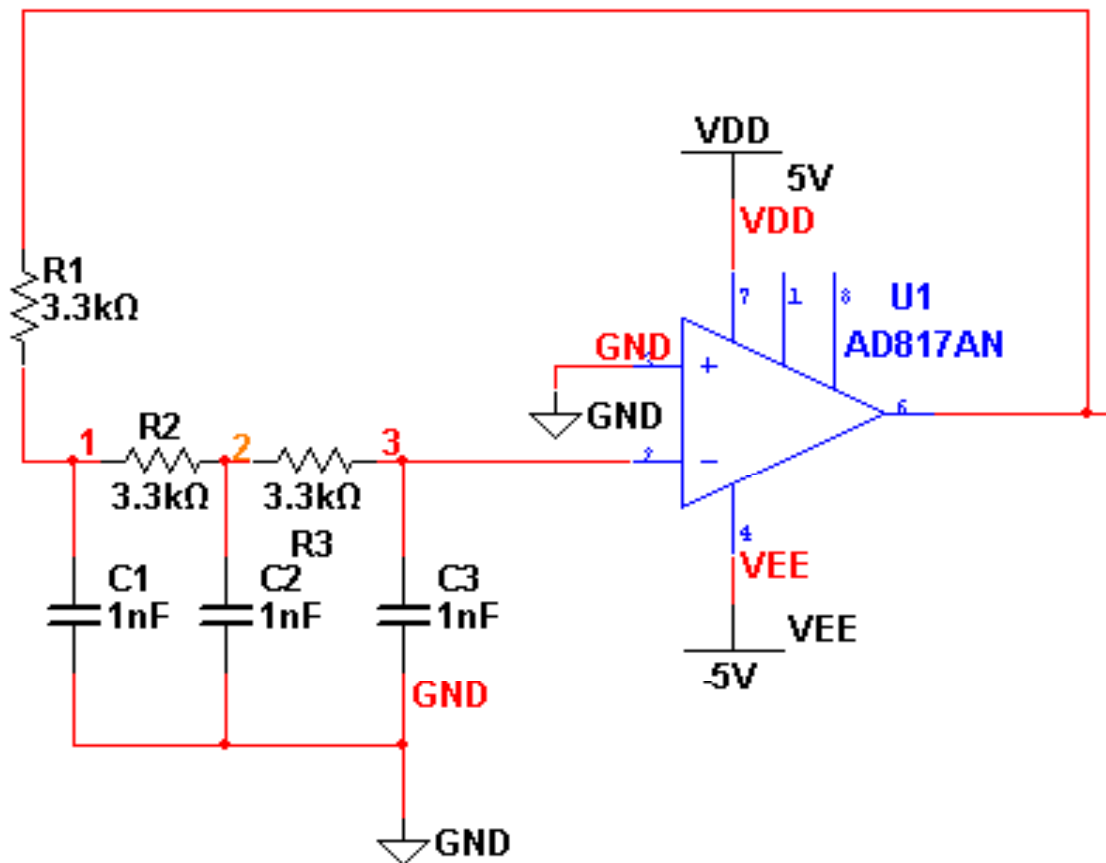


Phase Shift Pulse Width Modulator



$$V_C = \frac{X_C \angle -90^\circ}{R - jX_C}$$

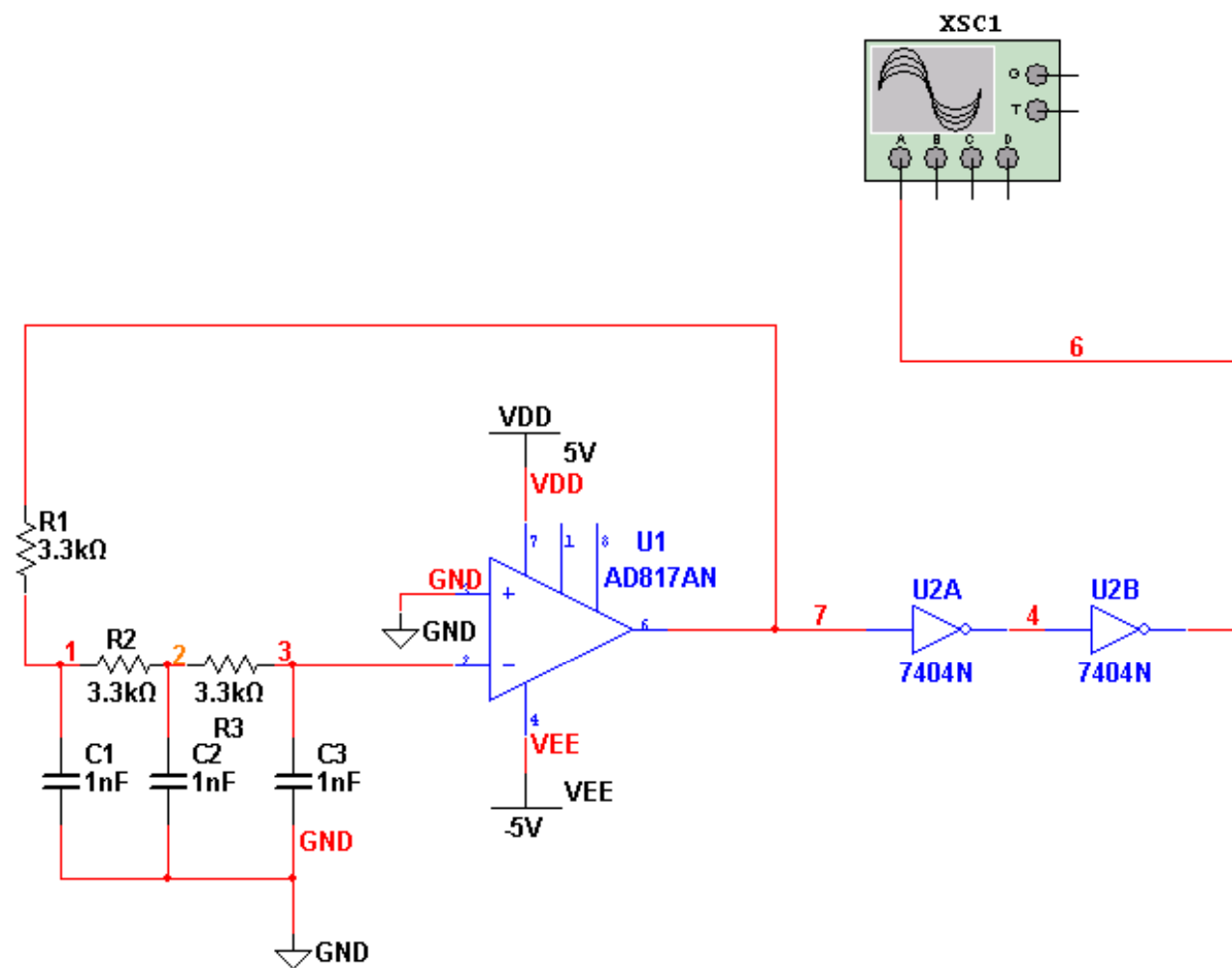
$$V_C = \frac{X_C \angle -90^\circ}{\sqrt{R^2 + X_C^2} \angle \arctan\left(\frac{-X_C}{R}\right)}$$

