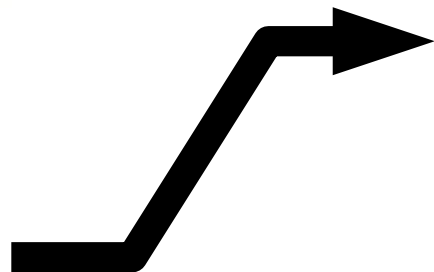
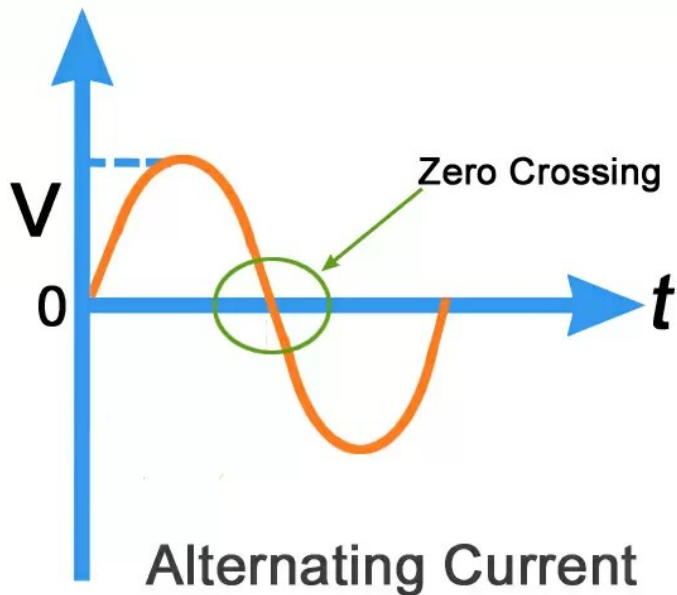
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# Moduł dygresyjny

