



ODRŽAVANJE

RAČUNARSKIH SISTEMA

TEMA 4 – PRVI DEO

TEMA 4. –PRVI DEO

- MODULI ZA NAPAJANJE UREĐAJA
- BLOK ŠEMA NAPOJNOG MODULA
- TRADICIONALNA NAPAJANJA –ELEMENTI
- TRADICIONALNA NAPAJANJA –PRINCIP RADA



MODULI ZA NAPAJANJE

- **PRILAGOĐAVAJU ELEKTRIČNU ENERGIJU IZ JAVNE ELEKTROMREŽE U OBLIK POTREBAN ZA RAD KONKRETNOG UREĐAJA.**
- **U ELEKTROMREŽI JE NAPON 220V NAIZMENIČNE STRUJE.**
- **OGROMNOJ VEĆINI ELEKTRONSKIH UREĐAJA U IT SEKTORU POTREBAN JE NIŽI NAPON PO PRAVILU JEDNOSMERNE STRUJE.**



OCZ
Technology

Model No. : OCZ-600ADJ SLI

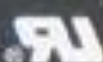
AC INPUT		115/230Vac 12/6 60/50Hz						PEAK LOAD (60 sec)
DC OUTPUT		+3.3V	+5V	+12V ₁	+12V ₂	-12V	-5V	
OCZ-600ADJ SLI 600W	Max output Current	28A	46A	20A	20A	0.5A	0.5A	2.0A
				35A				
	Max combined wattage	92.4W	230W	420W		6.0W	2.5W	10W
		585W			18.5W			

700W

(+12V₁, +12V₂ : 20A±1A)



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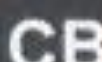
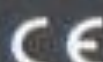
E130843



LR90706



M452509



FOR HOME OR OFFICE USE

Tested To Conform With FCC Standards

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CAUTION! HAZARDOUS

- Do not remove this cover!
- Trained service personnel only!
- No serviceable components inside!