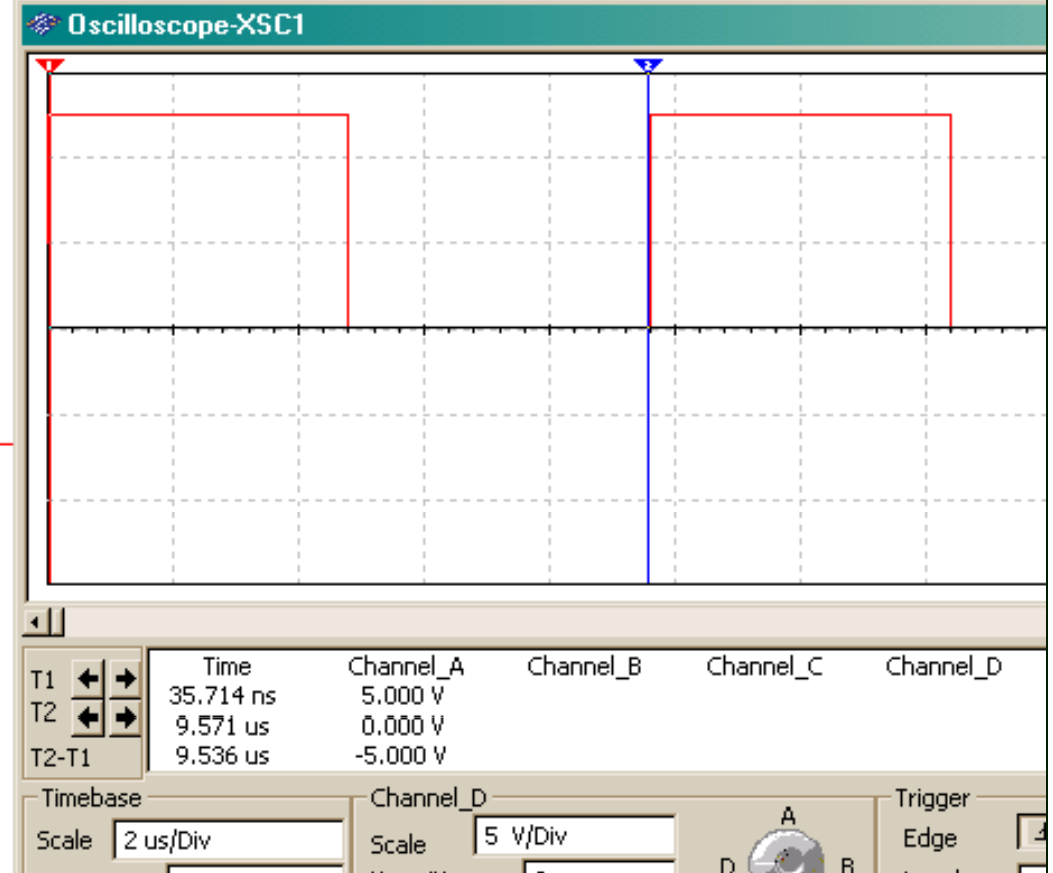
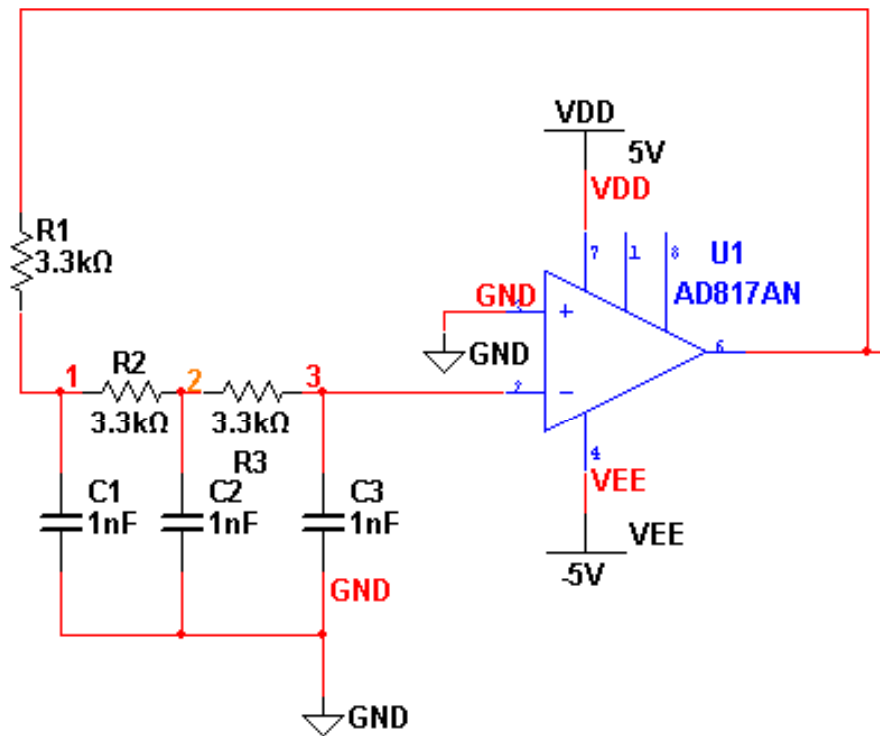
$$\angle V_C = -90^\circ - \arctan\left(\frac{-X_C}{R}\right)$$

