Calculate Frequency of Damped RLC Oscillator

$$\omega' = \sqrt{\omega^2 - (R/2L)^2}$$

$$\omega' = \sqrt{\left(\frac{1}{\sqrt{LC}}\right)^2 - (R/2L)^2}$$

where L=90mH

C=.6μF

R=60Ω + 4.5Ω ($R_{inductor\ @\ 90mH}$) + 50Ω (output impedence of F.G.)

R_{TOT}=114.5Ω

$\frac{\omega'}{2\pi}$ = 677.37 Hz T= 1.4ms

Calculate Time of Oscillation Envelope Decay

How long will it take envelope to decay to 1/e of its initial value?

$$e^{\frac{-Rt}{2L}} = 1/e$$

$$\frac{-Rt}{2L} = -1$$

t=2L/R

t=1.57ms

4/11/2001 Bil :)