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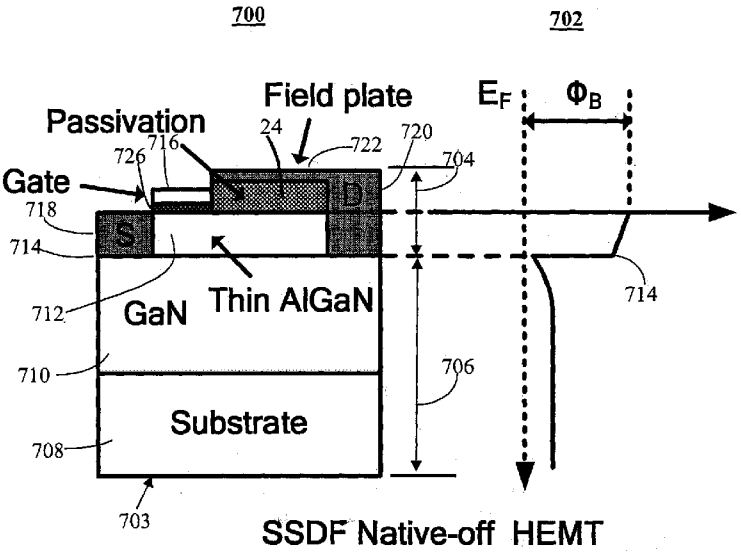
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(54) Title: III-NITRIDE HIGH ELECTRON MOBILITY TRANSISTOR STRUCTURES AND METHODS FOR FABRICATION OF SAME



(57) Abstract: Structures for III-nitride GaN high electron mobility transistors (HEMT), method for fabricating for GaN devices and integrated chip-level power systems using the GaN devices are provided. The GaN HEMT structure includes a substrate, an AlGaN/GaN heterostructure grown on the substrate, and a normally-off GaN device fabricated on the AlGaN/GaN heterostructure. The AlGaN/GaN heterostructure includes a GaN buffer layer and an AlGaN barrier layer. The integrated chip-level power system includes a substrate, an AlGaN/GaN heterostructure layer grown on the substrate and a plurality of GaN devices. The AlGaN/GaN heterostructure layer includes a GaN buffer layer and an AlGaN barrier layer and is formed into mesa areas and valley areas. Each of the plurality of GaN devices are fabricated on a separate one of the mesa areas.

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