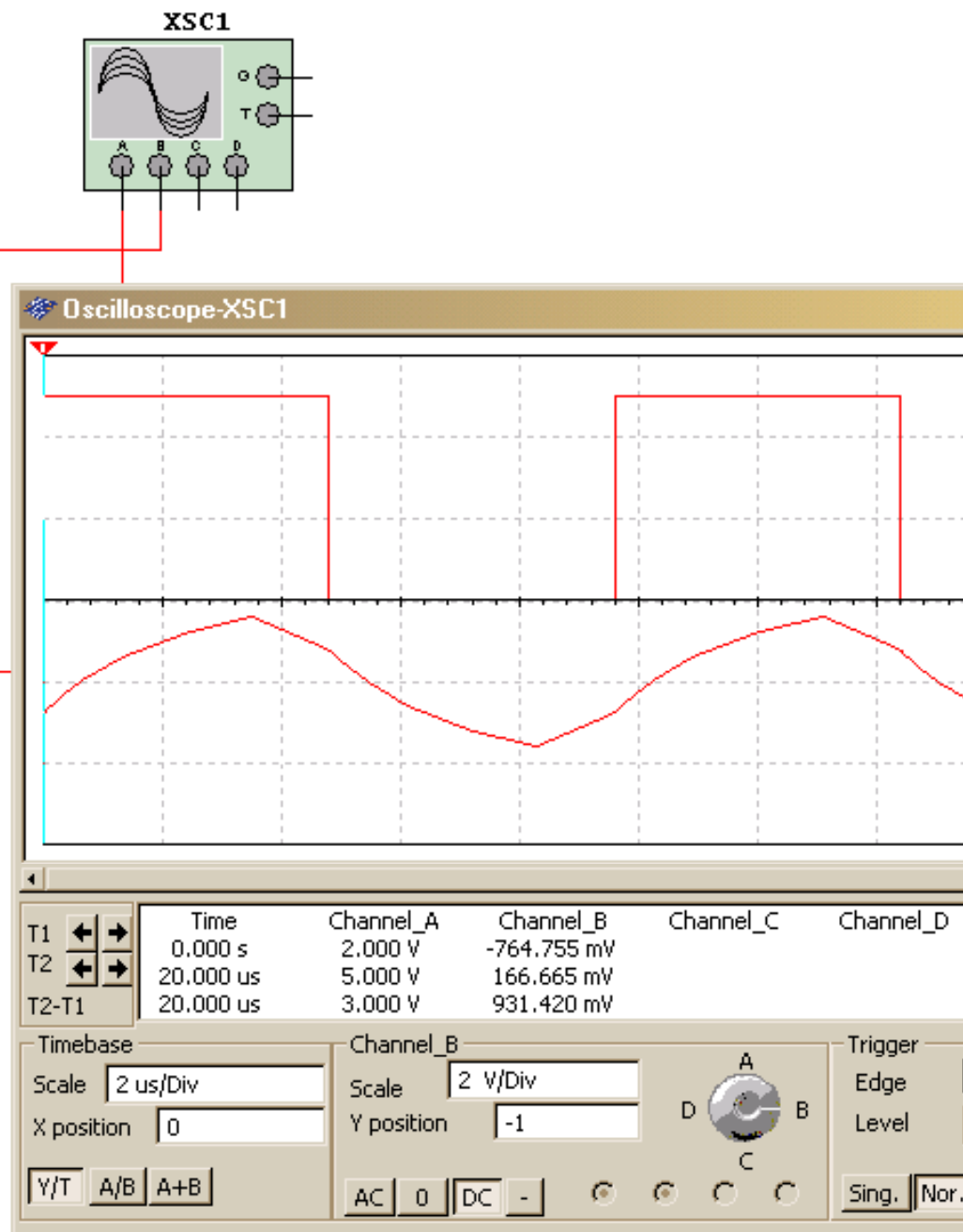
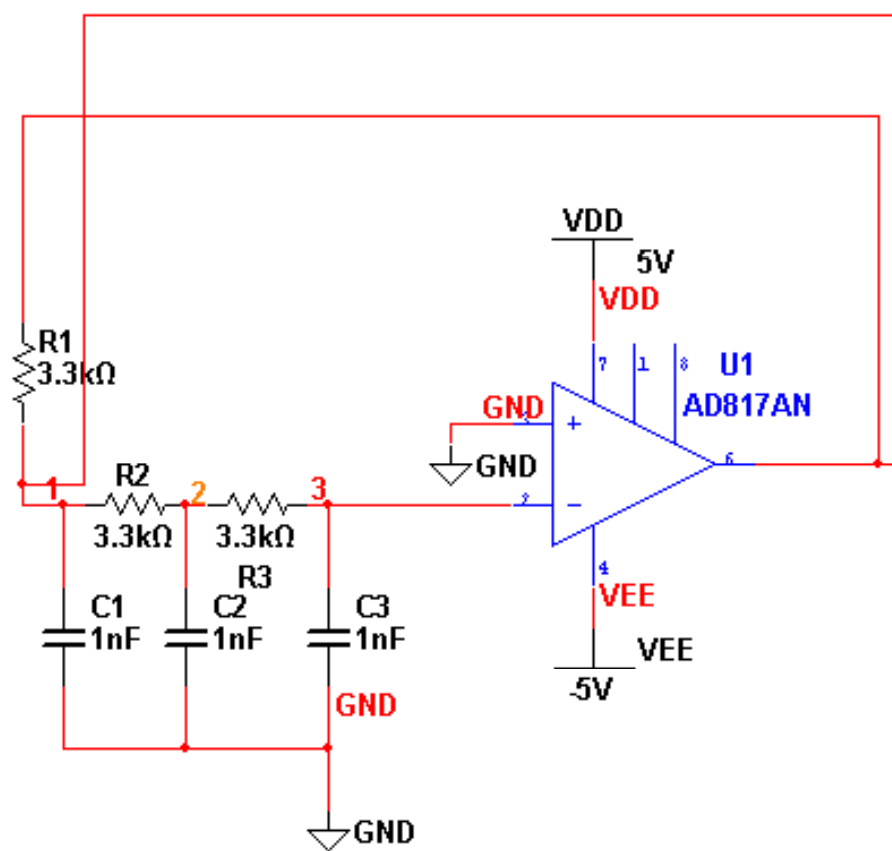
$$-60^\circ = -90^\circ + \arctan\left(\frac{X_C}{R}\right)$$