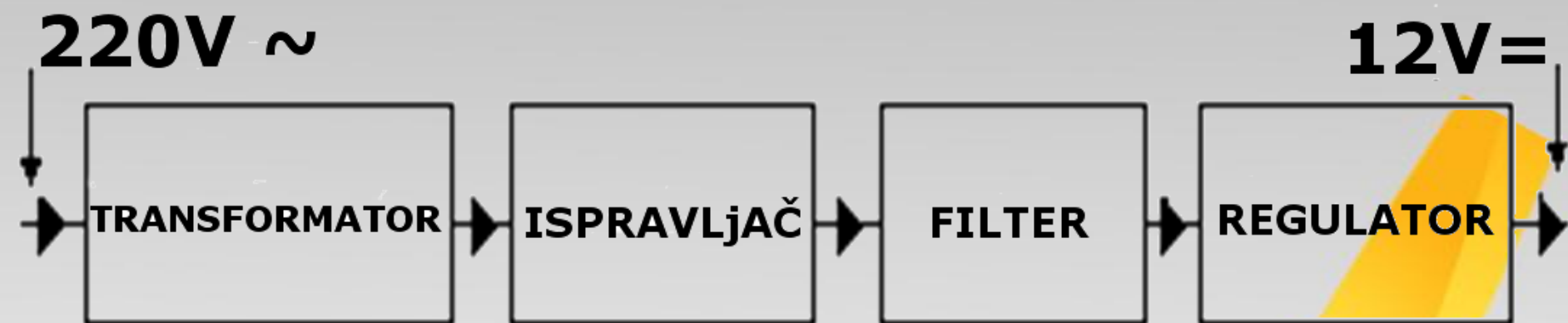
VORSICHT! GEFAHRENZONE

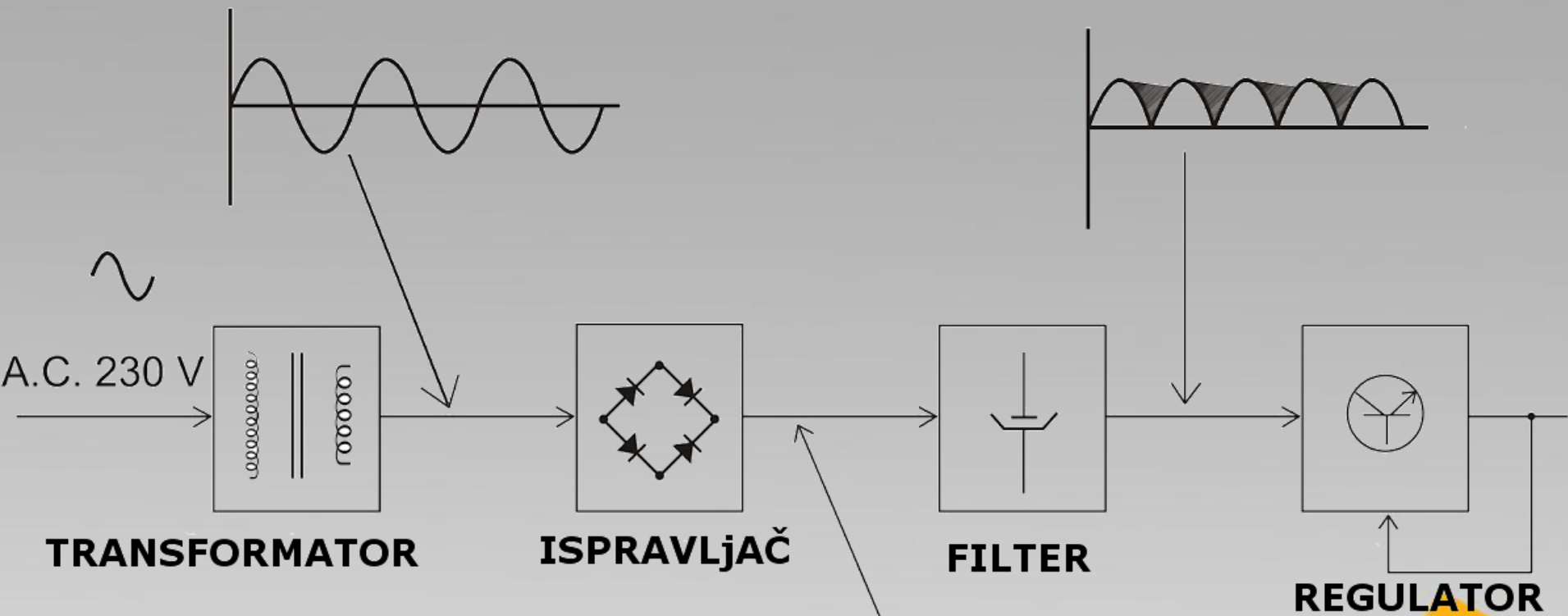
- Abdeckungen unter keinen Umständen abnehmen!
- Reparaturen nur durch ausgebildetes Personal!
- Es sind keine zu wartenden Bauteile vorhanden!

