# Abstracts

## A Ka-Band PIN-Diode Switch with Extremely Large On-Off Ratio

*R.D. Weglein, D.Y. Kim, R.E. Johnson and L.D. Darlington. "A Ka-Band PIN-Diode Switch with Extremely Large On-Off Ratio." 1983 MTT-S International Microwave Symposium Digest 83.1 (1983 [MWSYM]): 142-144.*

The performance of a Ka-Band PIN-diode switch. configured in double-ridged WR-28 waveguide and composed of up to six contiguous, self-contained modules is described. The large isalation, greater than 70 dB in the OFF state, while maintaining 1 dB minimum insertion loss in the ON state, is obtained through the application of the traveling-wave concept. The switch at present exhibits in excess of 10% bandwidth near 35 GHz in both states. Switching times of the silicon mesa diodes, measured on several completed assemblies, is 10-15 nanoseconds from OFF to ON state and less than five nanoseconds in the reverse sequence. These results are compared with predictions based on a cascaded circuit model using measured diode, parasitic and transmission line elements. The empirical relationship af peak power and switching times in PIN-diodes are used to predict the performance of a fully developed K/sub a/-Band PIN-diode switch.

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