

A Novel Self Oscillating Class Phi2 Inverter Topology

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Abstract The class f2 is a single transistor, fast transient inverter topology often associated with power conversion at very high frequency (VHF: 30MHz-300MHz). At VHF, gate drivers available on the market fail to provide the adequate transistor switching signal. Hence, there is a need for new power topologies that do not make use of gate drivers but are still suitable for power conversion at VHF. In This paper, we introduce a new class f;2 topology that incorporates an oscillator, which takes the drain signal through a feedback circuit in order to force the transistor switching. A design methodology is provided and a 1MHz 20V input prototype is built in order to validate the topology behaviour.

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