MADE IN CHINA



BLOK ŠEMA TRADICIONALNOG MODULA NAPAJANJA



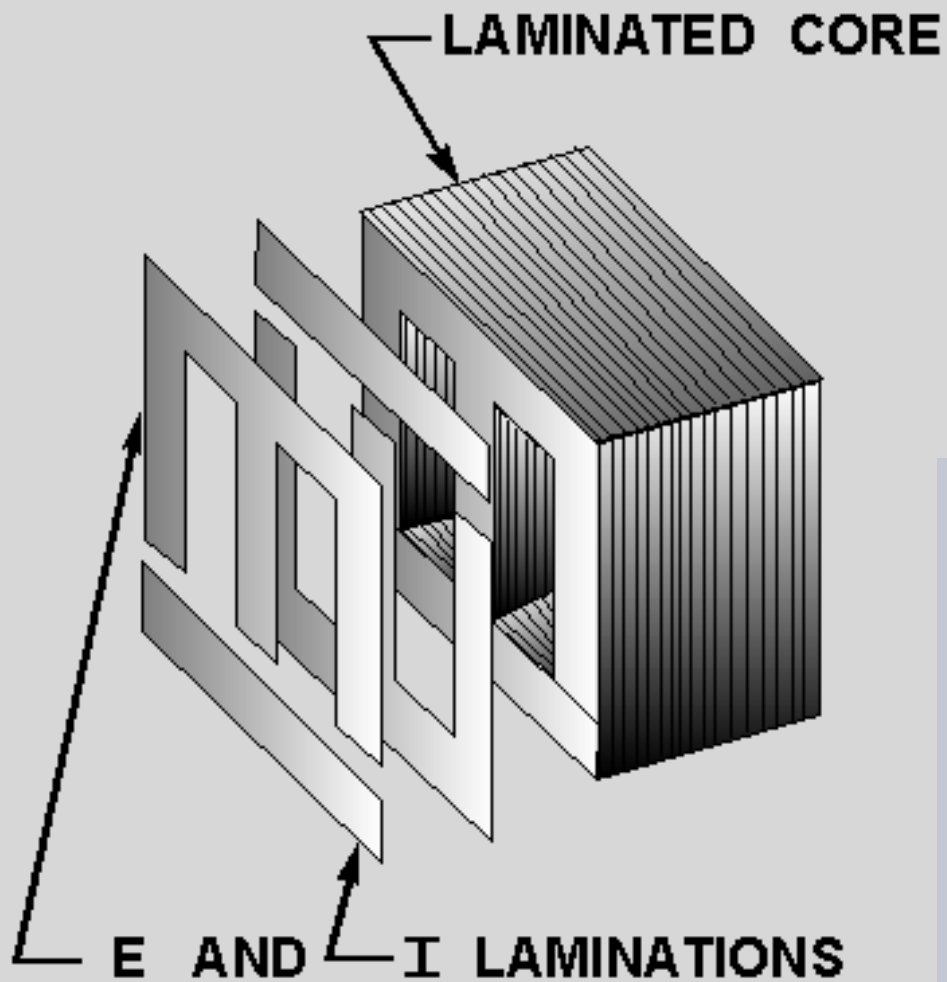


PRORAČUN TRANSFORMATORA

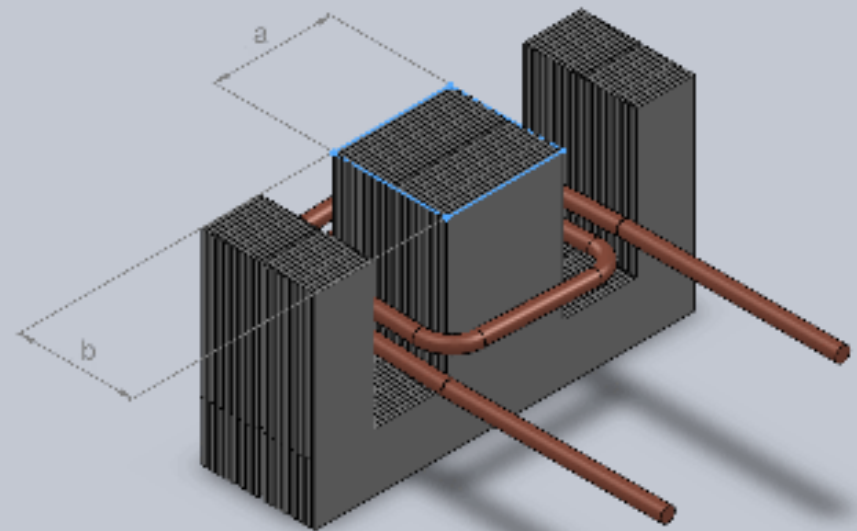
- **U_p** – Napon primara [V]
- **U_s** – Napon sekundara [V]
- **S** – Snaga transformatora [VA]
- **S_p** – Dimenzija jezgra [cm²]
- **I_p** – Struja primara [A]
- **I_s** – Struja sekundara [A]
- **D_p** – Debljina žice primara [mm]
- **D_s** – Debljina žice sekundara [mm]



DIMENZIJA JEZGRA



$$P_J = \sqrt{S}$$



BROJ NAMOTAJA

$$N_X = \frac{45}{P_J}$$

$$N_P = U_P \times N_X$$

$$N_S = U_S \times N_X$$



DEBLJINA ŽICE

$$D_P = 0.7 \times \sqrt{I_P}$$

$$D_S = 0.7 \times \sqrt{I_S}$$



PRIMER PRORAČUNA

• ULAZNI PARAMETRI: IZLAZNI NAPON I STRUJA: 12V, 5A

• IZLAZNI PARAMETRI:

1. VELIČINA JEZGRA (POPREČNI PRESEK):

$$S = U_S \times I_S = 12V \times 5A = 60W$$

$$P_J = \sqrt{S} = \sqrt{60} = 7.75cm^2$$



PRIMER PRORAČUNA

• IZLAZNI PARAMETRI:

2. BROJ NAVOJA ŽICE U PRIMARU I SEKUNDARU

$$N_X = \frac{45}{P_J} = \frac{45}{7.75} = 5.81$$

$$N_P = N_X \times U_P = 5.81 \times 220 = 1279$$

$$N_S = N_X \times U_S = 5.81 \times 12 = 70$$

PRIMER PRORAČUNA

• IZLAZNI PARAMETRI:

3. DEBLJINA ŽICE U PRIMARU I SEKUNDARU

$$D_s = 0.7 \times \sqrt{I_s} = 0.7 \times \sqrt{5}$$
$$= 0.7 \times 2.236 = 1.56 \text{ mm}$$



PRIMER PRORAČUNA

- REALNA PROSEČNA EFIKASNOST TRANSFORMATORA (φ)=85%, DAKLE GUBICI=15%.

$$P_P = \frac{P_S}{\varphi} = \frac{60W}{0.85} = 71W$$

$$I_P = \frac{P_P}{U_P} = \frac{71W}{220V} = 0.32A$$



PRIMER PRORAČUNA

- DEBLJINA ŽICE U PRIMARU:

$$D_P = 0.7 \times \sqrt{I_P} = 0.7 \times \sqrt{0.32}$$
$$= 0.7 \times 0.566 = 0.4 \text{ mm}$$



OCZ
Tech

EFIKASNOST MODULA NAPAJANJA ???

