Abstracts

Fully coupled electro-thermal simulation of MMICs and MMIC arrays based on a physical model

W. Batty, A.J. Panks and C.M. Snowden. "Fully coupled electro-thermal simulation of MMICs and MMIC arrays based on a physical model." 1999 MTT-S International Microwave Symposium Digest 99.2 (1999 Vol. II [MWSYM]): 693-696 vol.2.

The first completely physical coupled electro-thermal model, suitable for large signal simulation of MESFET and HEMT based MMICs and MMIC arrays, on a timescale suitable for CAD, is presented. The model is validated experimentally by high resolution thermal imaging of a MMIC 38 GHz 3-stage balanced amplifier, mounted on a Cu/FR-4 substrate and cooled entirely by natural convection and radiation into free space.

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