

Recombination Center Levels in Gold and Platinum Doped N-Type Silicon

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Abstract : Using DLTS measurement techniques, we determined the dominant recombination center levels (defects of both A and B) in gold and platinum doped n-type silicon. Also, the injection and temperature dependence of the Shockley-Read-Hall (SRH) carrier lifetime was studied under low-level injection and high-level injection. Here measurements show that the dominant level under low-level injection located at EC-0.25eV(A) correlated to the Pt+G1 and the dominant level under high-level injection located at EC-0.54eV(B) correlated to the Au+G4. Finally, A and B are the same dominant levels for controlling the lifetime in gold-platinum doped n-silicon.

Keywords : recombination center level, lifetime, carrier lifetime control, gold, platinum, silicon

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