AC INPUT		115/230V ac 15.3 60/50Hz							PEAK LOAD (60 sec)
DC OUTPUT		+3.3V	+5V	+12V ₁	+12V ₂	-12V	-5V	+5VSB	
OCZ-600ADJ SLI 600W	Max output Current	28A	46A	20A	20A	0.5A	0.5A	2.0A	700W
				35A					
	Max combined wattage	92.4W	230W	420W		6.0W	2.5W	10W	
		585W				18.5W			

(+12V₁, +12V₂ : 20A±1A)



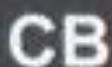
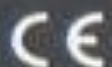
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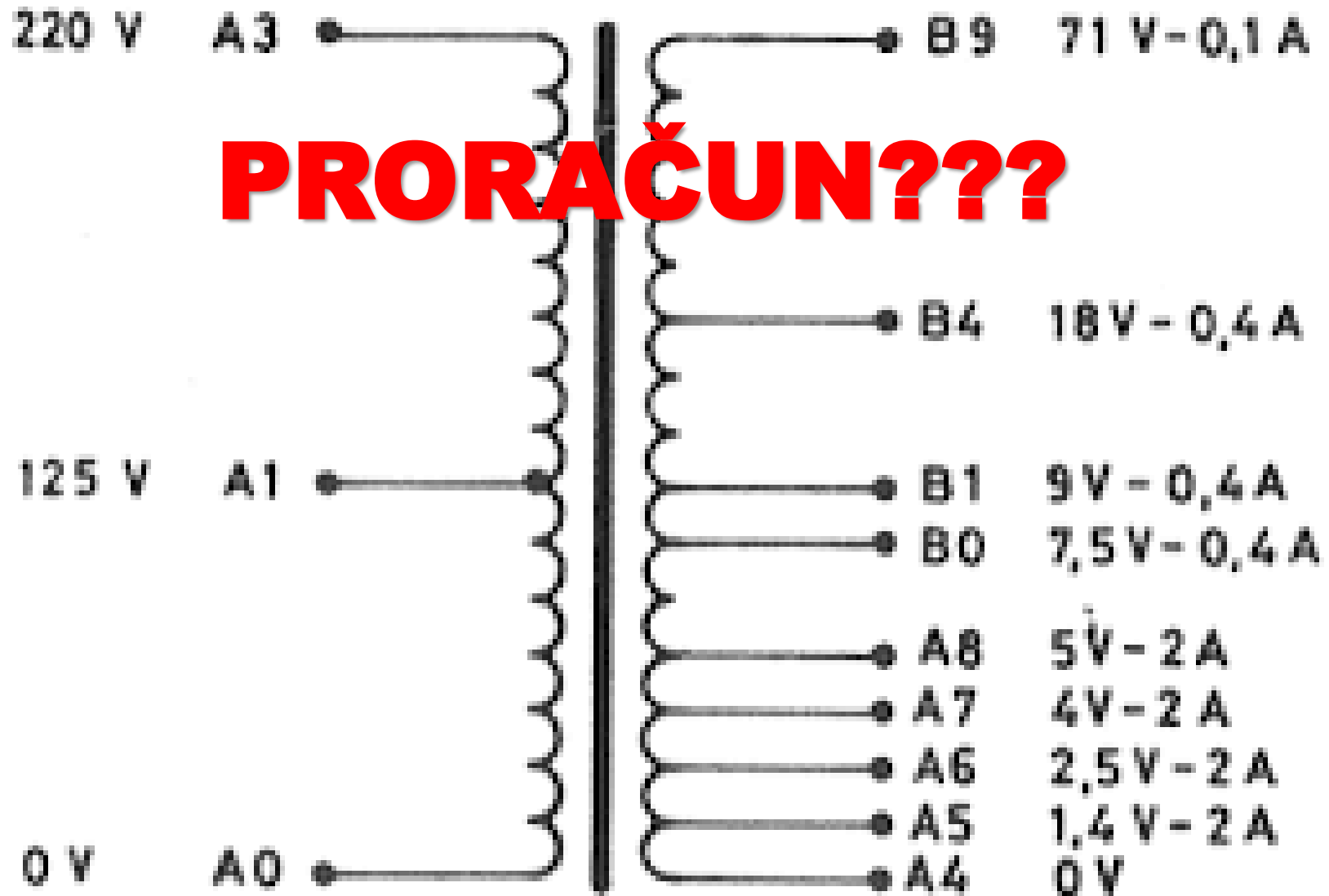
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MADE IN CHINA

