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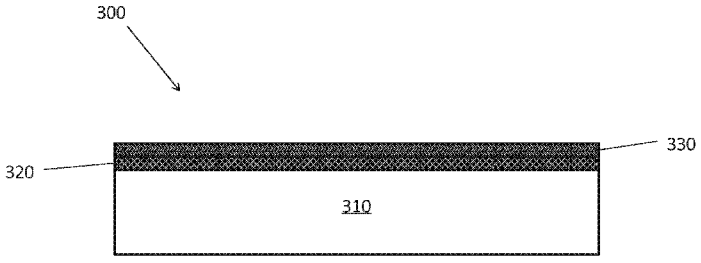


FIGURE 3

(57) Abstract: Method and devices are disclosed for device manufacture of gallium nitride devices by growing a gallium nitride layer on a silicon substrate using Atomic Layer Deposition (ALD) followed by rapid thermal annealing. Gallium nitride is grown directly on silicon or on a barrier layer of aluminum nitride grown on the silicon substrate. One or both layers are thermally processed by rapid thermal annealing. Preferably the ALD process use a reaction temperature below 550 °C and preferable below 350°C. The rapid thermal annealing step raises the temperature of the coating surface to a temperature ranging from 550 to 1500°C for less than 12 msec.

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