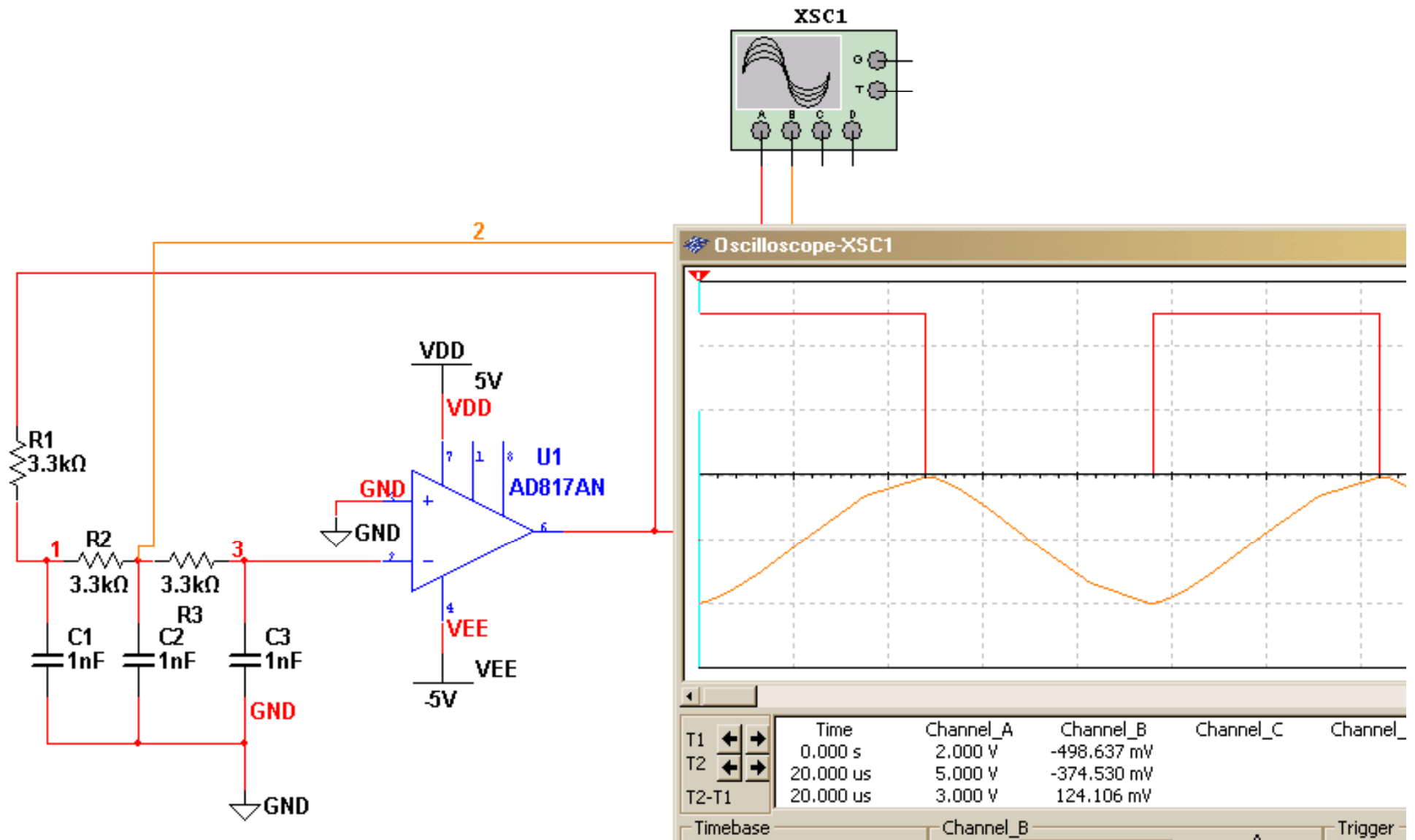
$$\tan(30^\circ) = \frac{X_C}{R}$$

