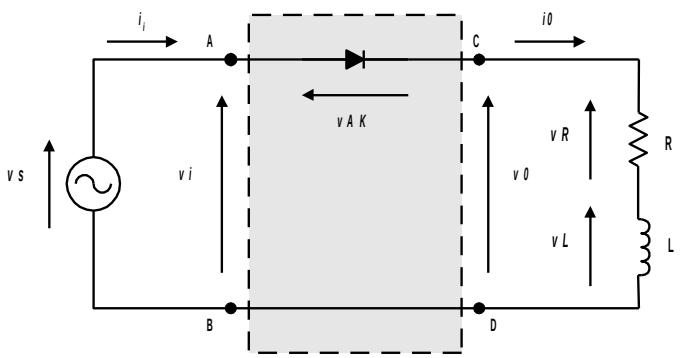
Retificadores Monofásicos de Meia-Onda (carga RL)

Curvas de Projeto

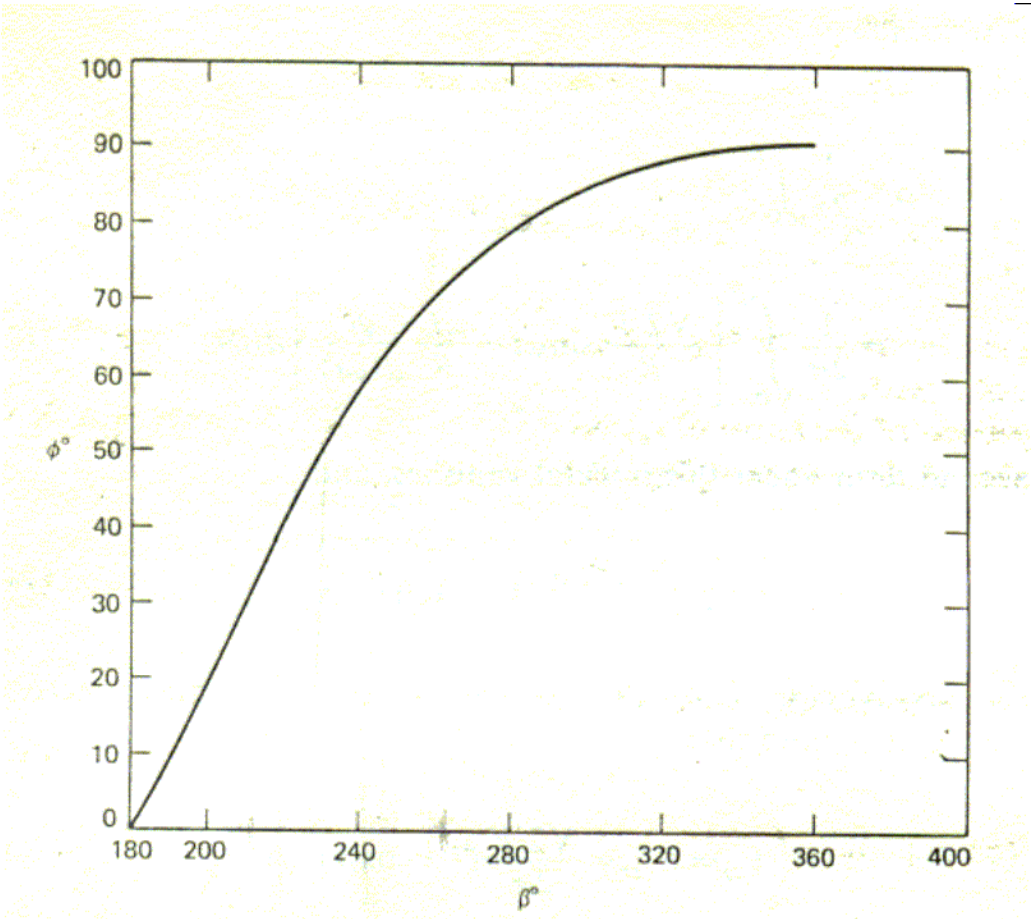
RETIFICADOR MONOFÁSICO DE MEIA-ONDA NÃO CONTROLADO
Ângulo de Condução – Carga RL