- Prostownik
- Kondensatory

# Prostownik



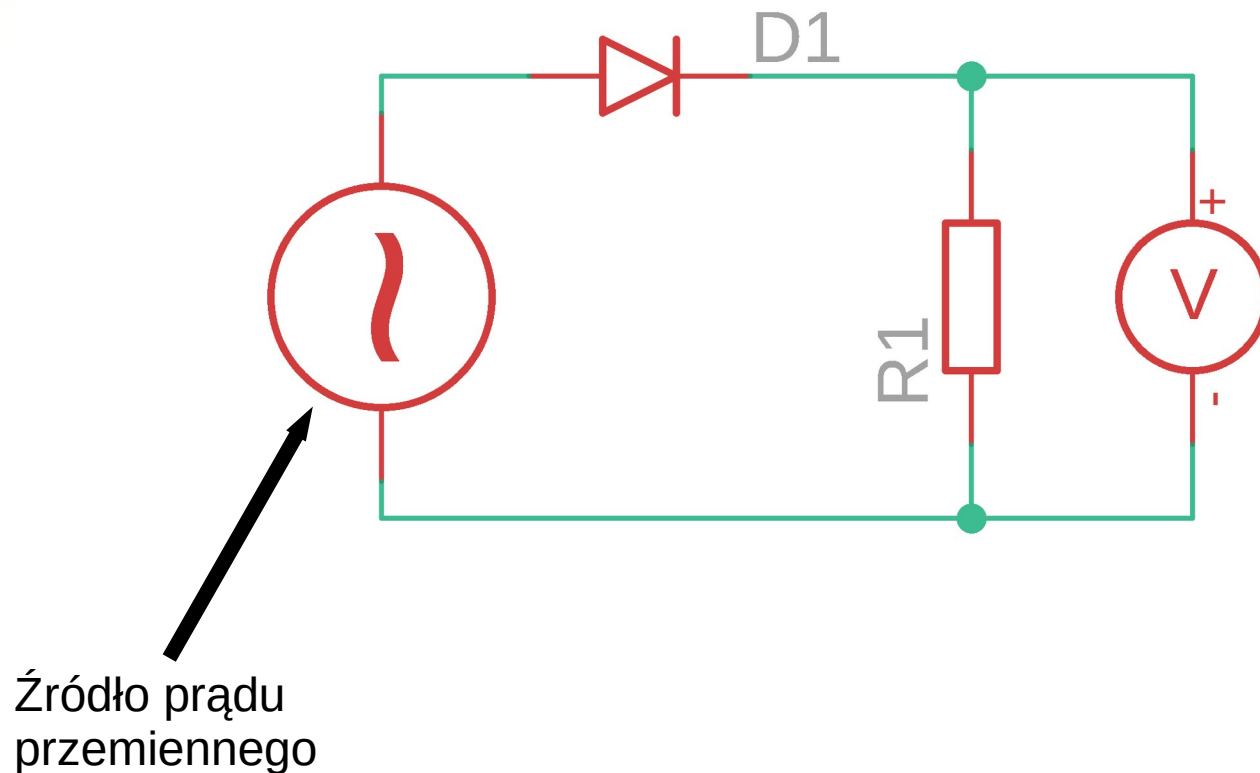
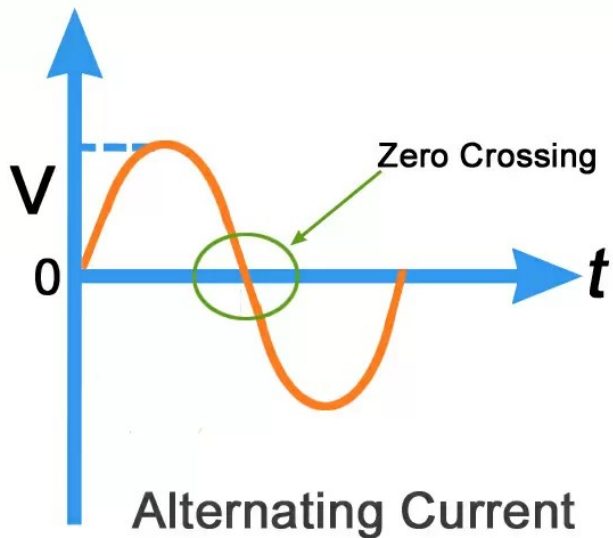
Prąd przemienny