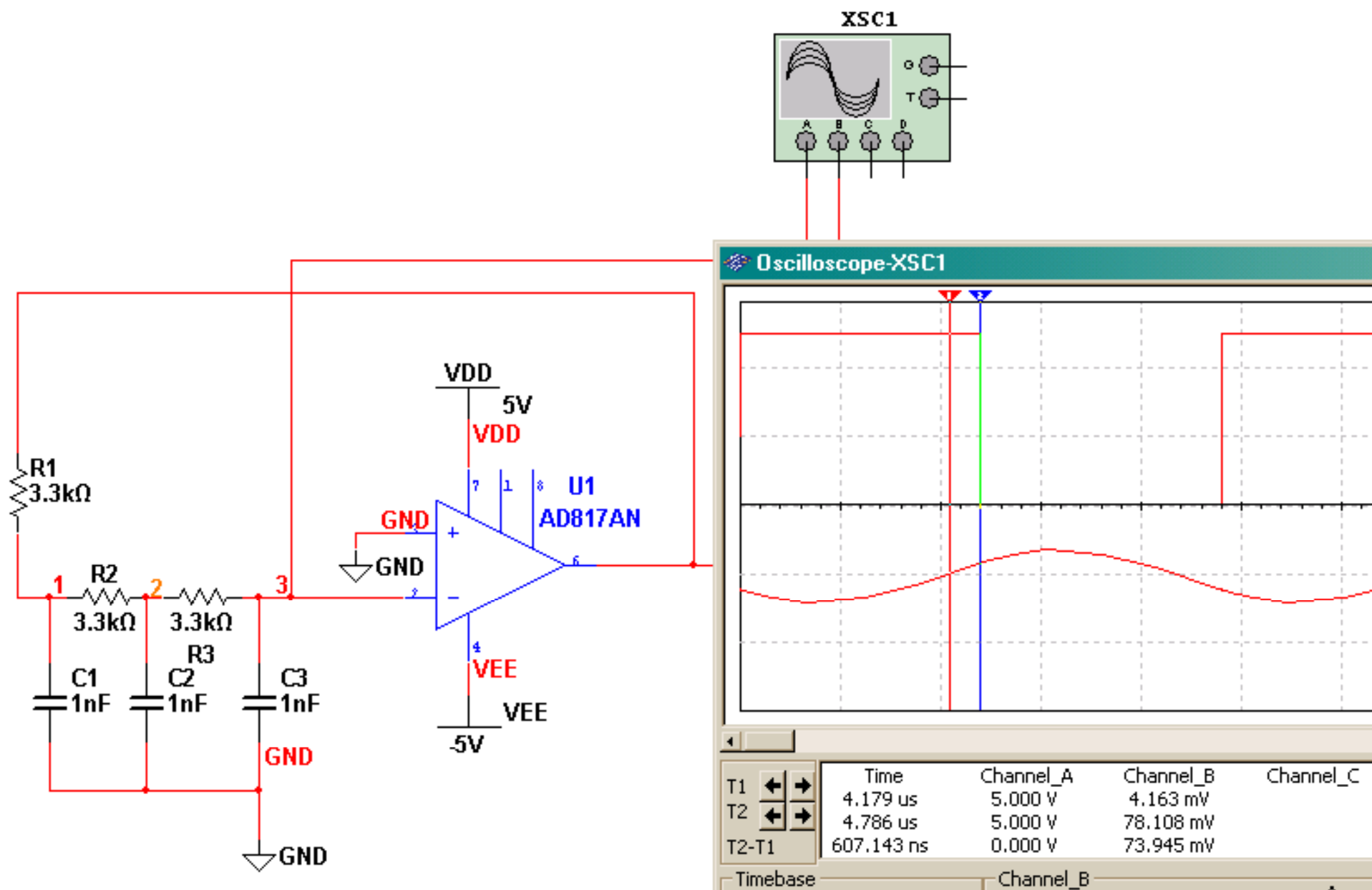
$$f_{-60^\circ} = \frac{1}{2\pi(0.577)RC}$$



