

FREE-CARRIED ABSORPTION IN QUANTUM  
WELL STRUCTURES FOR ALLOY-DISORDER  
SCATTERING

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S u m m a r y

A theory of free-carrier absorption is given for quantum well structures from III – V semiconducting materials when carriers are scattered by alloy-disorder. It is found that the absorption coefficients due to alloy-disorder and to phonons are of the same order. The results show that the absorption coefficient decreases with increasing the photon frequency and increases with temperature. It is also shown that the absorption coefficient increases with decreasing the layer thickness.