ABSTRACT

LIGHT-EMITTING DEVICE, METHOD FOR MAKING THE SAME, AND NITRIDE SEMICONDUCTOR SUBSTRATE

The present invention relates to a light-emitting device including: a GaN substrate 1; an n-type nitride semiconductor substrate layer (n-type $Al_xGa_{1-x}N$ layer 3) disposed on a first main surface side of the GaN substrate 1; a p-type nitride semiconductor substrate layer (p-type $Al_xGa_{1-x}N$ layer 5) disposed further away from the GaN substrate 1 compared to the n-type nitride semiconductor substrate layer; and a light-emitting layer (multi-quantum well (MQW) 4) positioned between the n-type nitride semiconductor layer and the p-type nitride semiconductor layer. The p-type nitride semiconductor layer side is down-mounted. Also, light is released from a second main surface 1a, which the main surface opposite from the first main surface of the GaN substrate 1. A groove 80 is formed on the second main surface of the GaN substrate 1. The inner perimeter surface of the groove 80 includes a section (curved surface section) on which surface treatment is performed to smooth the inner perimeter surface.

Fig. 1