Onda rettangolare e onda quadra

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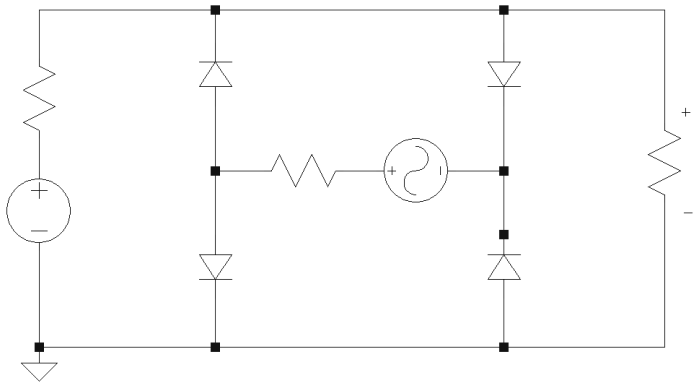
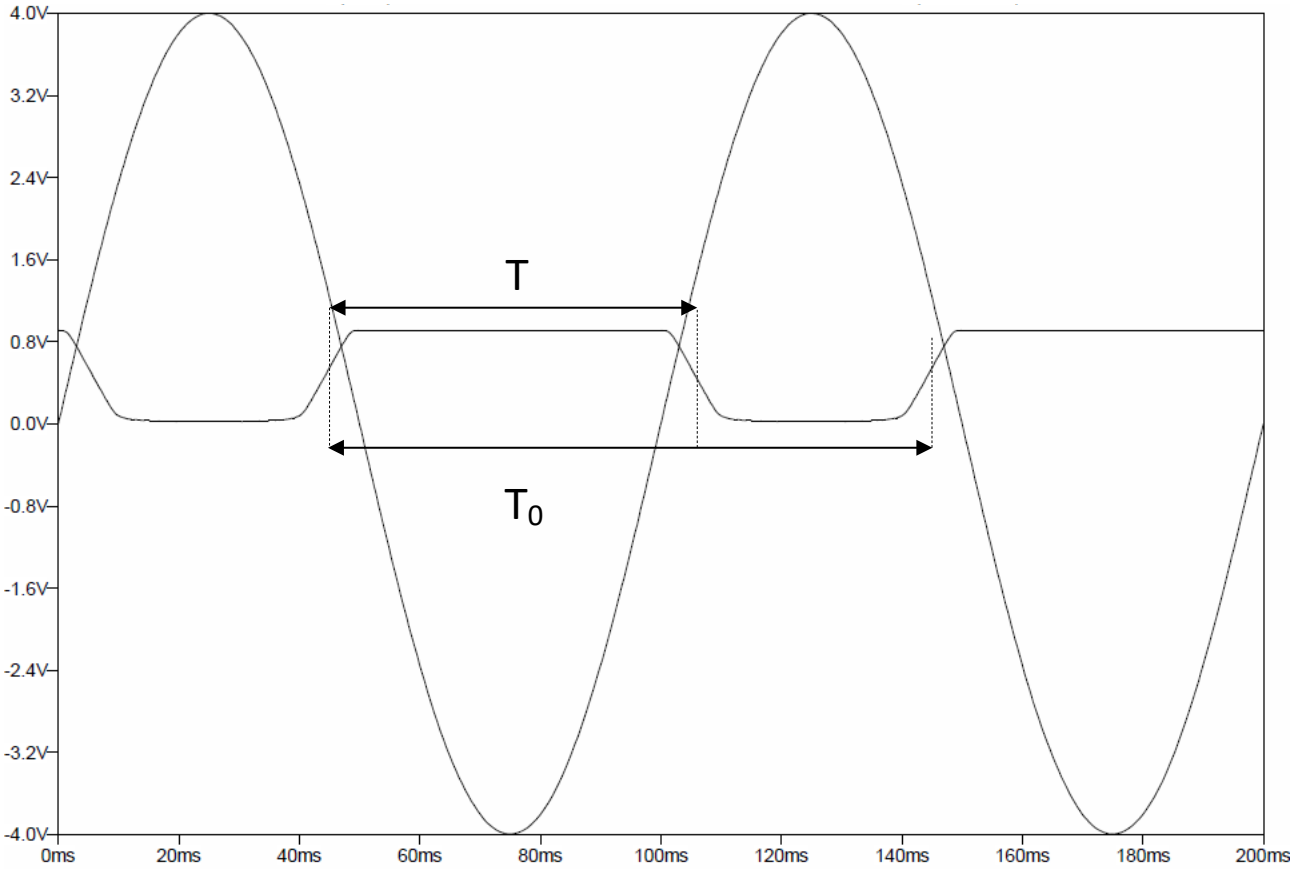
Segnale onda rettangolare

Modello circuitale semplificato:



