Abstracts

Low loss air-gap spiral inductors for MMICs using glass microbump bonding technique

Jeff Chuang, S. El-Ghazaly, N. El-Zein, V. Nair, G. Maracas and H. Gronkin. "Low loss air-gap spiral inductors for MMICs using glass microbump bonding technique." 1998 MTT-S International Microwave Symposium Digest 98.1 (1998 Vol. I [MWSYM]): 131-135.

Air-gap spiral inductor structures have been fabricated and itegrated with semiconductor substrates using glass microbump bonding (GMBB) techniques. Spiral inductors using air-gap structures have the advantages of low losses, and low parasitic capacitance compared to conventional inductors on doped silicon semiconductor substrate. Stacked air-gap spiral inductors on GaAs substrates using GMBB techniques also can reduce the inductor area. Because the glass microbump bonding techniques are simple, this bonding technique provides an alternative integration approach for monolithic microwave integrated circuits (MMICs). Experimental results of air-gap spiral inductor on both silicon and GaAs substrates are presented in this paper.

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