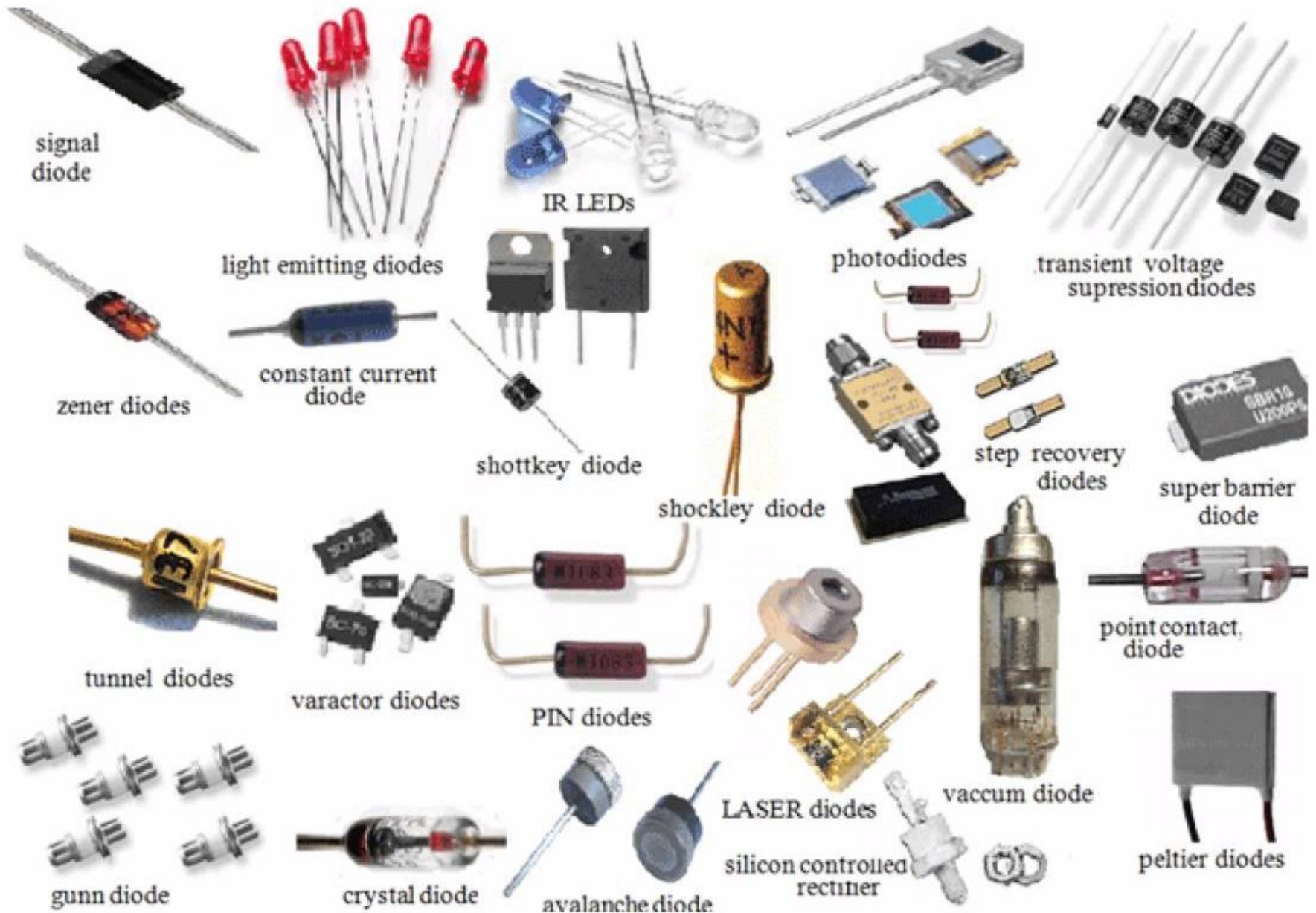


VIŠESTRUKI PRIMARI/SEKUNDARI

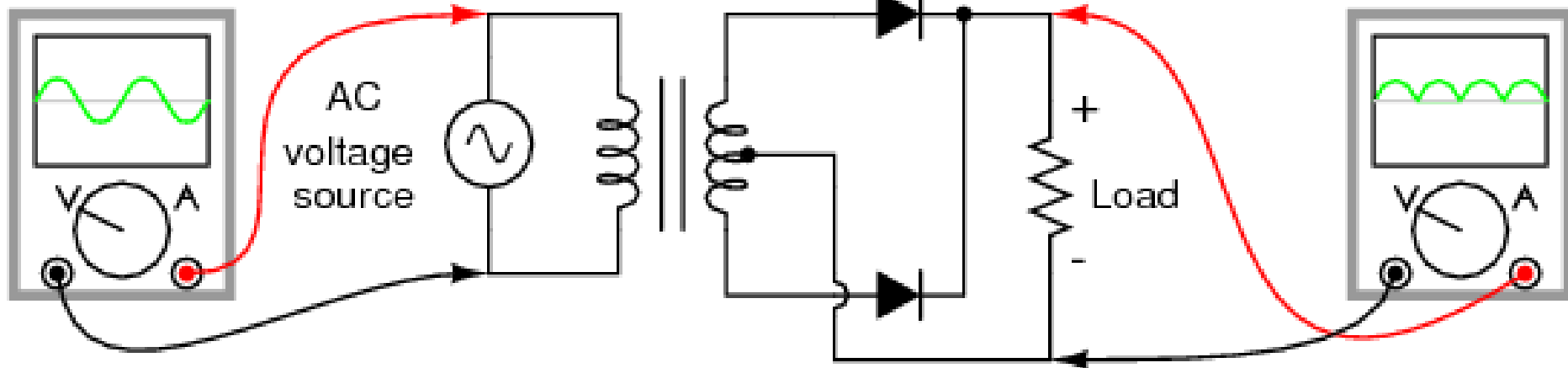
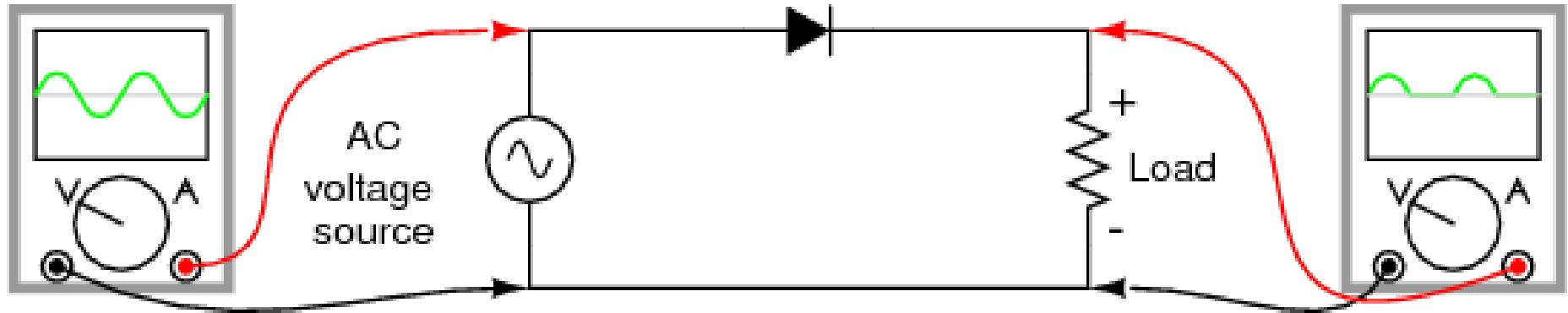


