Abstracts

Varactor Linear Microwave Phase Modulator

R.V. Garver. "Varactor Linear Microwave Phase Modulator." 1967 G-MTT International Microwave Symposium Program and Digest 67.1 (1967 [MWSYM]): 174-176.

A continuous phase modulator can be made by placing a varactor diode on one terminal of a circulator. Power in the first port of the circulator is reflected by the diode on the second port, and emerges from the third port with a phase and amplitude dictated by the reflection coefficient of the diode. As the reverse bias voltage of the varactor is varied the reflection coefficient magnitude remains high and the phase changes. The modulator requires very little modulation power and responds quickly to changes in modulation voltage. The phase modulator typically has a non-linear voltage-phase relationship, insertion loss that varies with phase, and less than 180° modulation. For most applications the phase should be linear with voltage, the insertion loss should not vary and the modulator should be able to provide 360° modulation.

❑ Return to main document.