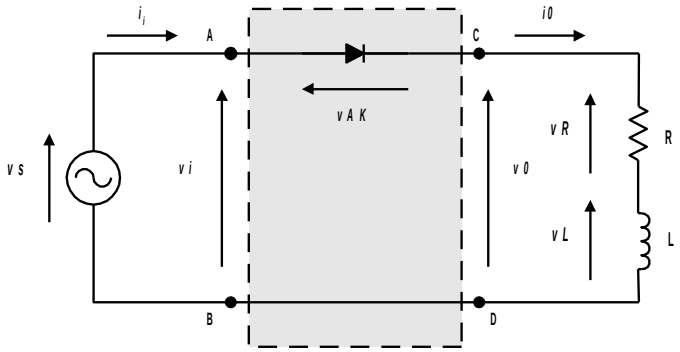
$$\operatorname{sen}(\beta-\phi)+e^{-\beta/\tan\phi}.\operatorname{sen}\phi=0$$

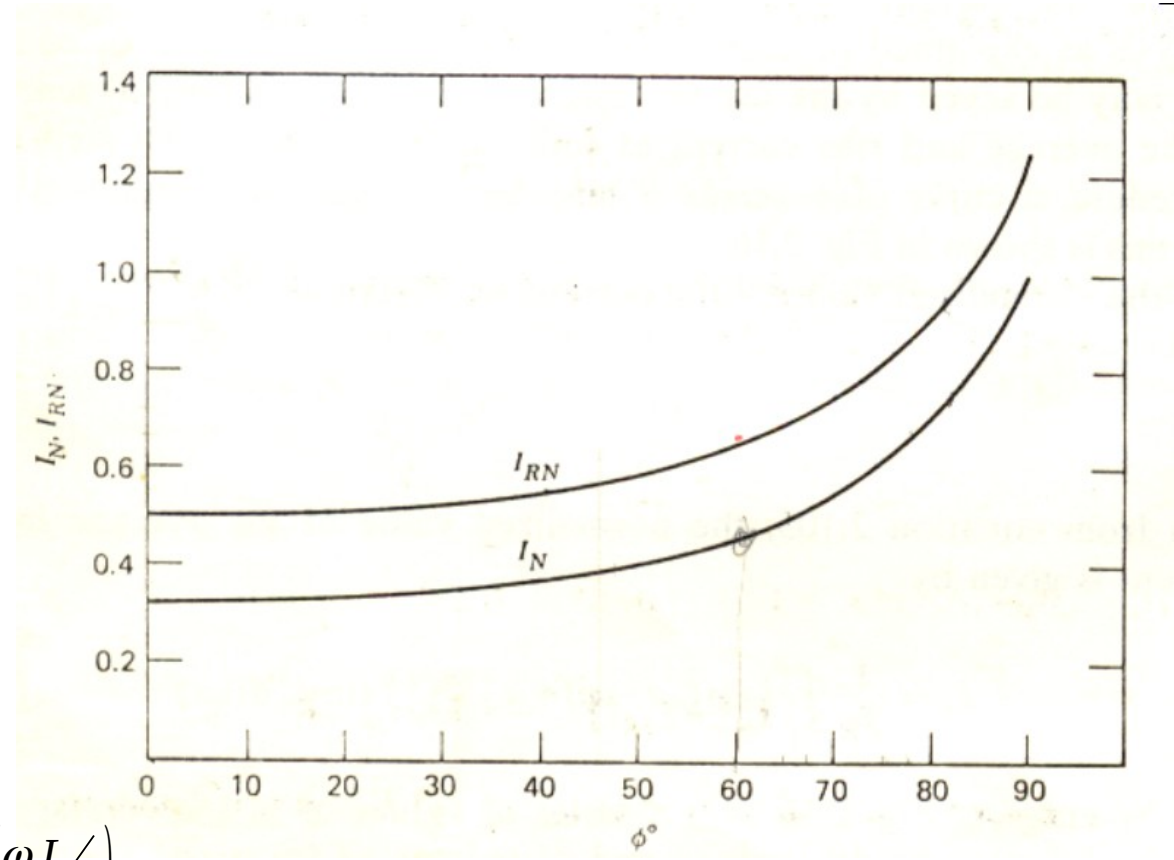
$$\gamma=\beta-\alpha$$

$$\alpha=0^0$$



RETIFICADOR MONOFÁSICO DE MEIA-ONDA NÃO CONTROLADO
Correntes média e rms normalizadas – Carga RL





