

# Abstracts

## Development of microwave/millimeter wave integral passives for multi-layer organic MCMs

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S. Manohar, Z. Jin, A. Pham, V. Krishnamurthy, D. Bates, W. Marcinkiewicz, B. Schmanski, R. Saia and L. Sprinceanu. "Development of microwave/millimeter wave integral passives for multi-layer organic MCMs." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1879-1882.

We present the design and development of the high-density multi-layer organic based MCMs at microwave/millimeter wave frequencies. Ta<sub>2</sub>N thin-film resistors have been developed and directly integrated onto Kapton and benzocyclobutene (BCB) flex that increases the packaging density and improves manufacturability. The experimental results demonstrate that the integral 50- $\Omega$  termination on multi-layer Kapton/BCB flex achieves a return loss of less than 20-dB up to 50 GHz.

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