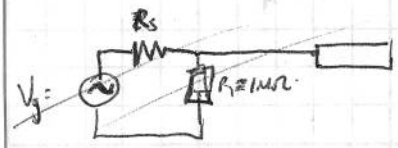


FIGURE 1

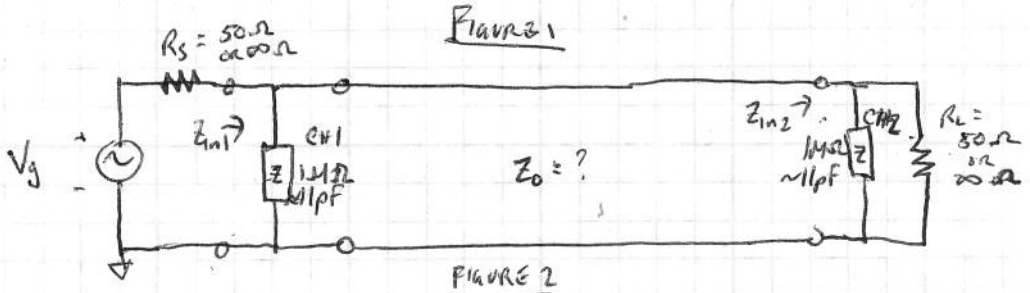
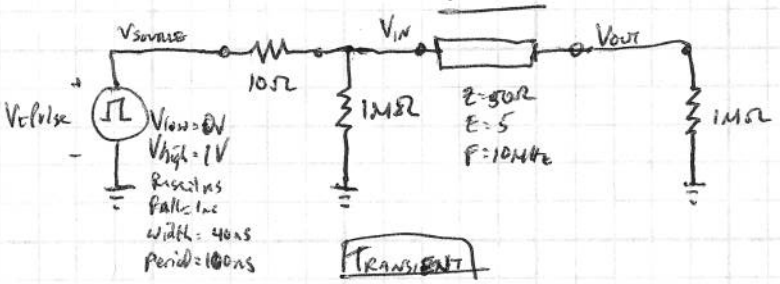


FIGURE 2



TRANSIENT
Stop time = .4 usec
Max time step = 1 ns

THE SOURCE RESISTANCE IN FIGURE 1 HAS EITHER 50 OR INFINITE ~~OHMS~~ OHMS WHEREAS FIGURE 2 HAS A 10Ω SOURCE-LIKE IMPEDANCE. THE INPUTS TO THE FUNCTION GENERATOR HAVE 1MΩ (11pF) RESISTANCES WHICH ARE COMPARABLE TO THE 10MΩ RESISTERS IN FIGURE 2. THE T-LINE (LONG COAX) IN FIGURE 1 HAS AN UNDETERMINED CHARACTERISTIC IMPEDANCE SINCE WE ARE NOT GIVEN WHAT TYPE OF COAX IS USED, ASSUMING 50 (RG-58) OHM COAX THEY WOULD BE THE SAME. THESE FIGURES WOULD BE CLOSE TO THE SAME IF IN FIGURE 1 WE CHOSE TO SET THE FUNCTION GENERATOR TO 50Ω SOURCE IMPEDANCE AND LEAVE THE OTHER END OF THE T OPEN SO THE RESISTANCE SEEN AT THE LOAD IS 1MΩ.

CALCULATIONS

$\beta = \frac{2\pi}{\lambda}$, $\lambda = \frac{v_p}{f} = \frac{2E8}{10E6} = 20$, $\beta = \frac{\pi}{10}$

$\beta l = 5$

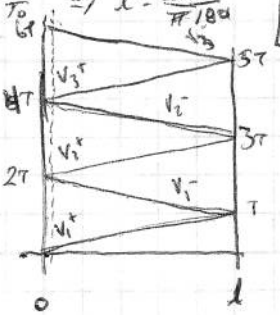
$\beta = \frac{\pi}{10} \Rightarrow l = \frac{50\pi}{\pi 180}$

PHYSICAL LENGTH = $\frac{5}{\pi 180}$ m ≈ ~~.298~~ m

SETTLING TIME 10T

= ~~796~~ ns = 13.9ns

$V_\infty = 1\frac{\Omega}{\Omega}$



$\Gamma_L \approx 1$

$\Gamma_g \approx -\frac{2}{3}$

$V_1^+ = \frac{5}{6}$ V

$V_1^- = \frac{5}{6}$ V

$V_2^+ = \frac{50}{99}$

$V_2^- = \frac{-5}{9}$ V

$V_3^+ = \frac{10}{27}$ V

$V_3^- = \frac{10}{27}$ V

$V_4^+ = \frac{-20}{81}$

$V_4^- = \frac{-20}{81}$

$V_5^+ = \frac{40}{243}$

$V_5^- = \frac{40}{243}$