TORUSNI TRANSFORMATORI

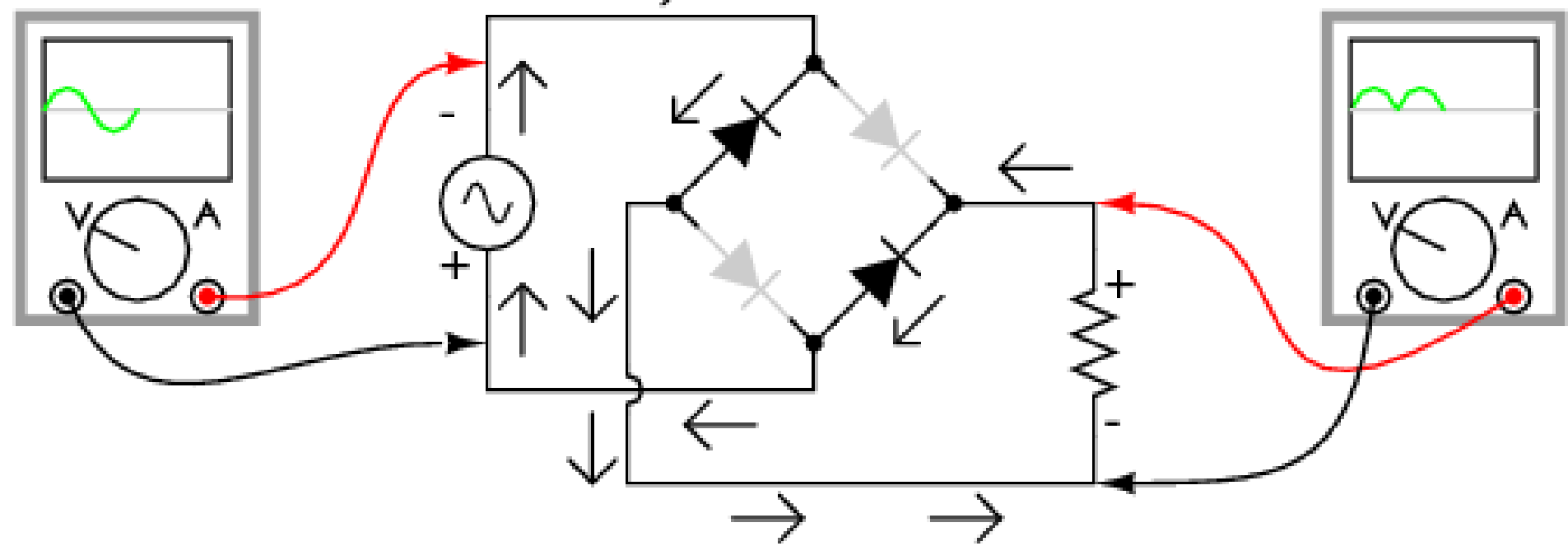
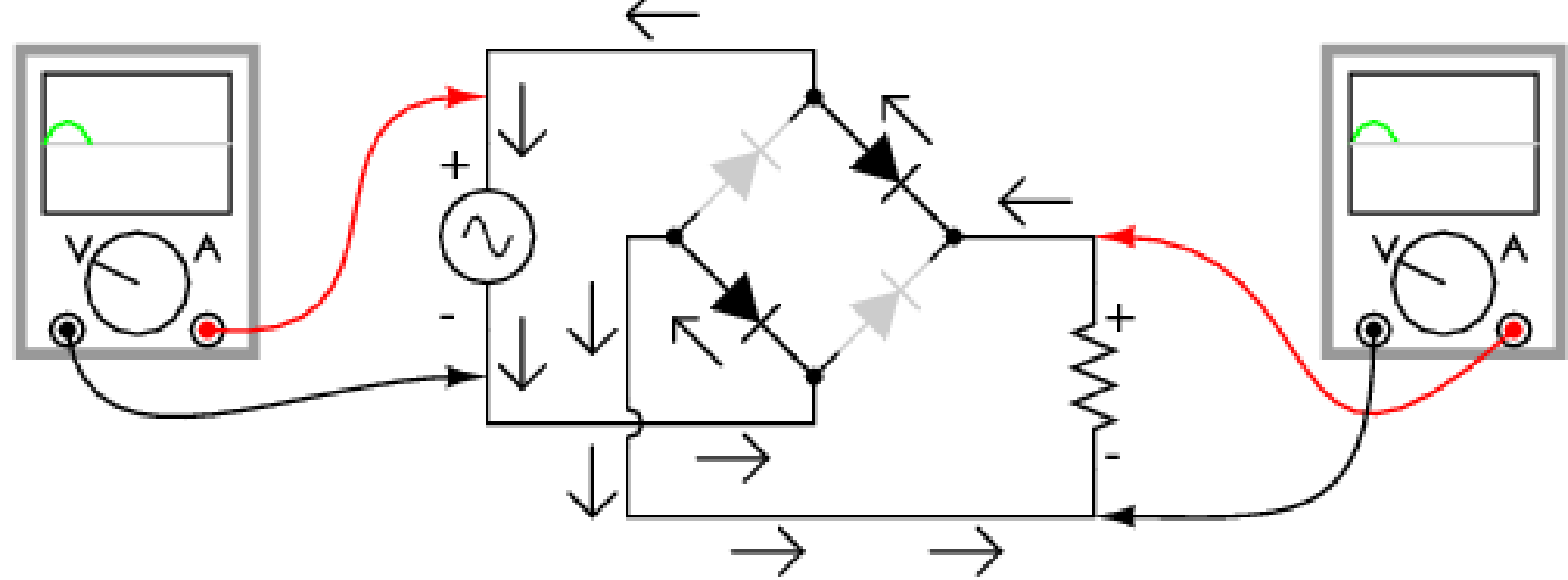




