542
Patent Number(s): CN102520532-A
Title: Terahertz wave high speed modulator, has strain quantum well structure formed of barrier layer and potential well layer, where lattice constant of barrier layer is equal to substrate layer
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Abstract: NOVELTY - The modulator has a strain quantum well structure provided on a buffer layer (2) of a substrate layer (1), where a metal is coated on an upper surface of the structure that is formed of a barrier layer (4) and a potential well layer (5). A band gap of the well layer is less than the barrier layer. Lattice constant of the barrier layer is equal to or 0.5 percentages more than the substrate layer. The substrate and buffer layers are made of gallium arsenide. The well layer is made of indium gallium arsenic or gallium arsenic phosphorus. The barrier layer is made of aluminum gallium arsenide.
USE - Terahertz wave high speed modulator.
ADVANTAGE - The utilization of the strain quantum well structure prolongs photon-generated carrier recombination lifetime, reduces requirement of modulated laser power, assures flexible adjustment of size and space of the internal electric field separation degree and easily adjusts modulation rate of the modulator.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for manufacturing a terahertz wave high speed modulator.
DESCRIPTION OF DRAWING(S) - The drawing shows a perspective view of a terahertz wave high speed modulator.'(Drawing includes non-English language text)'
Substrate layer (1)
Buffer layer (2)
Metal resonance unit period array structure (3)
Barrier layer (4)
Potential well layer (5)
Derwent Class Code(s): L03 (Electro-(in)organic, chemical features of electrical devices); P81 (Optics); V07 (Fibre-optics and Light Control); V08 (Lasers and Masers)
Derwent Manual Code(s): L03-F; L03-G05; V07-K01; V08-A04A
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