Abstracts

Low-loss sapphire waveguides for 75-110 GHz frequency range

D. Lioubtchenko, S. Dudorov, J. Mallat, J. Tuovinen and A.V. Raisanen. "Low-loss sapphire waveguides for 75-110 GHz frequency range." 2001 Microwave and Wireless Components Letters 11.6 (Jun. 2001 [MWCL]): 252-254.

Low-loss dielectric waveguides are promising for use instead of metal ones, but problems in transitions have to be overcome. A simple and effective structure made of a monocrystalline sapphire waveguide has been designed. Experimental results at 75-110 GHz indicate good matching with metal waveguides (VSWR /spl les/1.13) and low insertion loss (0.05-0.35 dB for 47 mm dielectric section).

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