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(54) Title: SUPERLATTICE CRENELATED GATE FIELD EFFECT TRANSITOR

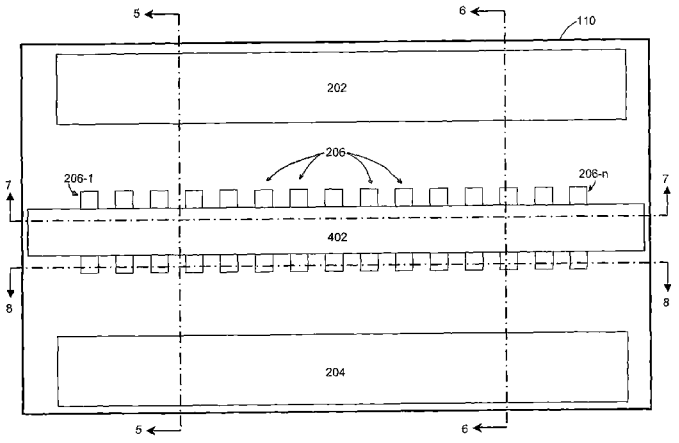


FIGURE 4

(57) Abstract: The present invention is directed to a device comprising an epitaxial structure comprising a superlattice structure having an uppermost 2DxG channel, a lowermost 2DxG channel and at least one intermediate 2DxG channel located between the uppermost and lowermost 2DxG channels, source and drain electrodes operatively connected to each of the 2DxG channels, and a plurality of trenches located between the source and drain electrodes. Each trench has length, width and depth dimensions defining a first sidewall, a second sidewall and a bottom located therebetween, the bottom of each trench being at or below the lowermost 2DxG channel. A crenelated gate electrode is located over the uppermost 2DxG channel, the gate electrode being located within each of the trenches such that the bottom surface of the gate electrode is in juxtaposition with the first sidewall surface, the bottom surface and the second sidewall surface of each of said trenches.

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