

Efektivna vrednost

$$I = I_{ef} = \sqrt{\frac{1}{T} \int_0^T i^2 dt} =$$

za na pr  $i = I_m \sin \omega t$

$$= \sqrt{\frac{1}{T} \int_0^T I_m^2 \sin^2 \omega t dt}$$

$$\sin^2 \omega t = \frac{1}{2} - \frac{1}{2} \cos 2\omega t$$

$$I^2 = \frac{I_m^2}{2T} \int_0^T (1 - \cos 2\omega t) dt = \frac{I_m^2}{2T} \left[ t - \frac{\sin 2\omega t}{2\omega} \right]_0^T = \frac{I_m^2}{2}$$

$$I = \frac{I_m}{\sqrt{2}} \quad \text{tj} \quad I = \frac{I_m}{\sqrt{2}}$$

$$I_m = I \cdot \sqrt{2}$$

Ef. vrednost struje; razna veličina,  
uju mere instrumenti!

= Trenutna i srednja snaga, faktor snage

$$u = U_m \sin \omega t$$

$$i = I_m \sin(\omega t - \varphi)$$

$$p(t) = u(t) i(t) = U_m I_m \sin \omega t \cdot \sin(\omega t - \varphi) =$$

$$= U_m I_m \sin \omega t [\sin \omega t \cos \varphi - \cos \omega t \sin \varphi] =$$

$$= U_m I_m [\sin^2 \omega t \cos \varphi - \sin \omega t \cos \omega t \sin \varphi]$$

$$\sin^2 \omega t = \frac{1}{2} - \frac{1}{2} \cos 2\omega t$$