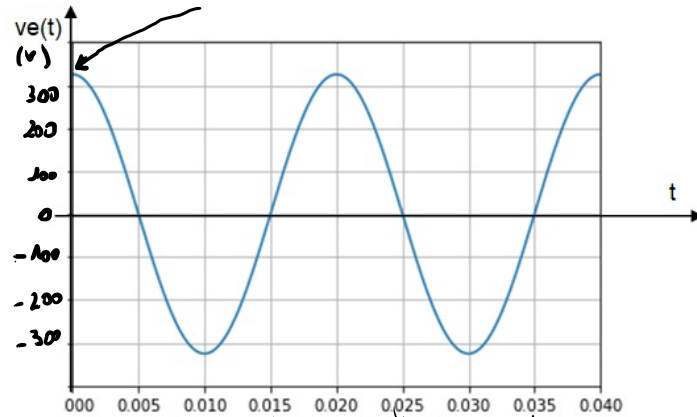
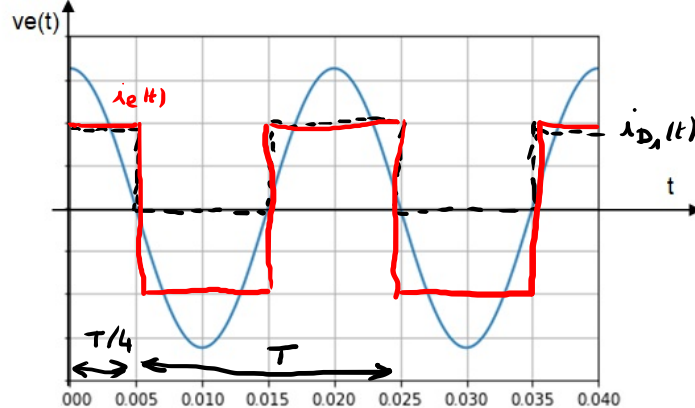
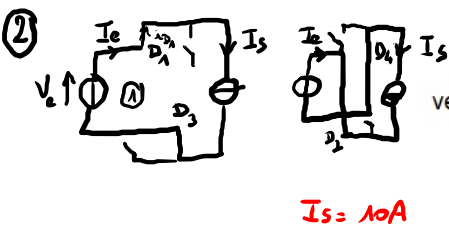


16/05 Ed AL4.1

① $V_{max} = \sqrt{2} V$: $V_{max} = \sqrt{2} \cdot 230 = 324V \rightarrow$ échelle 100V/div



Diodes du haut : cathode commune	D ₁	D ₄	D ₃	D ₄	D ₁
Diodes du bas : anode commune	D ₃	D ₂	D ₃	D ₂	D ₃



Diodes du haut :	D ₁	D ₄	D ₃	D ₄	D ₁
Diodes du bas :	D ₃	D ₂	D ₃	D ₂	D ₃

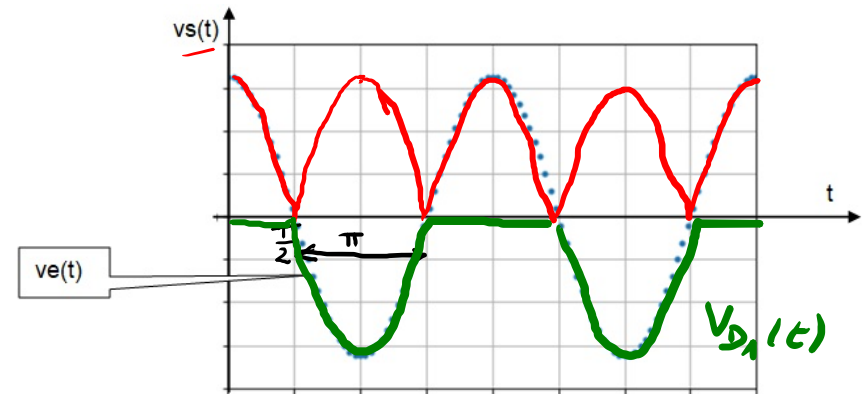
③ $I_{D1, max} = I_s$ $I_{D1, max} = 10A$

$$\langle I_{D1} \rangle = \frac{1}{T} \int_{T/4}^{T/4+T/2} i_{D1}(t) dt = \frac{1}{T} \cdot I_s \cdot \frac{T}{2} \quad \boxed{\langle I_{D1} \rangle = \frac{I_s}{2} = 5A}$$

$$I_{D1} = \sqrt{\frac{1}{T} \int_{T/4}^{T/4+T/2} i_{D1}^2(t) dt} = \sqrt{\frac{1}{T} \int_{T/4}^{T/4+T/2} I_s^2 dt} = \sqrt{\frac{1}{T} [I_s^2 t]_{T/4}^{T/4+T/2}} = \sqrt{\frac{1}{T} [I_s^2 \cdot \frac{T}{2}]} = \sqrt{\frac{I_s^2}{2}} = \frac{I_s}{\sqrt{2}} = 7.1A$$

$$I_{D1} = \sqrt{\frac{1}{T} I_s^2 \cdot \left(\frac{T}{4} + T - \frac{T}{4} - \frac{T}{2} \right)} \quad \boxed{I_{D1} = \frac{I_s}{\sqrt{2}}} \quad I_{D1} = 7.1A$$

16/05/7 ④



Diodes passante (haut)	D ₁	D ₄	D ₃	D ₄	D ₁
Diodes passantes (bas)	D ₃	D ₂	D ₃	D ₂	D ₃

⑤ $\langle V_s \rangle = \frac{1}{\pi} \int_{\pi/2}^{\pi/2+\pi} -\sqrt{2} V \cos(\theta) d\theta = -\frac{\sqrt{2} V}{\pi} [\sin \theta]_{\pi/2}^{\pi/2+\pi}$

$$= -\frac{\sqrt{2} V}{\pi} (\sin(\frac{\pi}{2} + \pi) - \sin \frac{\pi}{2}) = -\frac{\sqrt{2} V}{\pi} (-1 - 1) = \frac{2\sqrt{2} V}{\pi}$$

$\langle V_s \rangle = \frac{2\sqrt{2} V}{\pi}$ $\langle V_s \rangle = \frac{2 \cdot \sqrt{2} \cdot 230}{\pi}$ $\langle V_s \rangle = 207V$ ($\approx 230V$)

⑥ Lorsque D₁ n'est pas passante, elle est soumise à la tension $V_{D1}(t) < 0$. Au maximum $\hat{V}_{D1} = +\sqrt{2} V$ $\hat{V}_{D1} = +\sqrt{2} 230$ $\hat{V}_{D1} = +324V$

⑦ Il faut $\langle I_{D1} \rangle = 5A < I_{F(AV)} = 6A$

$$I_{D1} = 10A < I_{F(RMS)} = 10A$$

$$I_{D1, max} = 10A < I_{FRM} = 50A$$

$$\hat{V}_{D1} = 324V < V_{RRM} = 600V \text{ pour BYX38-600}$$

Donc BYX38-600 vérifie tous les critères

17/00