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(54) **SUPPLY VOLTAGE GENERATING CIRCUIT**

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(57) **ABSTRACT**

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A supply voltage generating circuit that enables a reduction in chip area includes: a booster for outputting a boosted voltage upon generating the boosted voltage by charge pumping of a capacitor element; a power-supply step-down unit for stepping down voltage of an external power supply to a voltage within a breakdown-voltage range of the capacitor element, and applying the stepped-down voltage to the power supply of the booster; and a switch element for switching between application of the external power supply to the power supply of the booster directly or via the power-supply step-down unit. The booster comprises multiple stages of booster circuits. The thicknesses of gate oxide films of capacitor elements constituted by MOS transistors included in respective ones of the booster circuits are the same and are made smaller than the thickness of a gate oxide film of a MOS transistor included in a load circuit having the output of the booster at its power supply.

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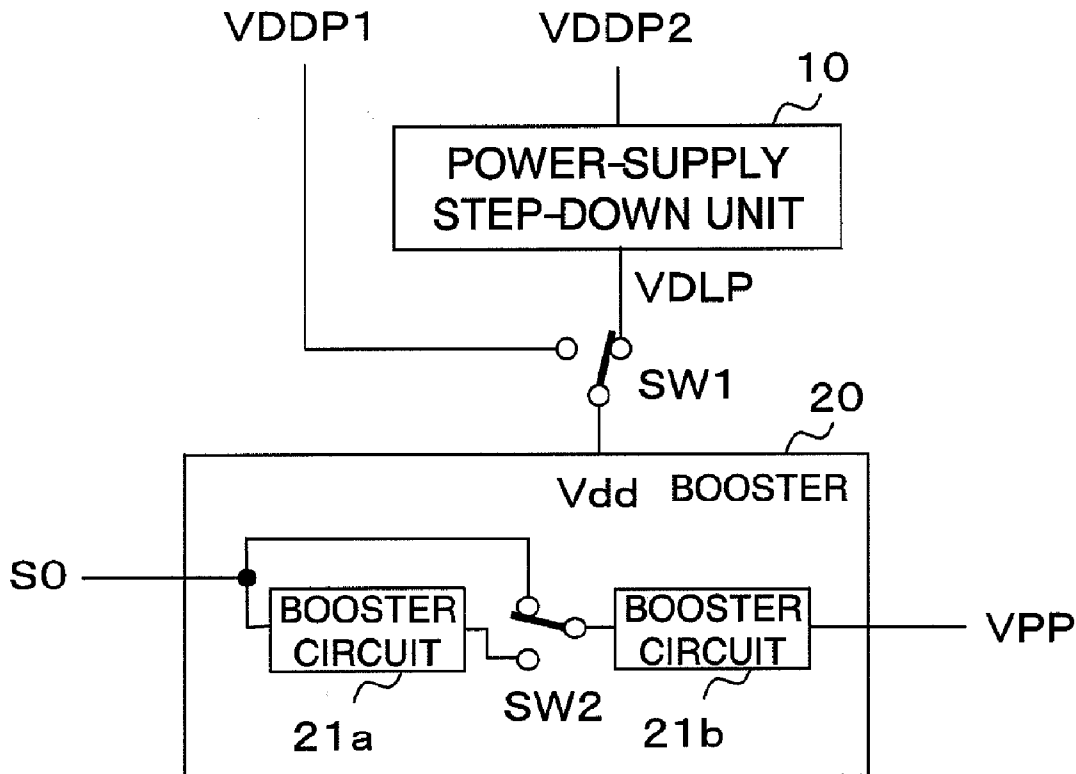