DVOSTRANO ISPRAVLJANJE -GRECOV SPOJ-



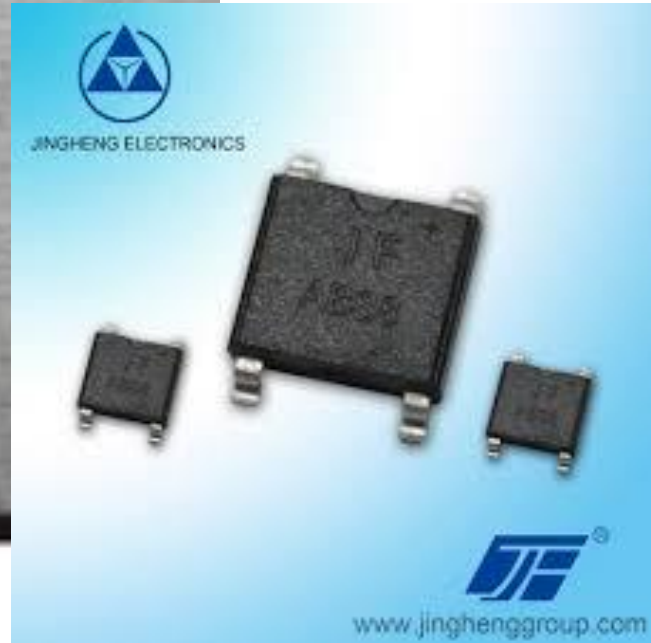
AC



DVOSTRANO ISPRAVLJANJE -GRECOV SPOJ-



DC+



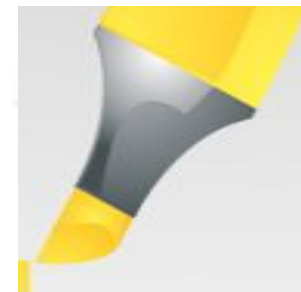
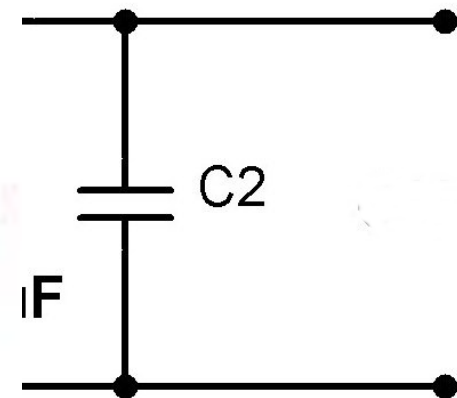
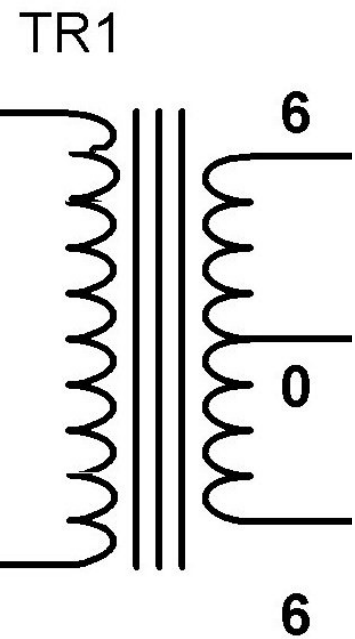
FILTER -KONDENZATOR



