Abstracts

Unified Analytical Expressions for Calculating Resonant Frequencies, Transimpedances, and Equivalent Input Noise Current Densities of Tuned Optical Receiver Front Ends

Q.Z. Liu. "Unified Analytical Expressions for Calculating Resonant Frequencies, Transimpedances, and Equivalent Input Noise Current Densities of Tuned Optical Receiver Front Ends." 1992 Transactions on Microwave Theory and Techniques 40.2 (Feb. 1992 [T-MTT]): 329-337.

Unified analytical expressions have been derived for calculating the resonant frequencies, transimpedances and equivalent input noise current densities of the four most widely used tuned optical receiver front ends built with FET's and p-i-n diodes. A more accurate FET model has been used to improve the accuracy of the analysis. The Miller's capacitance has been taken into account, and its impact run the performances of the tuned front ends has been demonstrated. The accuracy of the expressions has been verified by Touchstone simulations. The agreement between the calculated and simulated performances of the front ends is very good. The expressions can be used to investigate the performances of different tuned front ends in a very simple way and provide a good starting point for further computer optimization of the front ends.

❑ Return to main document.