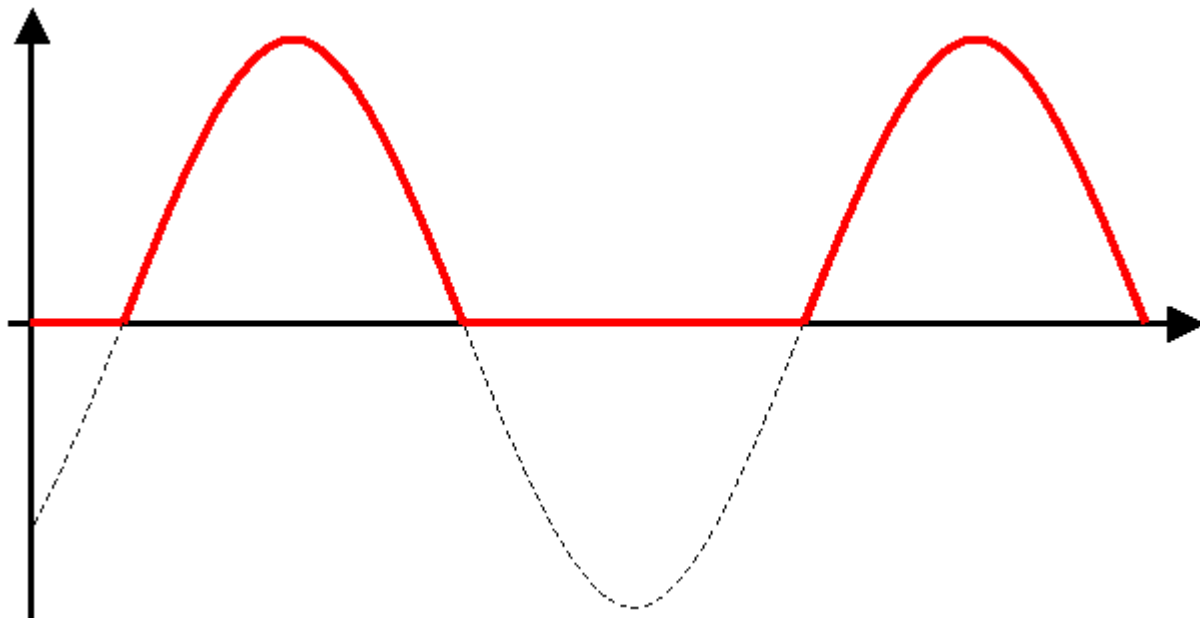
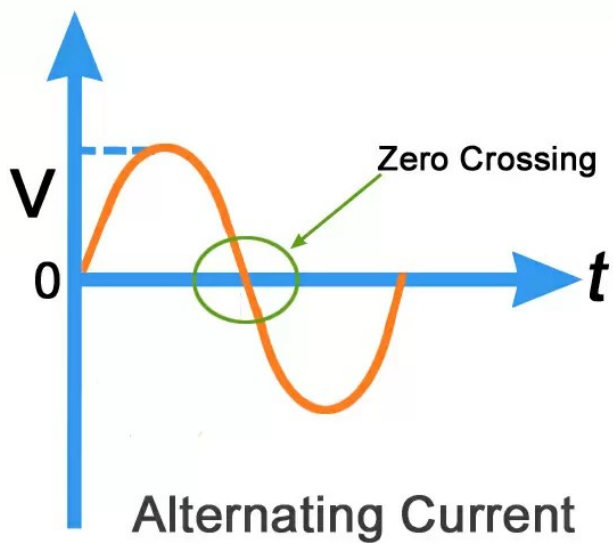
Prąd stały



