Abstracts

A new micromachined overlap CPW structure with low attenuation over wide impedance ranges

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A new micromachined overlay CPW with the edges of the center conductor partially elevated and overlapped with the ground, is developed to achieve low loss over wide impedance ranges. Overlay CPW helped to reduce conductor loss by reducing field concentration and current crowding at the edges of the signal lines. It also offered a screening effect from the substrate losses by concentrating the electric field between the conductor plates. For comparison, three different CPW structures were simulated and fabricated on glass substrates. The overlay CPW showed the largest impedance range and the lowest loss. The overlay CPW using MEMS technology is a good candidate for a uniplanar transmission line medium at mm-wave frequencies.

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