Abstracts

High linearity low-k BCB-bridged AlGaAs/InGaAs power HFETs (2002 Vol. I [MWSYM])

Hsien-Chin Chiu, Ming-Jyh Hwu, Shih-Cheng Yang and Yi-Jen Chan. "High linearity low-k BCB-bridged AlGaAs/InGaAs power HFETs (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 521-524 vol.1.

A novel low-k BCB (benzocyclobutene) bridged and passivated process for AlGaAs/InGaAs doped-channel power FETs with high reliability and linearity was characterized and developed. In this study, we applied the low-k BCB-bridged interlayer to replace the conventional air-bridged process and the SiN/sub x/ passivation technology of the 1 mm-wide power device fabrication. This novel process technique demonstrates a lower power gain degradation under a high input power swing, and exhibits an improved adjacent channel power ratio (ACPR) than the air-bridged ones due to its lower gate leakage current. The power gain degradation ratio of BCB-bridged devices under a high input power operation (P/sub in/ = 5/spl sim/10 dBm) is 0.51 dB/dBm, and this value is 0.65 dB/dBm of conventional air-bridged devices.

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