

Wide-Band Subharmonically Pumped W-Band Mixer in Single-Ridge Fin-Line

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A subharmonic mixer is described that has an instantaneous bandwidth of 11 to 14 GHz centered near 95 GHz. A wide bandwidth is achieved by the close integration of a low-capacitance diode mount, printed circuit matching elements, and simple yet effective filters which are uniquely suited to realization in a single-ridge fin-line. The mixer also has a two-terminal shunt mount that will accept two conventional beam-lead diodes or a single dual-junction device. With the latter, a minimum conversion loss of 8.5 dB has been achieved with a drive level of only 4 dBm at 45 GHz.

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