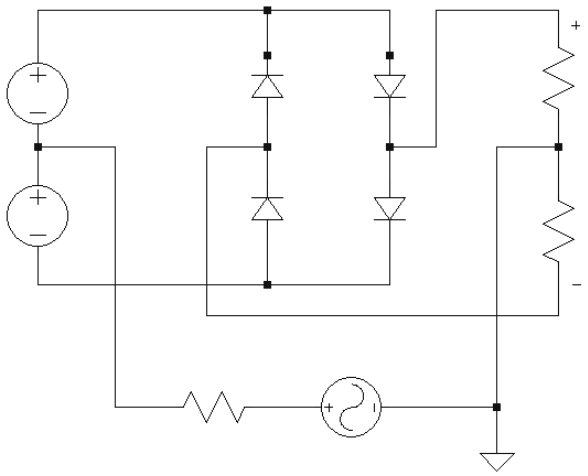


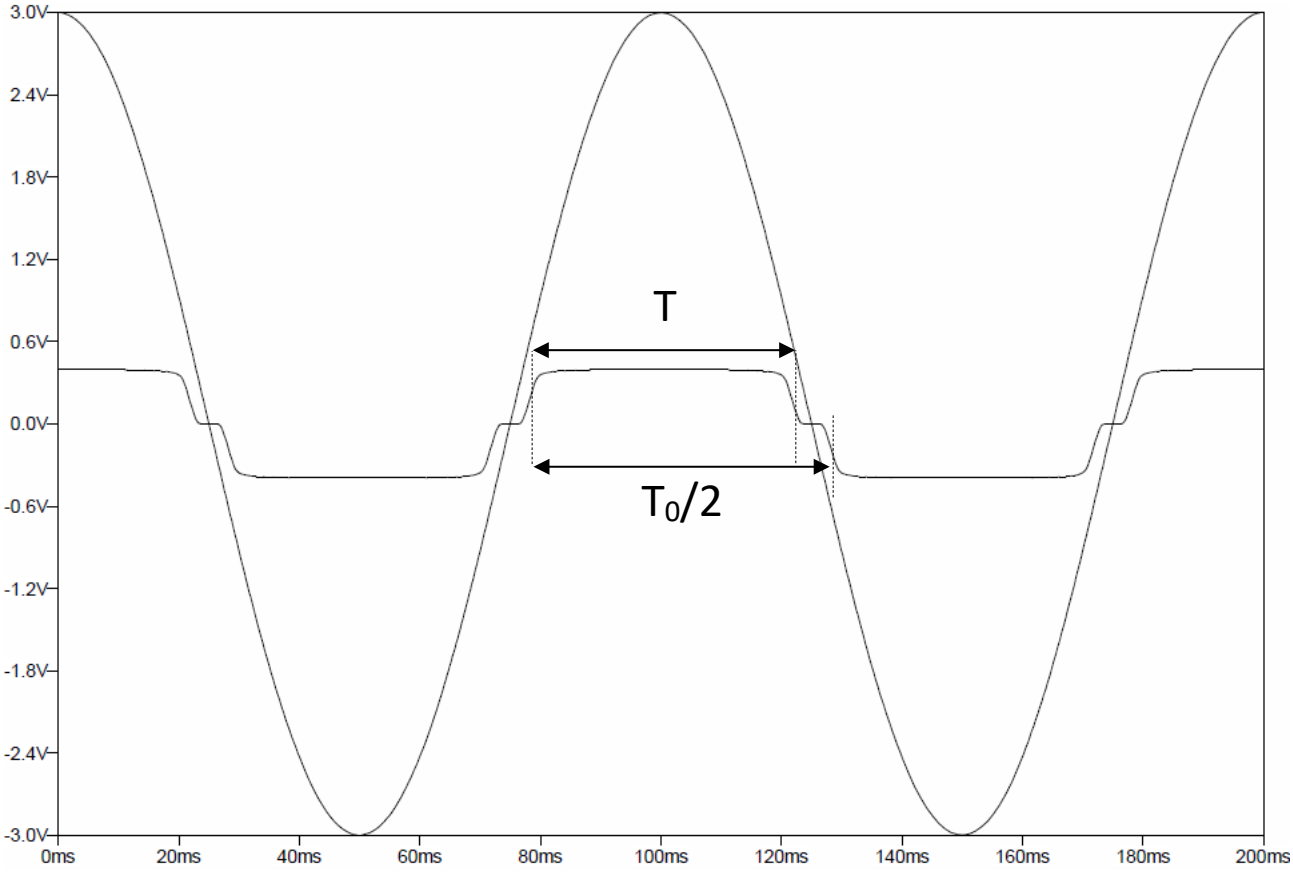
Segnale onda rettangolare:

$s(t) = A \cdot \left[D + 2\sum_{n=1}^{+\infty} \frac{\sin(\pi n D)}{n\pi} \cos(2\pi n f_0 t) \right]$ in cui: $D = \frac{T}{T_0}$ rappresenta il duty cycle, $T_0 = \frac{1}{f_0}$ il periodo dell'onda, $T < T_0$ la durata della finestra temporale e A l'ampiezza.

Segnale onda quadra

Modello circuitale semplificato:





Segnale onda quadra:

$$s_1(t) = A \cdot \left[D + 2\sum_{n=1}^{+\infty} \frac{\sin(\pi n D)}{n\pi} \cos(2\pi n f_0 t) \right];$$

$$s(t) = s_1(t) - s_1\left(t - \frac{T_0}{2} \right) = 4A \cdot \sum_{\substack{n=1 \\ (dispari)}}^{+\infty} \frac{\sin(\pi n D)}{n\pi} \cos(2\pi n f_0 t).$$

Claudio Fontana 06/11/2013