

## Recombination Center Levels in Gold and Platinum Doped N-type Silicon for High-Speed Thyristor

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**Abstract :** Using DLTS (Deep-level transient spectroscopy) 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-0.25 eV (A) correlated to the Pt+G1 and the dominant level under high-level injection located at EC-0.54 eV (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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