Abstracts

Some Designs of X/sub L/ Band Diode Switches

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X/sub L/-band waveguide switches, using PIN diodes for the switching elements, were developed in the SPST, SP2T, SP4T, and SP8T configurations. At the frequency of 7.75 GHz, for which they were tuned, they exhibited insertion losses on the average of 0.1, 0.4, 0.6, and 1.1 dB, respectively. In all cases, the signal going out of each switch port when turned OFF decreased in excess of 29 dB. The bandwidth of each switch, whose values are indicated, is narrower for the switch which has the larger number of ports or which contains diodes of lower capacitance. Semiempirical formulas are developed which predict performance characteristics of the SPST switch in particular.

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