

Title (en)

OPTO-ELECTRONIC COMPONENTS WITH METAL STRIP OPTICAL GUIDANCE

Title (de)

OPTOELEKTRONISCHES BAUTEIL MIT METALLBAND ZUR LICHTWELLENFÜHRUNG

Title (fr)

COMPOSANTS OPTOELECTRONIQUES A GUIDAGE DE L'ONDE OPTIQUE PAR RUBAN METALLIQUE

Publication

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Application

EP 03778379 A 20030930

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Abstract (en)

[origin: WO2004032297A2] The invention concerns opto-electronic components with multilayer heterostructures, and in particular laser diodes emitting magnetic transverse polarization. One of the technical problems of this type of component is to ensure proper confinement of emission optical modes in the plane of the layers by modulating the effective index, so as to obtain good optical quality of the emission mode. The invention proposes to perform modulation of the effective index of the planar guide mode by coupling it with the surface plasmon obtained by deposition of a metal layer on the component heterostructure. Thus the planar structure of the component is maintained while the desired effective index modulation is obtained. This arrangement is applicable to different types of laser structures, such as, for example, Fabry-Pérot type quantum cascade laser, but also DFB or A-DFB, ARROW type lasers or still photonic crystals. The shape of the metal deposit is simply adapted to each type of structure.

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