Abstracts

Radiation leakage from an under metallized silicon cavity

Y. Wu, Q. Chen, V.F. Fusco, M. Zheng and P.S. Hall. "Radiation leakage from an under metallized silicon cavity." 1999 MTT-S International Microwave Symposium Digest 99.3 (1999 Vol. III [MWSYM]): 1331-1334 vol.3.

In this paper a cavity resonator is formed using stacked 10-20 /spl Omega/-cm resistivity micromachined silicon laminates. The cavity exhibits a loaded Q factor of 340 and is deliberately under metallized using copper (as opposed to the more commonly used aluminium) so that electronic field penetration of the cavity at 34 GHz occurs. Hence a part of the resonator energy penetrates into the silicon body of the cavity through the metal film, this energy is then radiated to free space through the high resistivity silicon material forming the cavity structural support. Tests reveal that the under metallized cavity may be used as an antenna.

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