

Description

AIP300 is a Total Ionizing Dose (TID) tolerant and Single Event Latch-Up (SEL) immune Digital Gate Library implemented in ON Semiconductor ONC18 process technology. ONC18 provides 180nm 1.8V CMOS with a number of variants to support analog, mixed-signal and dual gate oxide. The library is usable in most ON Semiconductor ONC18 process variants extending the library's use to a large number of applications.

The library utilizes radiation hardened by design (RHBD) layout techniques to improve TID performance well beyond CA18 inherent performance and ensure latch-up immunity.

For the best radiation performance possible, the library utilizes an annular RHBD technique for the NMOS poly gate. Anatrix offers digital cell libraries, AIP301 and AIP302s, with higher cell density but lower TID performance.

The library contains the following views: schematic, symbol, netlist and layout.

Applications

- Programs with greater than 300KRad TID
- SEL immunity requirements
- Digital Control of Analog Blocks
- Custom Digital Functional Blocks
- Analog/Mixed-Signal Control Logic

Features

- Total Ionizing Dose Tolerant over 300KRad
- Single Event Latch-Up Immune
- Large area penalty vs standard gates
- High reliability design rules
- 300pS Clock to Q DFF

Logic Gates Included

AND2, AND3
NAND2, NAND3, NAND4
OR2, OR3
NOR2, NOR3
XOR2, XNOR2
MUX2
BUF
INV
Dice Based DFF

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