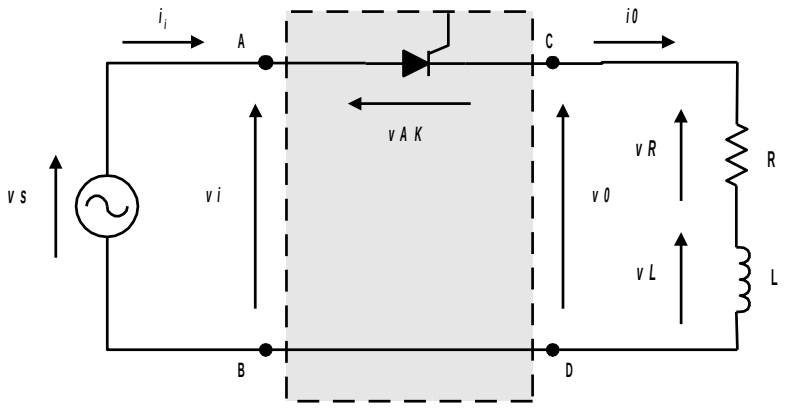
$$i_N = sen(\omega.t - \phi) + e^{-\omega.t/\tan\phi}.sen\phi$$

$$i_N = {i(\omega.t)}/{I_{base}} \quad ; \quad I_{base} = {\sqrt{2}.V}/{Z}$$

$$Z = \sqrt{R^2 + (\omega.L)^2} \quad ; \quad \phi = \arctan\left({\omega.L}/{R}\right)$$

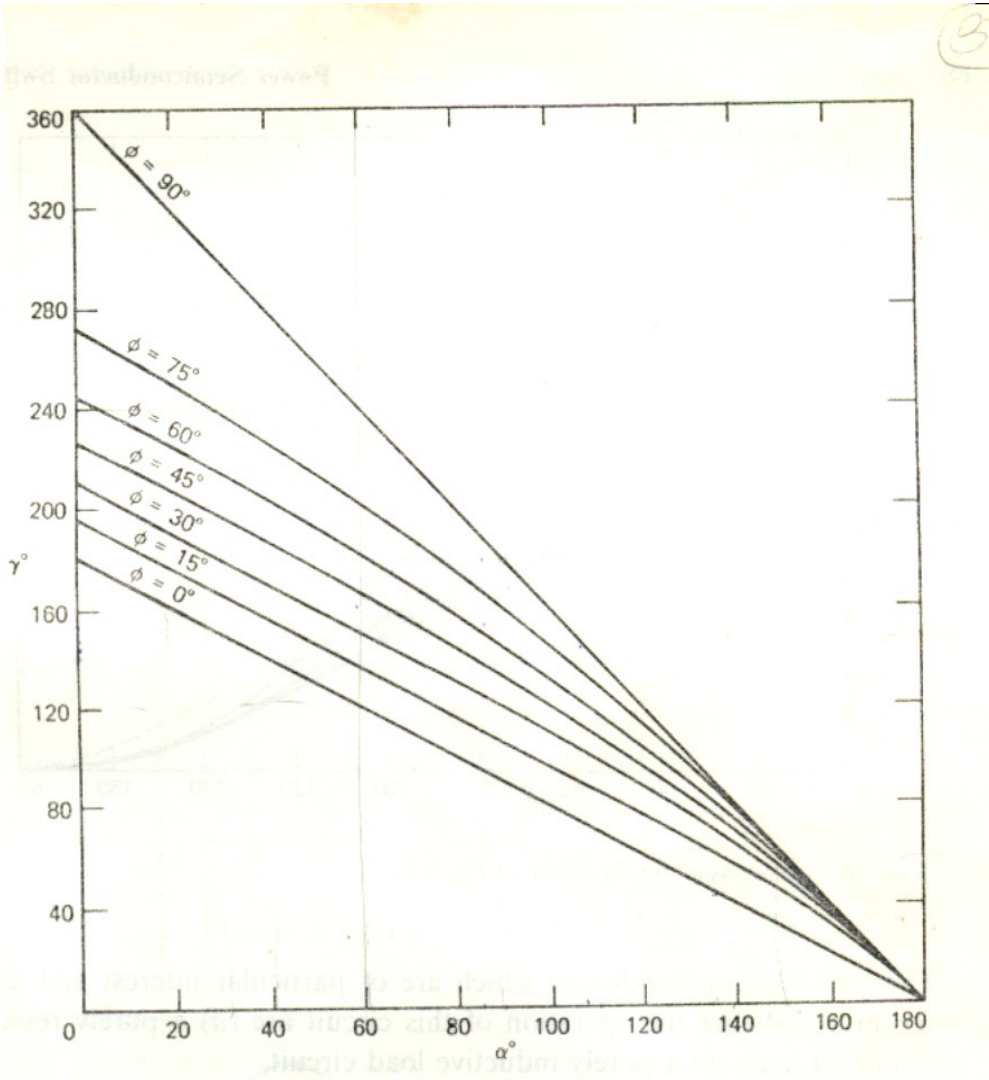
$$I_N = \frac{1}{2.\pi}\int_{\alpha=0}^{\beta=\gamma+\alpha=\gamma} i_N.d\omega t \quad ; \quad I_{RN} = \sqrt{\frac{1}{2.\pi}\int_{\alpha=0}^{\beta=\gamma+\alpha=\gamma} i_N^2.d\omega t}$$