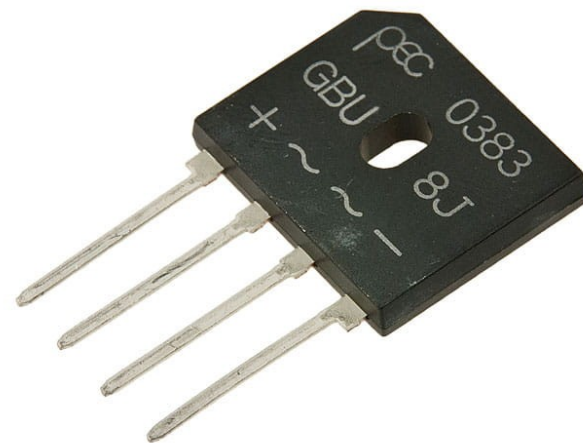
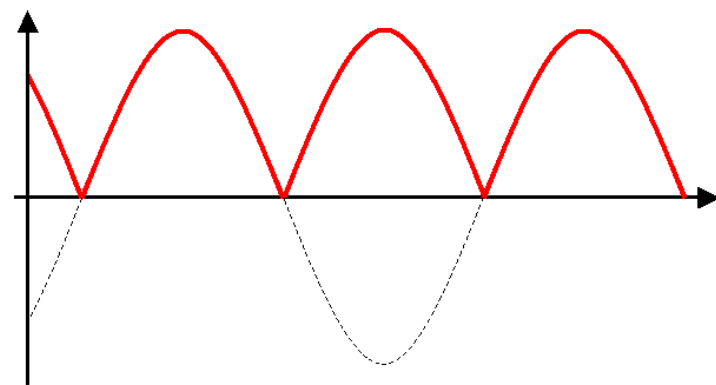
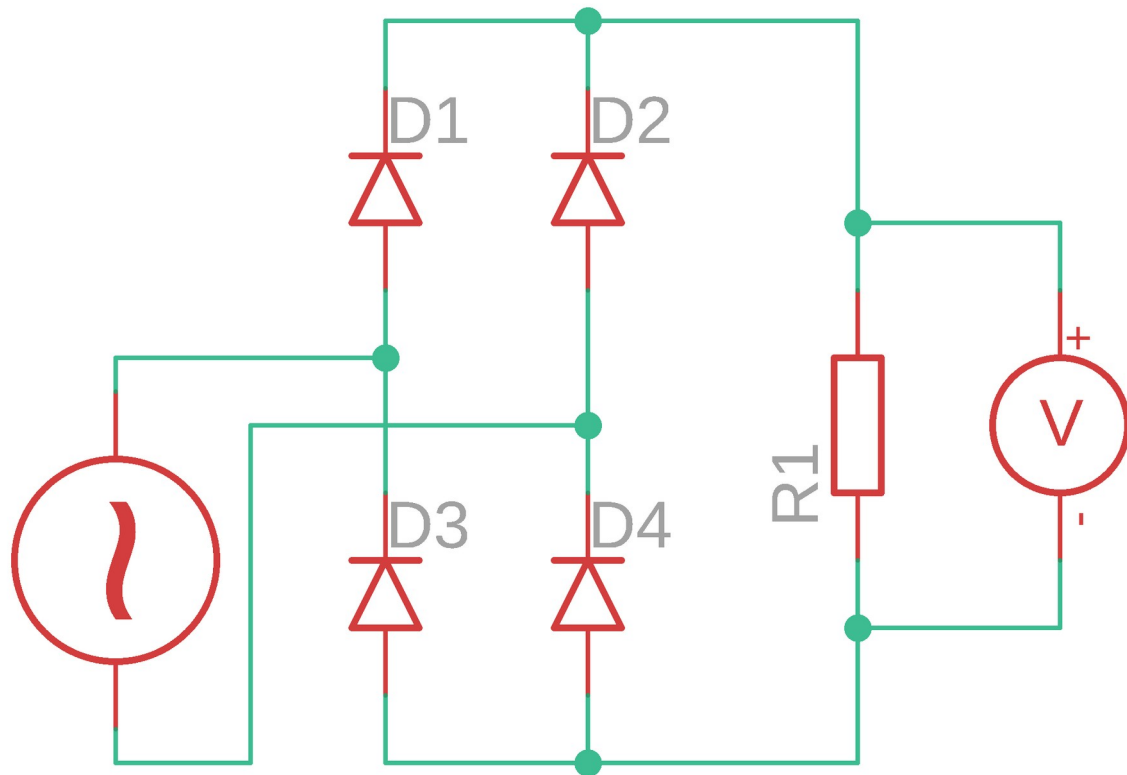
# Rodzaje prostowników - jednopółwkowy



