

$$I_{b-\max} = I_0$$

$$I_{D-\text{médio}} = \frac{1}{\pi} \int_0^{\pi} i_D(t) dt = \frac{1}{\pi} \int_0^{\frac{\pi}{3}} I_0 dt = \frac{I_0}{3}$$

$$\begin{aligned} I_{D-\text{rms}} &= \sqrt{\frac{1}{\pi} \int_0^{\pi} i_D^2(t) dt} = \sqrt{\frac{1}{\pi} \int_0^{\frac{\pi}{3}} I_0^2 dt} \\ &= \frac{1}{\sqrt{\pi}} \frac{\sqrt{\pi}}{\sqrt{3}} I_0 = \frac{I_0}{\sqrt{3}} \end{aligned}$$

$$P = \frac{1}{\pi} \int_0^{\pi} v_D(t) i_D(t) dt = I_0 \frac{1}{\pi} \int_0^{\pi} v_D(t) dt = I_0 V_{D-\text{médio}}$$

$$S = 3 V_{S-\text{rms}} \times I_{S-\text{rms}} = 3 V_{\text{rms}} I_{D-\text{rms}} = 3 V_{\text{rms}} \frac{I_0}{\sqrt{3}}$$

$$\begin{aligned} \text{FP}_s &= \frac{I_0 \frac{3}{\pi} \sqrt{2} V_{\text{rms}} \sin\left(\frac{\pi}{3}\right)}{3 V_{\text{rms}} \frac{I_0}{\sqrt{3}}} = \frac{\sqrt{6}}{\pi} \sin\left(\frac{\pi}{3}\right) \\ &= 0,675 \end{aligned}$$