Abstracts

Micromachined frequency-variable impedance tuners using resonant unit cells

Sanghwa Jung, Kyungteh Kang, Jae-Hyoung Park, Ki-Woong Chung, Yong-Kweon Kim and Youngwoo Kwon. "Micromachined frequency-variable impedance tuners using resonant unit cells." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 333-336 vol.1.

This paper presents a new type of micromachined impedance tuners using frequency-variable resonant unit cells. Impedance tuners using resonant unit cells realized by tunable micromachined capacitors showed a wide tuning range equivalent to almost two quadrants of the Smith chart with a high maximum VSWR of 21.2 at Ka-band. Frequency variability is also provided through the use of J-inverters with tunable capacitors. Micromachined tuners are very promising for low-loss tuning of the monolithic circuits as well as accurate noise and power characterization.

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