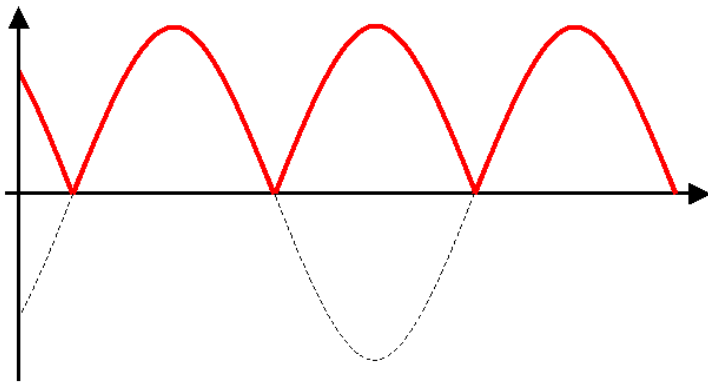
# Prostownik jednopółwkowy



# Prostownik dwupołkowy

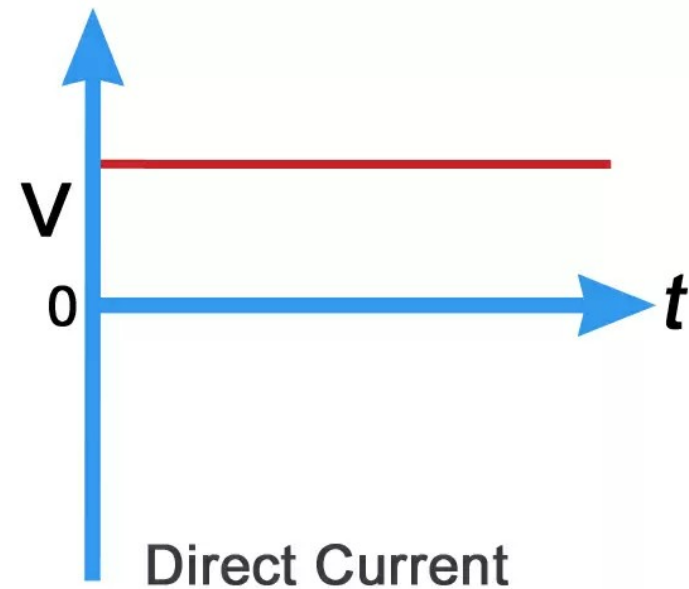


# Czy może być lepiej?

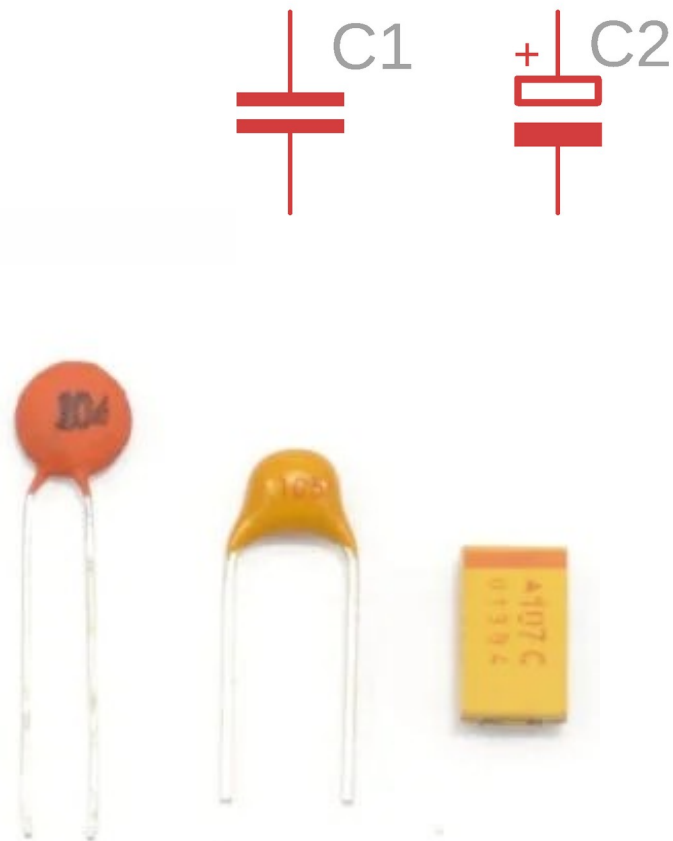


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# Kondensatory





# Jak jest zbudowany kondensator?



Pojemność kondensatora płaskiego

$$C = \frac{\epsilon_0 \epsilon_r S}{d},$$

gdzie:

$S$  – powierzchnia jednej okładki kondensatora,  
 $d$  – odległość między okładkami.

$\epsilon_0$  – przenikalność elektryczna próżni  
 $\epsilon_r$  – względna przenikalność elektryczna ośrodka, z którego wykonano dzielący okładki izolator