RETIFICADOR MONOFÁSICO DE MEIA-ONDA CONTROLADO
Ângulo de Condução – Carga RL

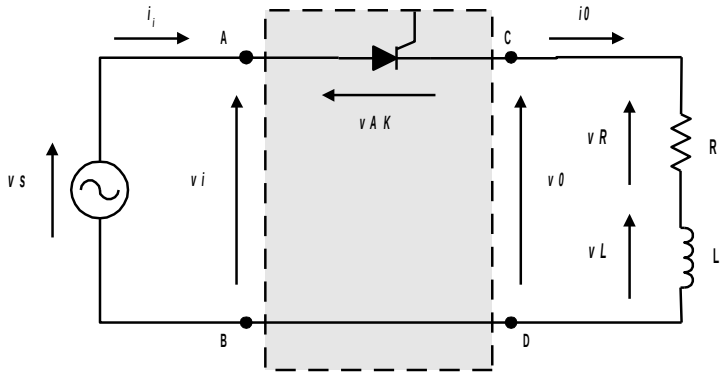


$$\text{sen}(\beta-\phi)=\text{sen}(\alpha-\phi).e^{[\alpha-\beta]/\tan\phi}$$

$$\gamma=\beta-\alpha$$



RETIFICADOR MONOFÁSICO DE MEIA-ONDA CONTROLADO
Corrente Média Normalizada – Carga RL