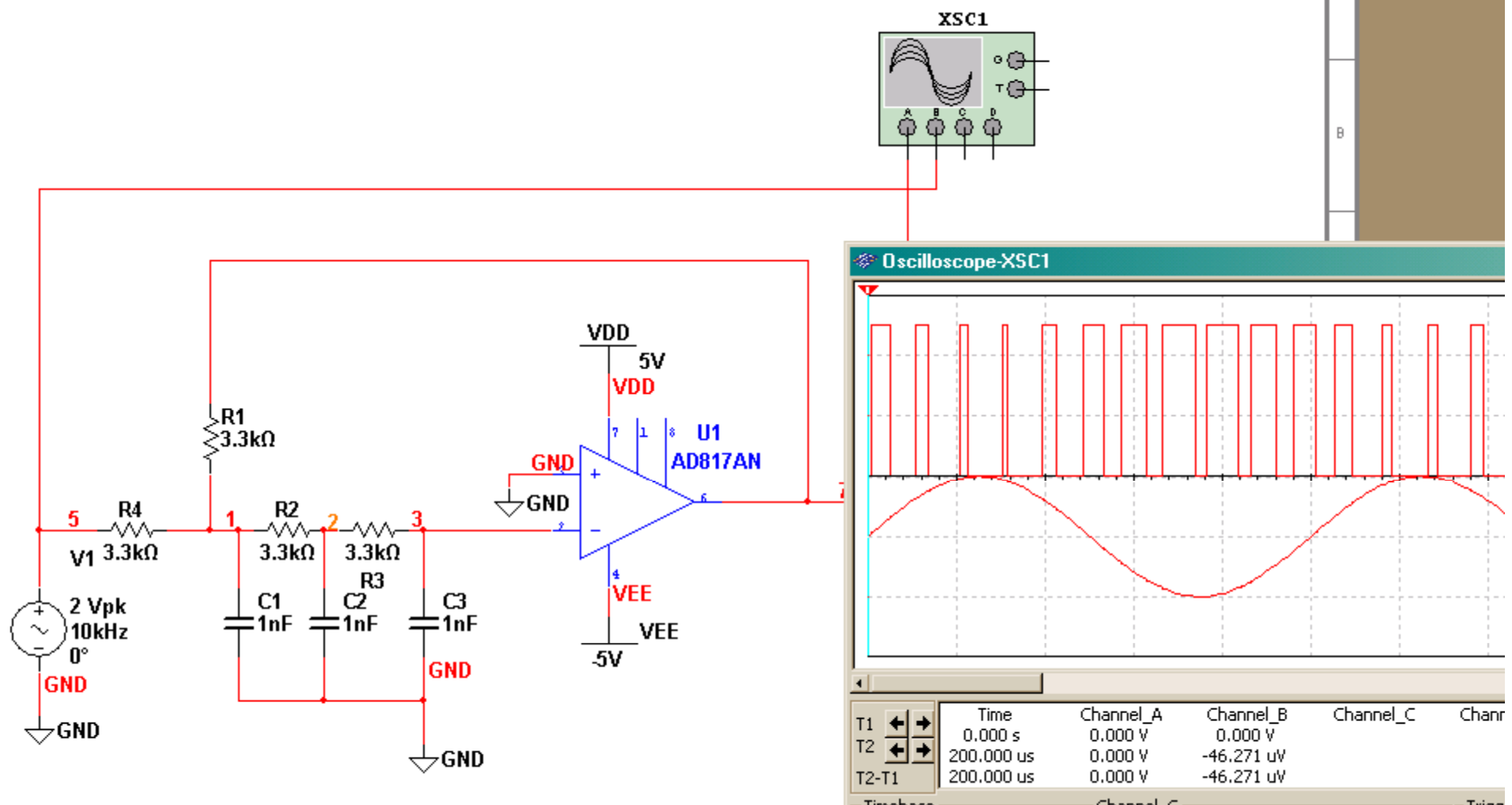




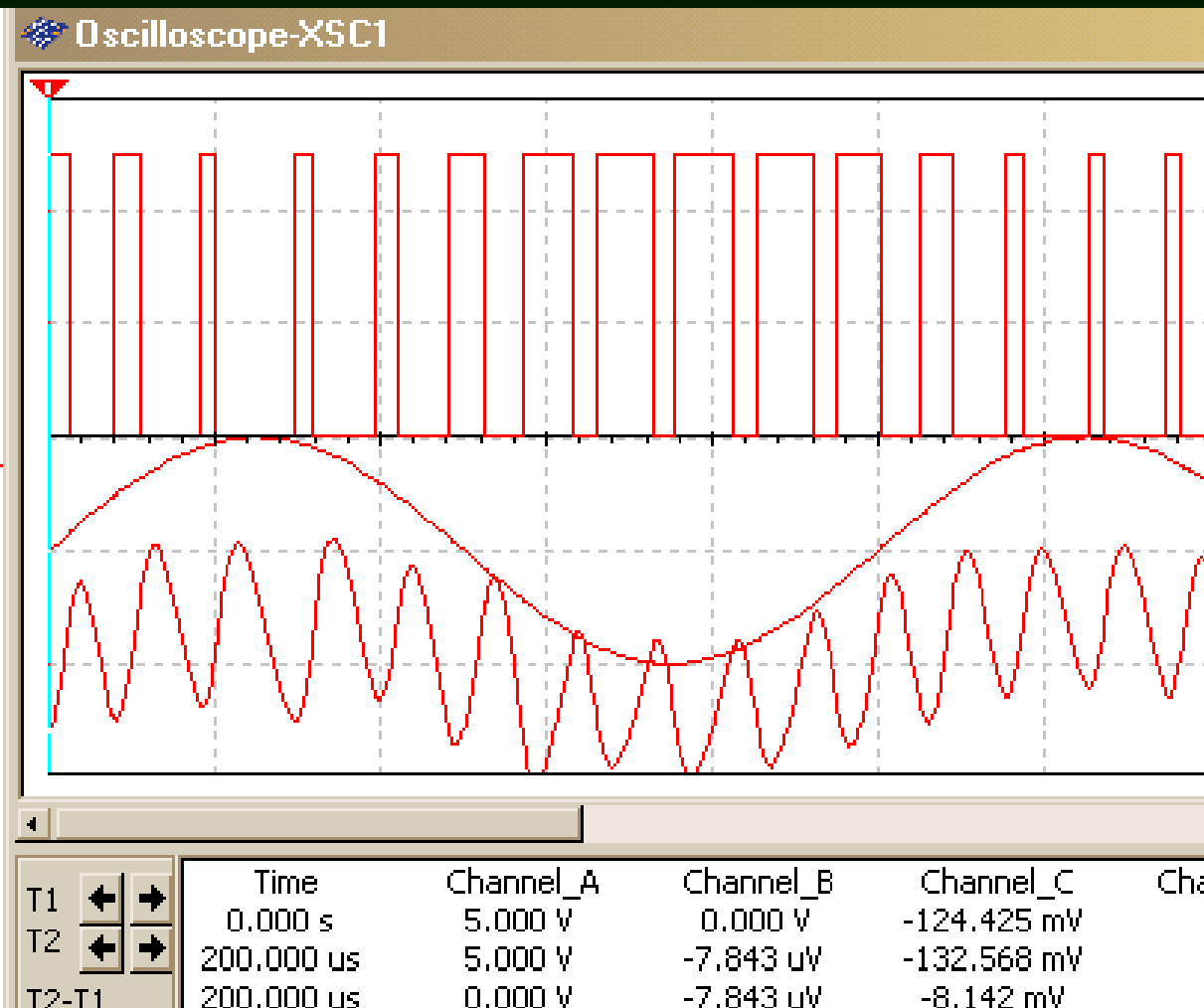