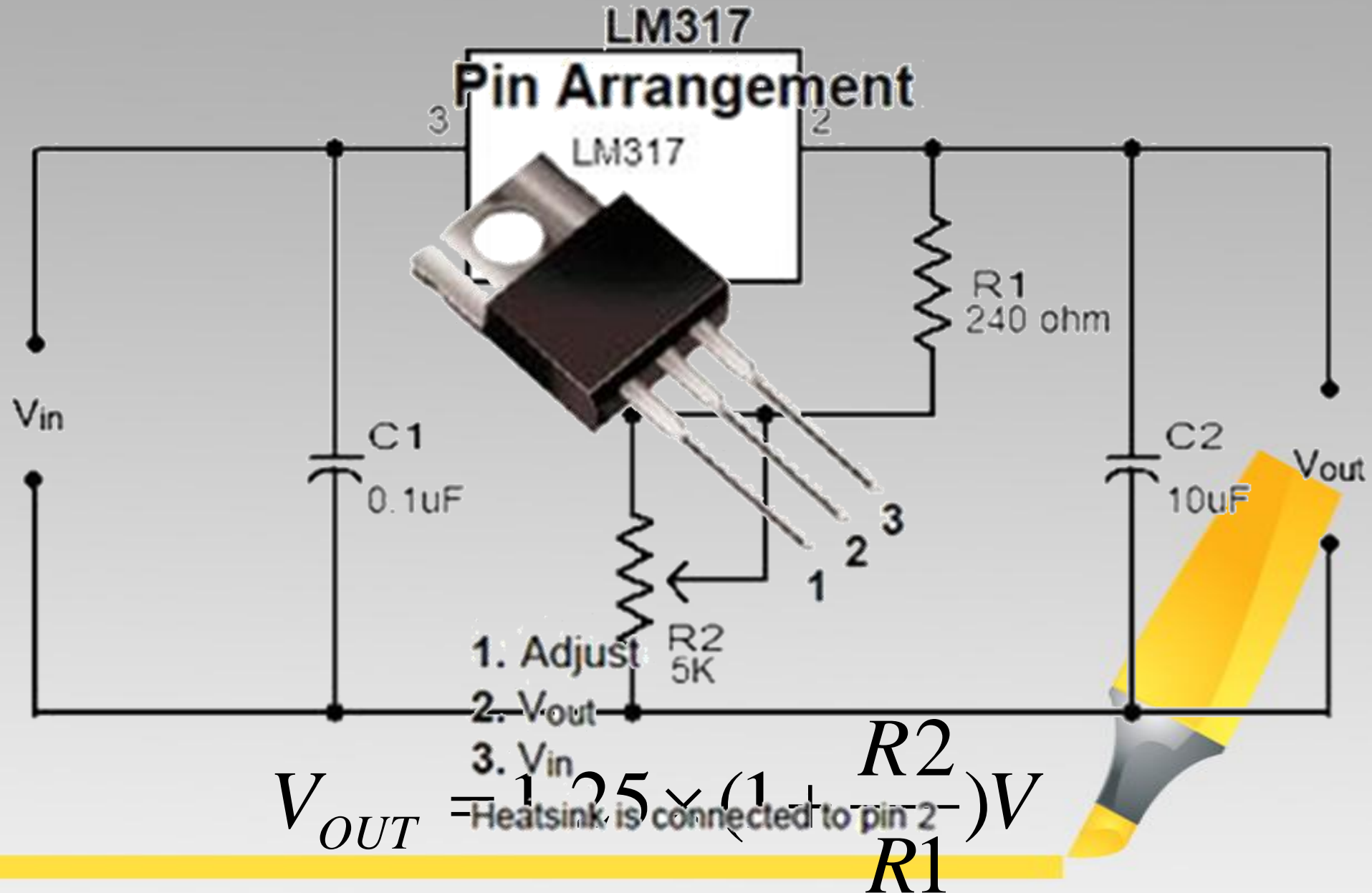
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FIKSNI REGULATORI NAPONA



VARIJABILNI REGULATORI NAPONA



THANK YOU



FOR YOUR ATTENTION