Abstracts

Microwave Switching by Crystal Diodes

M.R. Millet. "Microwave Switching by Crystal Diodes." 1958 Transactions on Microwave Theory and Techniques 6.3 (Jul. 1958 [T-MTT]): 284-290.

This paper gives the results of an investigation of the use of a microwave crystal as an RF switching element. Variation of a dc bias applied to the crystal will change its impedance, thereby providing an electronic control of microwave power. Empirical data are correlated with the physical structure of the crystal and its equivalent circuit to establish the frequency and power limitations of the switch. A comparison is also made of the switching properties of germanium and silicon crystals. Curves are given for predicting the switching capacity of any diode once its impedance has been normalized with respect to the characteristic impedance of the waveguide. Some methods are suggested for improving the bandwidth and power capacity of the crystal switch.

❑ Return to main document.