Pulse Width Modulation

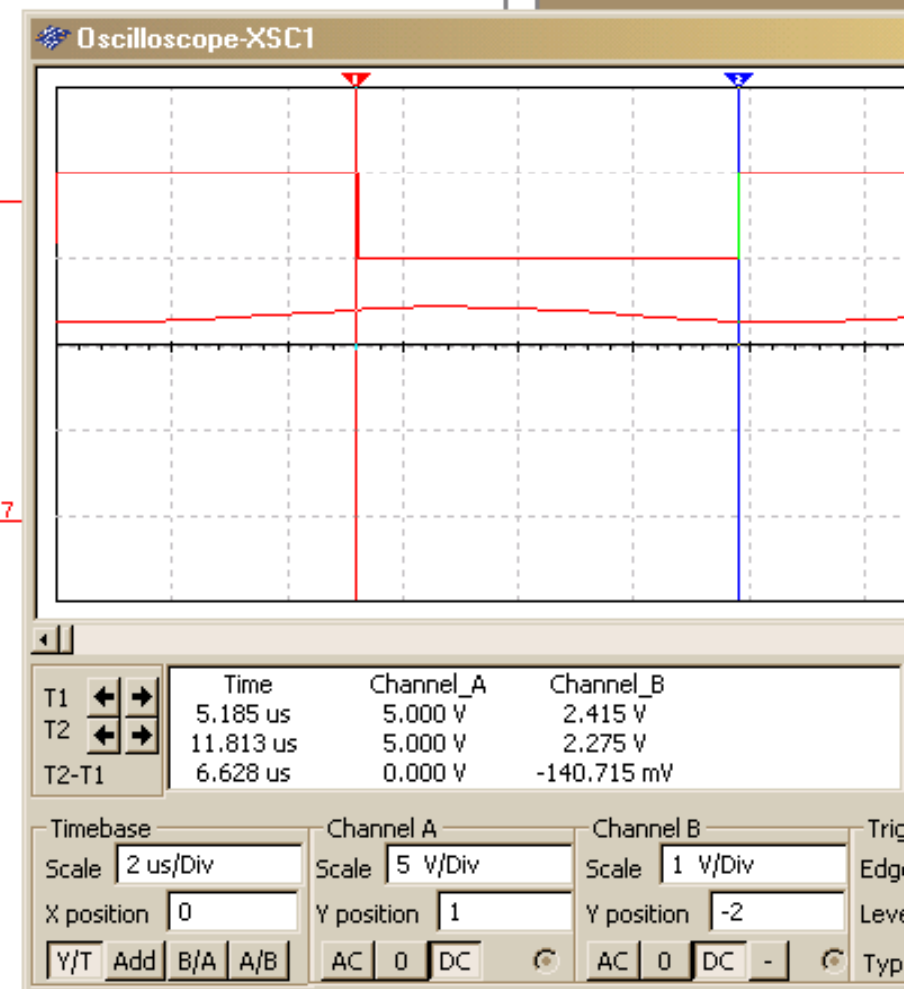
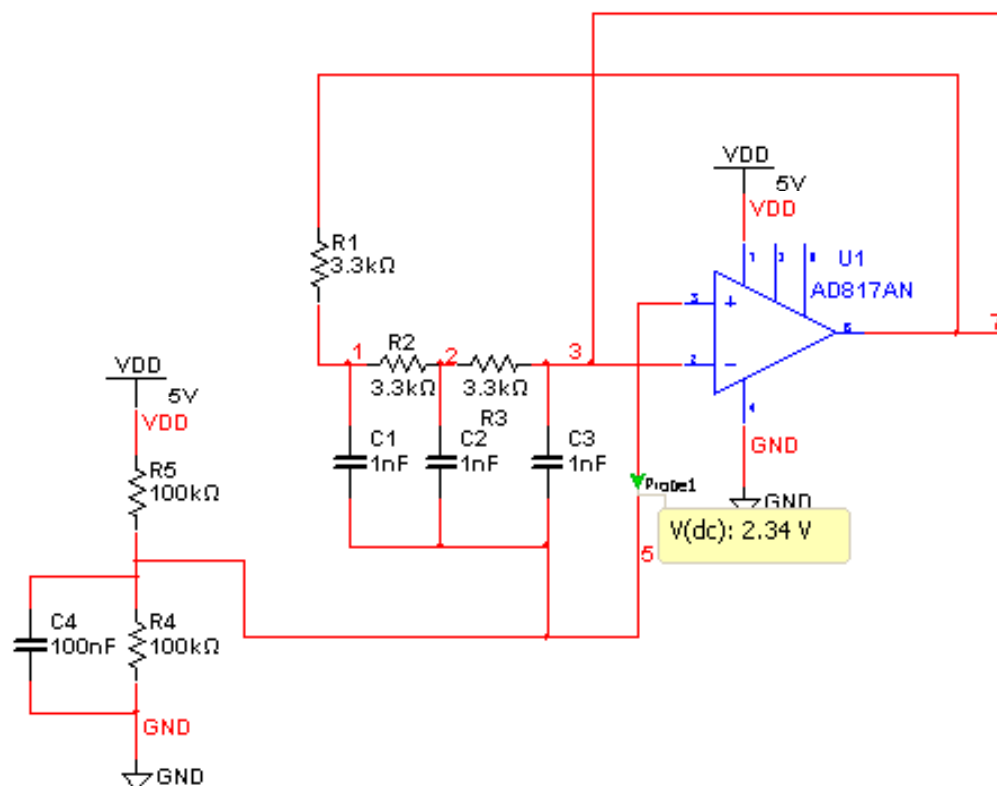


