Abstracts

Nonradiative dielectric waveguide using cordierite ceramics

N. Hiramatsu, T. Kishino, T. Okamura, H. Kii and D.A. Sagala. "Nonradiative dielectric waveguide using cordierite ceramics." 1999 MTT-S International Microwave Symposium Digest 99.4 (1999 Vol. IV [MWSYM]): 1785-1788 vol.4.

Nonradiative dielectric waveguide (NRD-guide) using low-loss cordierite ceramics (/spl epsiv//sub r/=4.9, tan /spl delta/=2.6/spl times/10/sup -4/ at 59 GHz) was examined at 60 GHz. High permittivity of the cordierite ceramics reduced the size of the waveguide compared with a conventional one of polytetrafluoro-ethylene (PTFE). The RF unit for 60 GHz FM-CW radar sensor was built in a 33 mm/spl times/33 mm/spl times/20 mm housing. We confirmed that the unit clearly detects a target located at distances of 5 to 148 m.

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