FIG. 1

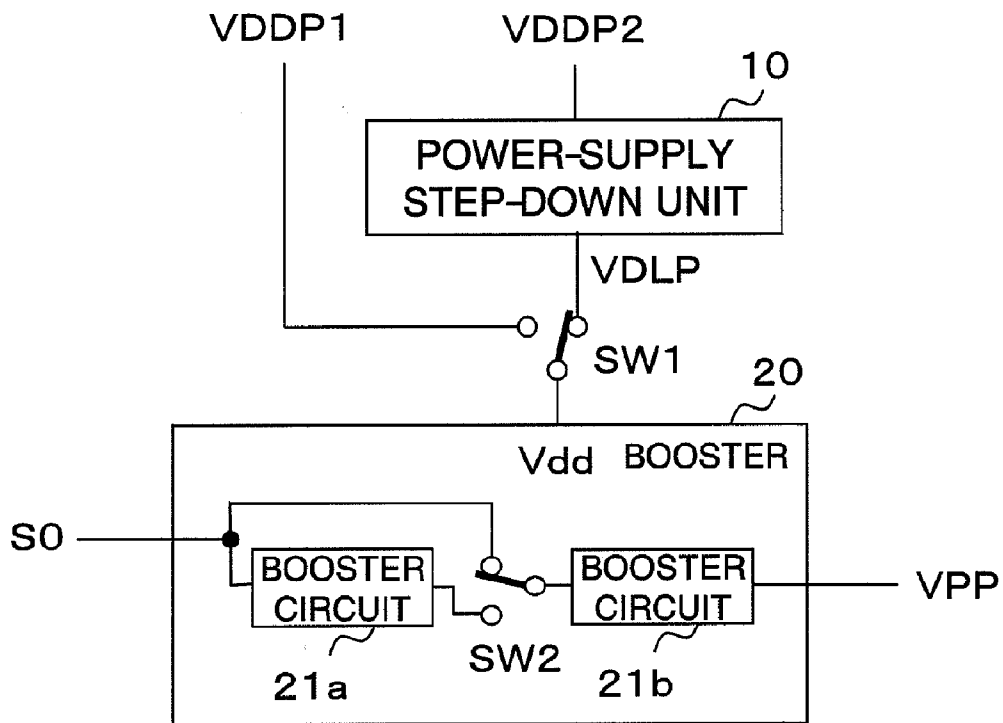


FIG.3A

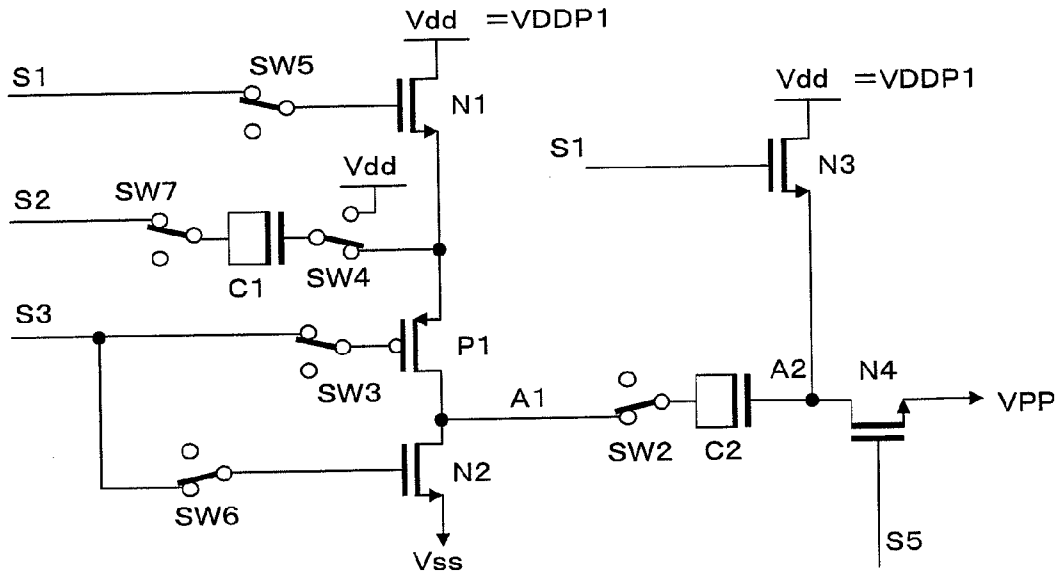


FIG.3B

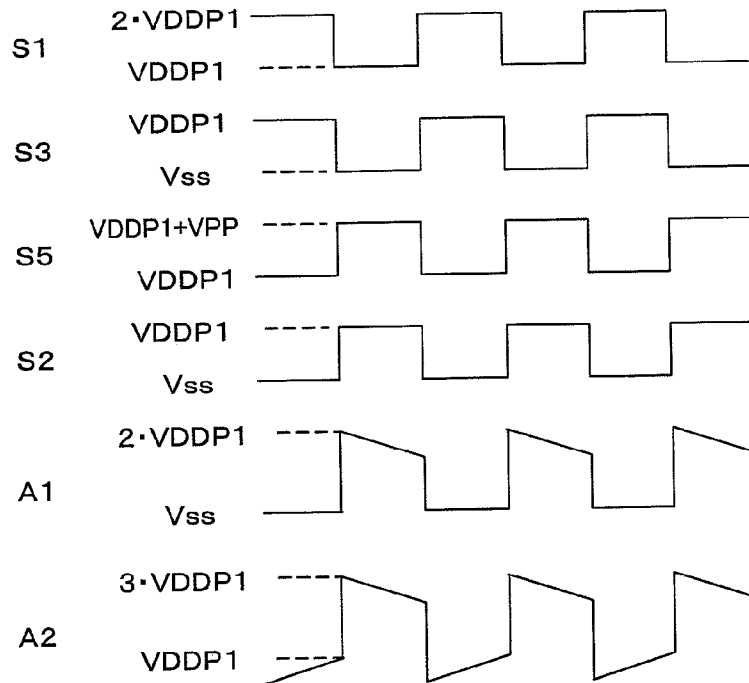


