IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.57
Volume 4, Issue 2, January 2024

A Study on the Effect of TVS Diode in a Transmission Line with RLC Series Load and PWL Signal Input

Anupendra Singh
Sr.Lecturer, Department of Electronics and Telecommunication,
Government Women Polytechnic College, Jabalpur, Madhya Pradesh, India

Abstract: *Transmission lines are of different types and different types of loads are connected across it as per application. Transmission lines respond differently for different types of loads connected across its terminals. Ideally we want original signal to be transmitted through transmission line and identical signal received at receiver end. Due to different reasons this signal gets distorted and original signal is not received at receiver terminal.*

Voltage fluctuations taking place due to various reasons affect the original signal and distort it. Fluctuations arise due to numerous reasons. Lightning and electric and magnetic effects of nearby transmission lines are a few common reasons for signal distortion. Effect of these voltage fluctuations is to be minimized. TVS diode is one such tool to minimize the effects of voltage fluctuations. In this paper we have simulated a transmission line with RLC series load. A TVS diode is connected across the RLC series load and an Piece Wise Linear(PWL) signal is applied across the transmission line input terminals and responses of the transmission line at different node points are studied. Simulation results at different node points of the circuit are recorded in JPEG image form and published in this paper.

Keywords: LT spice software , transmission line ,TVS diode, simulation