Abstracts

Millimeter-wave ceramic package for a surface mount

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A surface mount type millimeter-wave ceramic package has been developed. Total insertion loss of a line on the board, a solder joint and a feedthrough of the package is 1.0 dB at 77 GHz. Standard deviation of the insertion loss is 0.08 dB (n=57). The package employs a feed-through of an electromagnetic coupling structure for vertical transmission of millimeter-wave signal. The electromagnetic coupling consists of microstrip line (MSL), slot, and MSL. General characteristics of the coupling has been studied. We have optimized the dimensions of the electromagnetic coupling to obtain largest margin for the production of ceramic lamination technology. Mass production of the package is now available. The package and its assembly will be key technologies for the new and big markets of millimeter wave application.

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