PWM

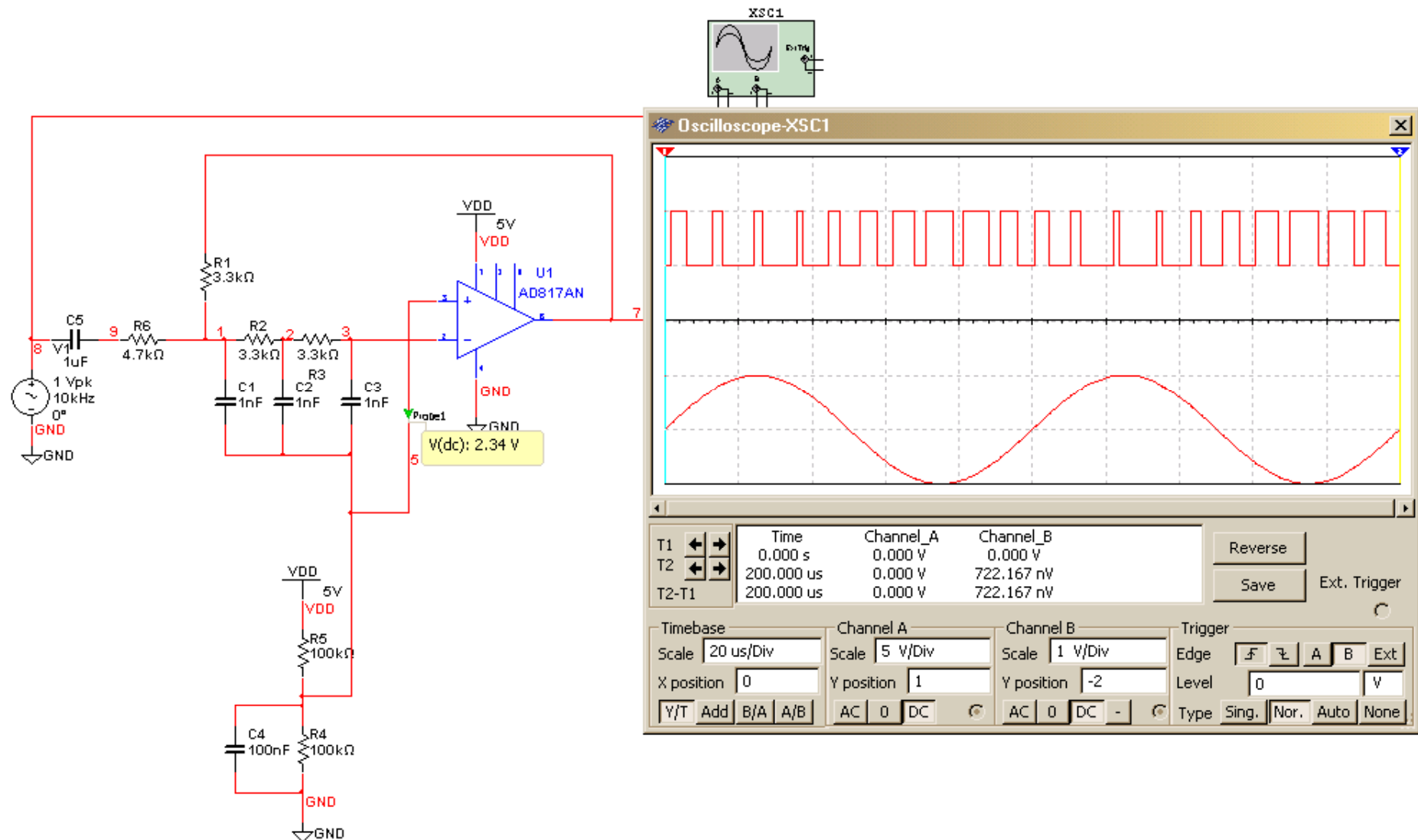


- ◆ Audio input shifts the dc of the feedback
- ◆ Feedback crosses common at different position
- ◆ pwm

Single Supply



Audio input couples C5 & R6



TL712 Dual Output Comparator