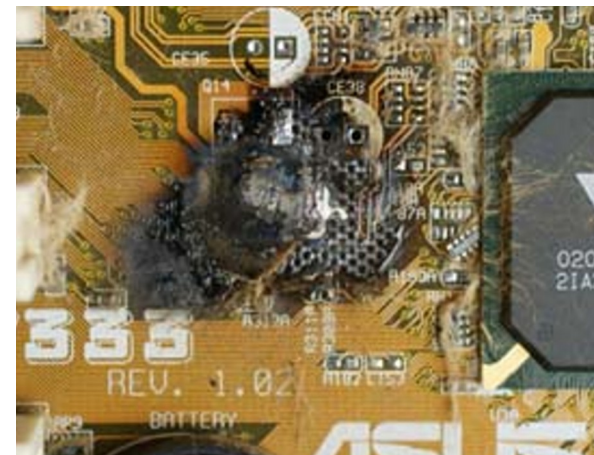
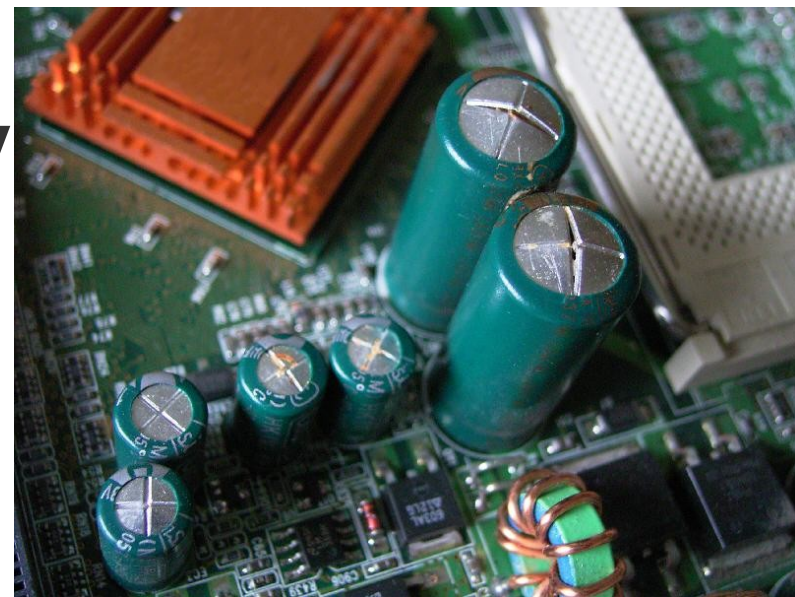
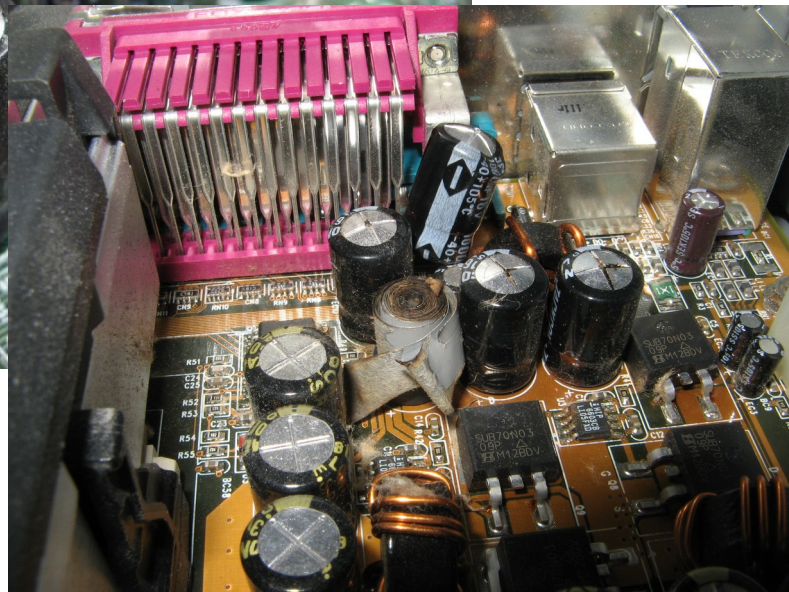


