

遮蔽導体によるマイクロストリップミアンダ線路の位相遅延時間の改善

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Improving Phase-Delay Time Characteristics of Microstrip Meander Line with Shielding Conductor

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Abstract

In today's high-speed digital processing circuits meander lines, which intentionally zigzag to create a delay time, are used in order to match the timing between two or more signals. In the design of a delay line using a meander line, when the meander line is constructed with a shortened conductor in the parallel section of the hairpin, it is necessary to increase the number of meanders. In consequence, the number of corners is increased, which in turn shortens the delay time. On the other hand, when the delay line is constructed with a meander line with a small number of corners, it is necessary to make the conductor length in the hairpin parallel section longer. Increasing the length of the hairpin conductor causes increased coupling between the parallel conductors, which leads to a deterioration of the frequency characteristics of the phase-delay time. This paper reports the development of a microstrip meander line with a long parallel conductor section that is shielded by grounded conductors; the frequency characteristics of the phase-delay time were improved by the grounded conductors.

Key Words: Meander Line, Phase-Delay Time, Shield, Method of Moments