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Abstract: A simplified approach to the parasitic elements of 2-gate figures GaN HEMT is introduced by pinch-off COLD FET S-Parameter. When extracting the parasitic parameter at pinch-off state, intrinsic circuit can be ignored as no current flows through it. As a result, if only taking extrinsic part into account, equivalent circuits constructed at different frequencies can extract different parasitic elements. With parasitic parameters from this approach, the simulation result of equivalent circuits agrees very well with experiments.

Keywords: Parasitic elements, GaN HEMT, COLD FET S-Parameter.