# Kondensatory są niebezpieczne

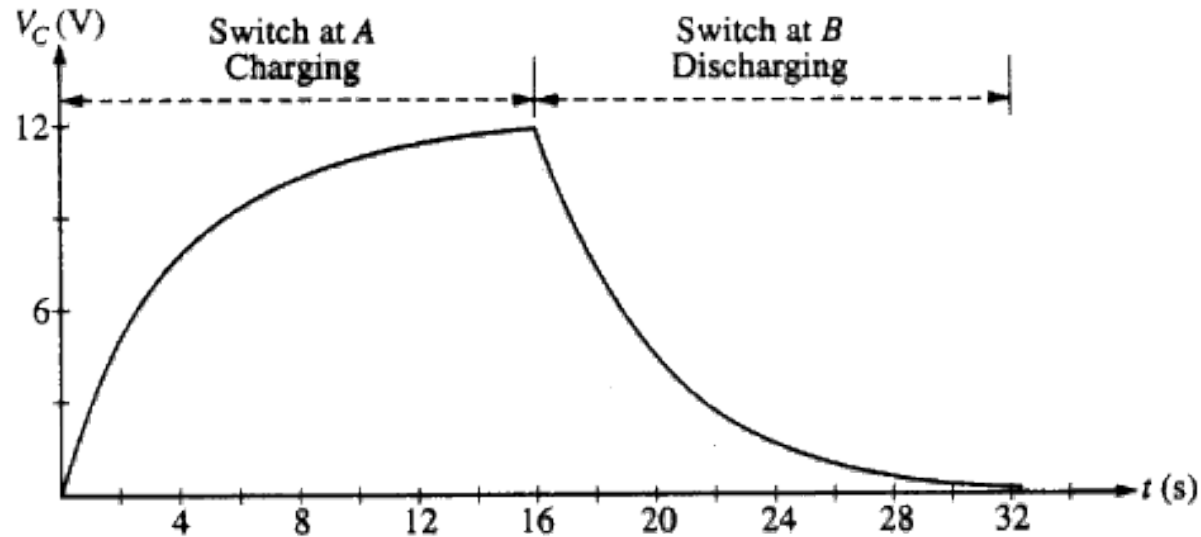
<https://youtu.be/PkXI8V5dbal>



# Uszkodzone kondensatory



# Co robi kondensator?



[https://youtu.be/\\_xo5yJ1z5NQ](https://youtu.be/_xo5yJ1z5NQ)

Łączenie  
kondensatorów

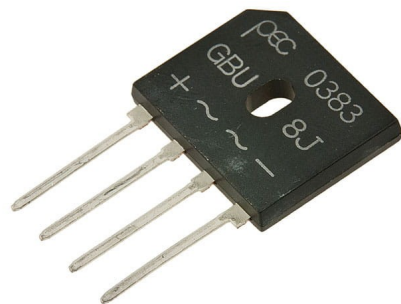
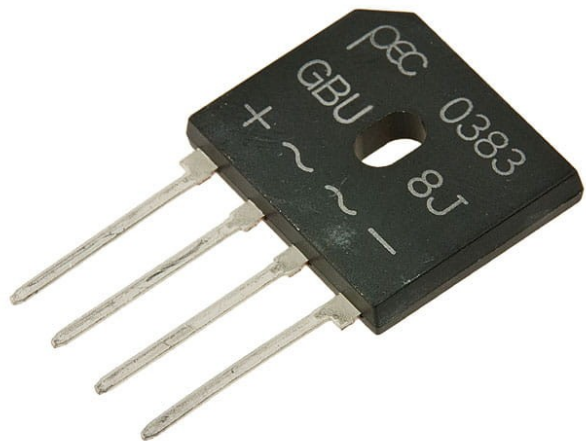
*Szeregowo*

$$\frac{1}{C_z} = \frac{1}{C_1} + \frac{1}{C_2}$$

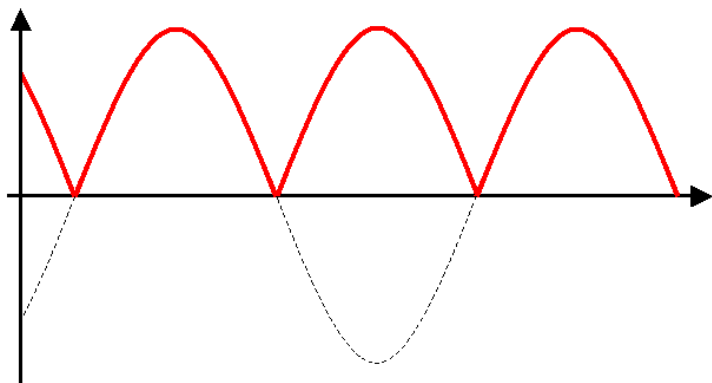
*Równolegle*

$$C_z = C_1 + C_2$$

# Kondensator + prostownik

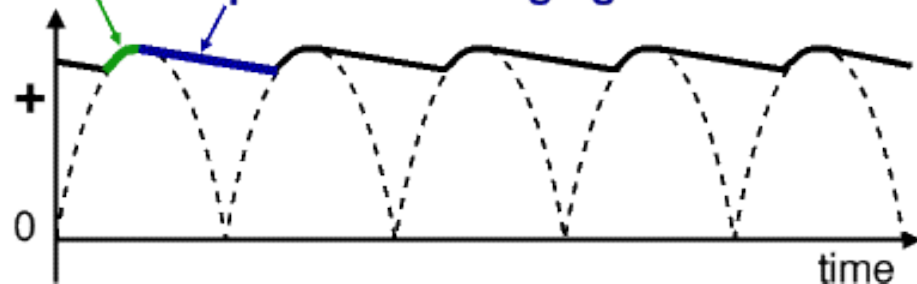


+



capacitor charging

capacitor discharging



# Gdzie dołożyć kondensator?

