Abstracts

High-isolation W-band MEMS switches

J. Rizk, Guan-Leng Tan, J.B. Muldavin and G.M. Rebeiz. "High-isolation W-band MEMS switches." 2001 Microwave and Wireless Components Letters 11.1 (Jan. 2001 [MWCL]): 10-12.

This paper presents the design, fabrication and measurement of single, T-match and /spl pi/-match W-band high-isolation MEMS shunt switches on silicon substrates. The single and T-match design result in -20 dB isolation over the 80-110 GHz range with an insertion loss of 0.25/spl plusmn/0.1 dB. The /spl pi/-match design results in a reflection coefficient lower than -20 dB up to 100 GHz, and an isolation of -30 to -40 dB from 75 to 110 GHz (limited by leakage through the substrate). The associated insertion loss Is 0.4/spl plusmn/0.1 dB at 90 GHz. To our knowledge, this is the first demonstration of high-performance MEMS switches at W-band frequencies.

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