

Abstracts

A fully monolithic HMIC low noise amplifier

T. Boles. "A fully monolithic HMIC low noise amplifier." 1997 Radio Frequency Integrated Circuits (RFIC) Symposium 97. (1997 [RFIC]): 109-112.

A two/three stage monolithic silicon low noise amplifier has been designed utilizing SPICE modeling techniques. The circuit design architecture is based on high frequency, small signal BJTs, consisting of an grounded emitter stage at the input and a Darlington configured pair at the device output. A resistor network, with a bypass capacitor, is utilized not only to provide proper DC biasing for each stage, but also obtain impedance matching to 50 ohms at the circuit input and output and to provide RF feedback for the desired broad band gain response. A patented HMIC (Heterolithic Microwave Integrated Circuit) glass process is employed to provide both the required collector isolation between active device stages and as an extremely low loss dielectric medium for minimum parasitic, high Q passive, reactive elements.

 [Return to main document.](#)