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NEW ID MOS PDK for SPACE APPLICATIONS

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Two years ago, ID MOS had the first demand to develop mixed-signal ASIC for Space applications. After having a look to the existing PDKs, we discovered that there was still no full Space PDK available, especially with regard to device models. ID MOS decided to develop its own PDK, for the low space voltage applications. This PDK had to provide hardened components to reach the specified radiation tolerance (TID : 100krad, SEL : LET 80,72Mev.cm²/mg). To reach this target we, first, chose a technology, developed our own test chip including different modules based on new ELT transistor drawings, fabricate the circuit, define the assembly and the electrical test. Then for the NEOSAT project, we received the same demand for High Voltage circuits. We chose the same technology XH035 from XFAB complemented with different modules allowing the integration of High Voltage ELT transistors (up to 90V).

We propose to present for the radiation hardened XH035 technology the baseline technology test chips and radiation test results. Finally the current state of the ID MOS solution is presented for Space mixed Analog/Digital ASICs, based on the XFAB XH035 μ m technology.

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