Abstract

In epitaxial layers of GaAs, grown by liquid phase epitaxy (LPE) in a hydrogen atmosphere, are observed A and B centers. These two deep acceptor levels determine the minority carrier (hole) lifetime and the reverse recovery time of rectifying devices respectively. The necessary switching time of GaAs rectifying devices is achieved regulating the concentrations and the profile of A and B traps in *p-i-n* region. For undoped GaAs *pin*-structures with a thick *i*-layer, there is a problem in determining the direction of motion of the space charge boundaries upon application of reverse voltage to the diode structure. The boundary of the space charge region can capture all the *i*-layer and be displaced in *p*- and *n*-layer. Hence, it may be the real uncertainty in correlating the observed DLTS - signals with particular traps. The results may suggest waiting for those or other traps, but do not give an answer on their concentration and distribution in each particular epitaxial layer. Obtaining monosemantic results the DLTS method requires the dissection of the multilayer structure (e.g., *p+-pin-n+* structure) on single *pn* junctions or Schottky barriers. The implementation of this approach is presented in this paper. Layerwise study was performed on the Schottky contacts to *n*-, *i*-, and *p*-layers.