ABSTRACT

NITRIDE SEMICONDUCTOR COMPONENT AND PROCESS FOR ITS PRODUCTION

The invention relates to a method for producing a layer structure of a nitride semiconductor component on a silicon surface, said method comprising the following steps: a substrate having a silicon surface is prepared; a nitride nucleation layer containing aluminium is deposited on the silicon surface of the substrate; a nitride buffer layer containing aluminium is optionally deposited on the nitride nucleation layer; a masking layer is deposited on the nitride nucleation layer or on the first nitride buffer layer if present; and a first nitride semiconductor layer containing gallium is deposited on the masking layer, the masking layer being deposited in such a way that separate crystallites first intergrow in the deposition step of the first nitride semiconductor layer, above a coalescence layer thickness, and cover an average surface of at least 0,16 µm2 in a layer plane of the intergrowing nitride semiconductor layer, perpendicularly to the direction of growth.

Fig. 1

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