FIG.4A

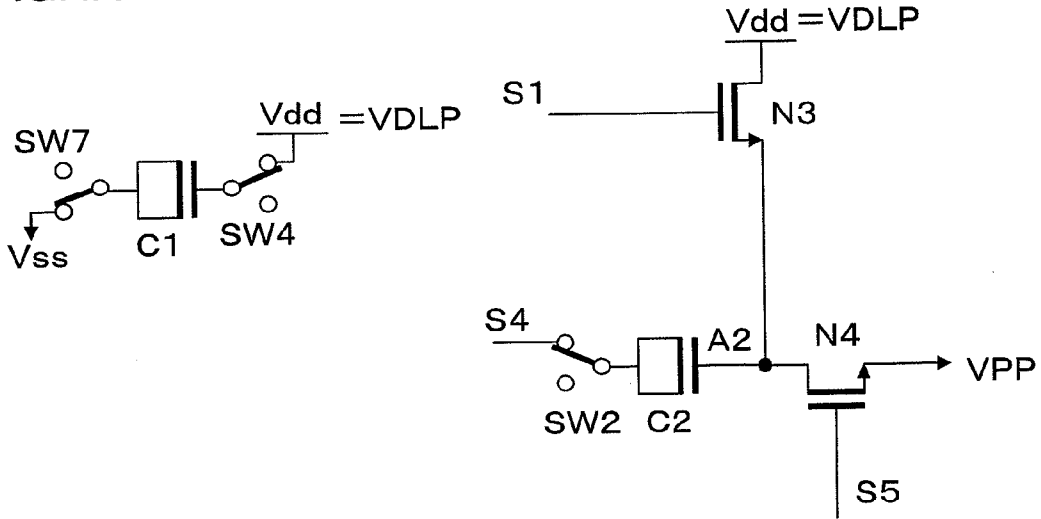
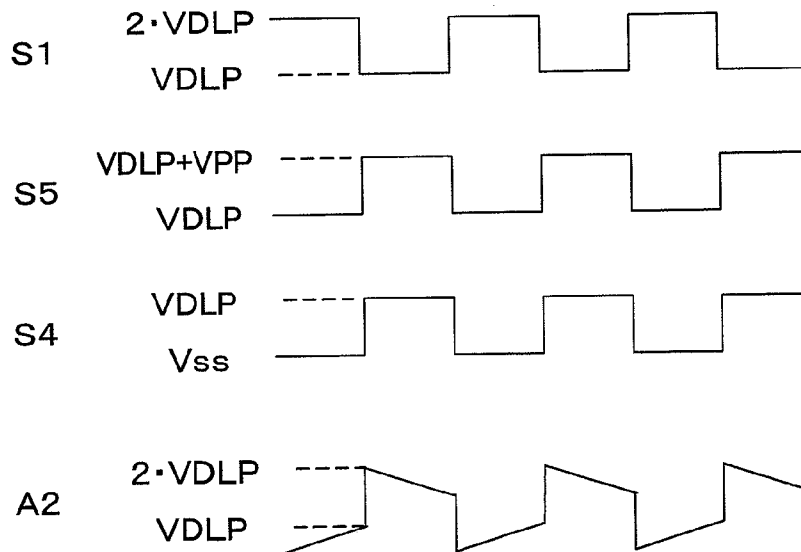


FIG.4B



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