Nand 3x1(first input inverted)

1. **Input pin capacitances:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Input Pins** | **Rise Cap (pF)** | **Fall Cap (pF)** | **Average Cap (pF)** |
| A | 0.002920933 | 0.000623212 | 0.003544145 |
| B | 0.0087651793 | 0.000206722 | 0.00448595 |
| C | 0.0072523405 | 0.0005488228 | 0.003900581 |

1. **Transition Time Table:**

**(i) Output Rise Transitions** **(in ns)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0135441054 | 0.0193898141 | 0.0206725322 |
| **10 fF** | 0.0160127228 | 0.0211674347 | 0.0367368512 |
| **100 fF** | 0.3727128126 | 0.4262250393 | 0.5190717926 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0277169049 | 0.0310644782 | 0.0794866144 |
| **10 fF** | 0.0467237032 | 0.3324240686 | 0.4439575130 |
| **100 fF** | 0.4625925257 | 0.4843277683 | 0.5617410915 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0891979528 | 0.1602800688 | 0.1971409901 |
| **10 fF** | 0.1990134556 | 0.2720487909 | 0.2795932119 |
| **100 fF** | 0.3200102799 | 0.4973841776 | 0.6110415043 |

**(ii) Output Fall Transitions** **(in ns)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0384477142 | 0.0607179258 | 0.0643978791 |
| **10 fF** | 0.0761570306 | 0.1354723296 | 0.1772780024 |
| **100 fF** | 0.1956462684 | 0.3229954015 | 0.4177706560 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0177036973 | 0.0490103676 | 0.1093285434 |
| **10 fF** | 0.1343331404 | 0.1347444239 | 0.1414341946 |
| **100 fF** | 0.1526662025 | 0.3740522396 | 0.3884536477 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0369063898 | 0.0540464384 | 0.1483923738 |
| **10 fF** | 0.1766068864 | 0.3127045566 | 0.3197224527 |
| **100 fF** | 0.3956823091 | 0.4253975363 | 0.4619678729 |

1. **Propagation delay time tables**:

**(i) Cell Rise Delay (in ns)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0945232997 | 0.1228033723 | 0.1488063286 |
| **10 fF** | 0.2297839695 | 0.2401315792 | 0.2420494209 |
| **100 fF** | 0.4019196119 | 0.4436964264 | 0.4824208516 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.1051568893 | 0.1457906820 | 0.1468133397 |
| **10 fF** | 0.1549180501 | 0.2191014764 | 0.2437930163 |
| **100 fF** | 0.3377064467 | 0.4175948794 | 0.4738172887 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.1051568893 | 0.1457906820 | 0.1468133397 |
| **10 fF** | 0.1549180501 | 0.2191014764 | 0.2437930163 |
| **100 fF** | 0.3377064467 | 0.4175948794 | 0.4738172887 |

**(ii) Cell Fall Delay (in ns)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | -0.0387917010 | -0.082521395 | -0.1314719202 |
| **10 fF** | -0.1911602641 | -0.284873401 | -0.3059234890 |
| **100 fF** | -0.3406721263 | -0.364123812 | -0.3895957118 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | -0.0132516176 | -0.0552564399 | -0.0641346286 |
| **10 fF** | -0.0662793158 | -0.2019054191 | -0.2290883012 |
| **100 fF** | -0.2685676748 | -0.2861430841 | -0.4635379287 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | -0.0124724223 | -0.1088553269 | -0.1199871198 |
| **10 fF** | -0.1276918191 | -0.1611285037 | -0.3311061777 |
|  | -0.5230508694 | -0.5520713894 | -0.5744109849 |

1. **Static Power (cover all possible input combinations based on number of inputs).**

|  |  |
| --- | --- |
| **Condition (ABC)** | **Power (nW)** |
| 000 | 0.0226824161 |
| 001 | 0.0245114054 |
| 010 | 0.0252483740 |
| 011 | 0.0317924812 |
| 100 | 0.0375472325 |
| 101 | 0.0437558676 |
| 110 | 0.0466385430 |
| 111 | 0.0540183361 |

1. **Dynamic Power Table:**

**(i) Rise Power (in nW)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.1824736273 | 0.2639068740 | 0.3118835465 |
| **10 fF** | 0.3279958238 | 0.3476055840 | 0.4608451425 |
| **100 fF** | 0.4991560630 | 0.5144947762 | 0.5520283969 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0466014436 | 0.0477860815 | 0.0490073477 |
| **10 fF** | 0.1681370518 | 0.4727356556 | 0.4753105133 |
| **100 fF** | 0.4871601127 | 0.5236614367 | 0.5737045448 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0767685678 | 0.1194131840 | 0.2794021913 |
| **10 fF** | 0.3721041837 | 0.3891846787 | 0.3933307298 |
| **100 fF** | 0.4876713248 | 0.4905640828 | 0.5111088068 |

**(ii) Fall Power (in nW)** [Input slew vs output capacitance].

**Related pin A**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0032955125 | 0.0064535889 | 0.0077066409 |
| **10 fF** | 0.0107568057 | 0.0112701314 | 0.0346759396 |
| **100 fF** | 0.0397193763 | 0.0502148742 | 0.0566322824 |

**Related pin B**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0003118143 | 0.0023753160 | 0.0154346268 |
| **10 fF** | 0.0262465325 | 0.0389278464 | 0.0406975338 |
| **100 fF** | 0.0422932696 | 0.0466093055 | 0.0527720403 |

**Related pin C**: (i.e., other input pins are held constant)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **10 ps** | **100 ps** | **1000 ps** |
| **0.5 fF** | 0.0004675342 | 0.0069291132 | 0.0093201391 |
| **10 fF** | 0.0123264865 | 0.0154006603 | 0.0248384244 |
| **100 fF** | 0.0449579128 | 0.0466390810 | 0.0480716998 |