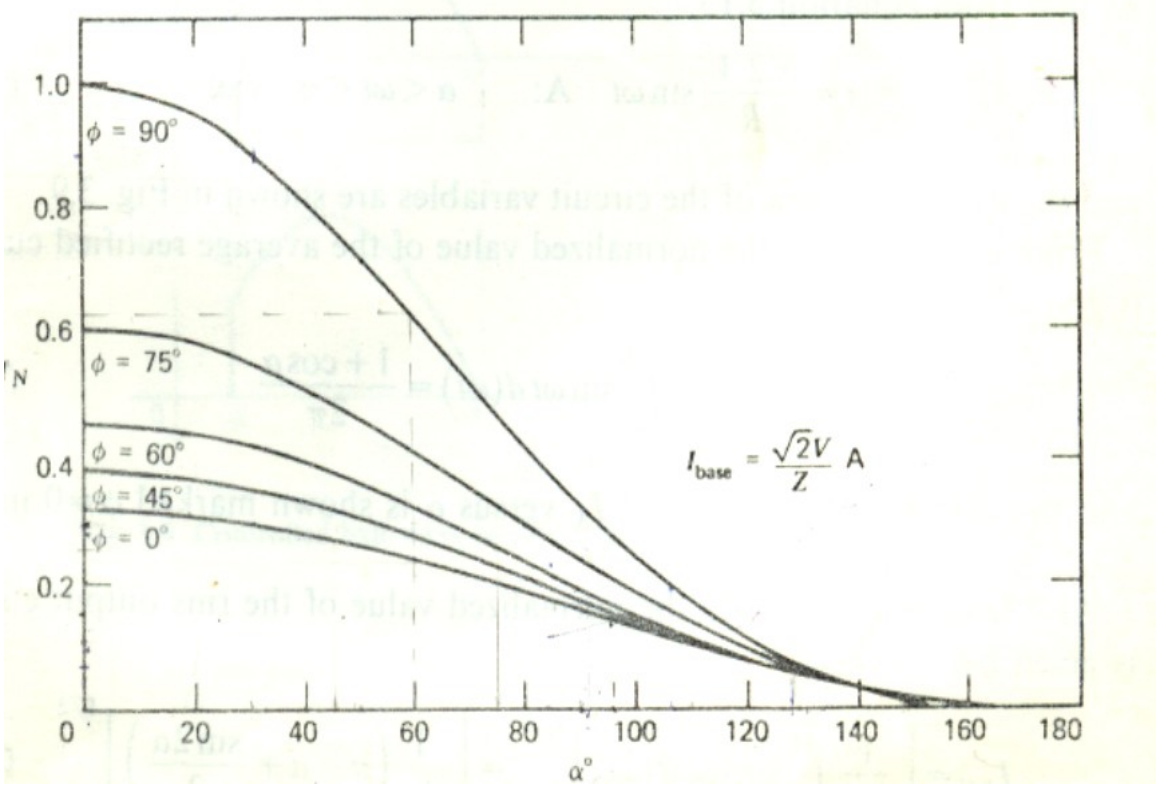


$$i_N = \text{sen}(\omega.t - \phi) - e^{(\alpha - \omega.t)/\tan\phi}.\text{sen}(\alpha - \phi)$$

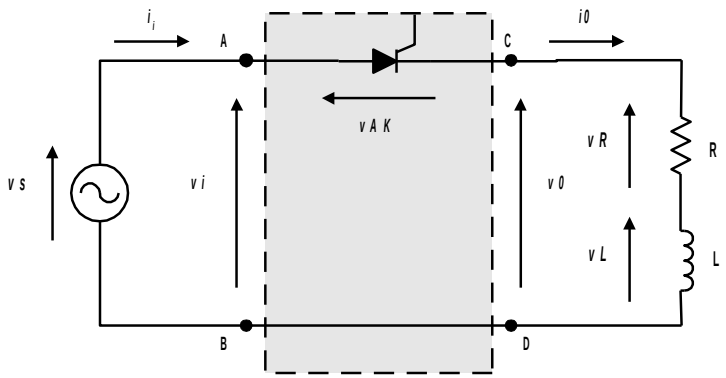
$$i_N = {i(\omega.t)}/{I_{base}} \quad ; \quad I_{base} = {\sqrt{2}.V}/{Z}$$

$$Z = \sqrt{R^2 + (\omega.L)^2} \quad ; \quad \phi = \arctan\left({\omega.L}/{R}\right)$$

$$I_N = \frac{1}{2.\pi}\int_{\alpha}^{\beta=\gamma+\alpha} i_N .d\omega t$$



RETIFICADOR MONOFÁSICO DE MEIA-ONDA CONTROLADO
Corrente RMS Normalizada – Carga RL



$$i_N = \text{sen}(\omega.t - \phi) - e^{(\alpha - \omega.t)/\tan\phi}.\text{sen}(\alpha - \phi)$$

$$i_N = i(\omega.t) \Big/ I_{base} \quad ; \quad I_{base} = \sqrt{2}.V \Big/ Z$$

$$Z = \sqrt{R^2 + (\omega.L)^2} \quad ; \quad \phi = \arctan\left(\omega.L \Big/ R\right)$$

$$I_{RN} = \sqrt{\frac{1}{2.\pi}\int_{\alpha}^{\beta=\gamma+\alpha} i_N^2 .d\omega t}$$