Abstracts

A 60 GHz-band planar dielectric waveguide filter for flip-chip modules (2001 Vol. III [MWSYM])

M. Ito, K. Maruhashi, K. Ikuina, T. Hashiguchi, S. Iwanaga and K. Ohata. "A 60 GHz-band planar dielectric waveguide filter for flip-chip modules (2001 Vol. III [MWSYM])." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1597-1600 vol.3.

A planar dielectric waveguide filter with CPW I/O ports suitable for flip-chip bonding is proposed and demonstrated for 60 GHz-band applications. The filter is formed incorporating via holes in an alumina substrate. In order to improve a stop-band rejection, short-circuited CPW resonators with half wavelength are added to waveguide-to-CPW transitions. A fabricated 4-resonator filter exhibits an insertion loss of 2.8 dB with a 3 dB-bandwidth of 3.0 GHz and a rejection of 35 dB at a 3 GHz-lower-separation from a center frequency of 58.5 GHz. The filter is successfully mounted in a multi-layer ceramic package using flip-chip bonding.

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