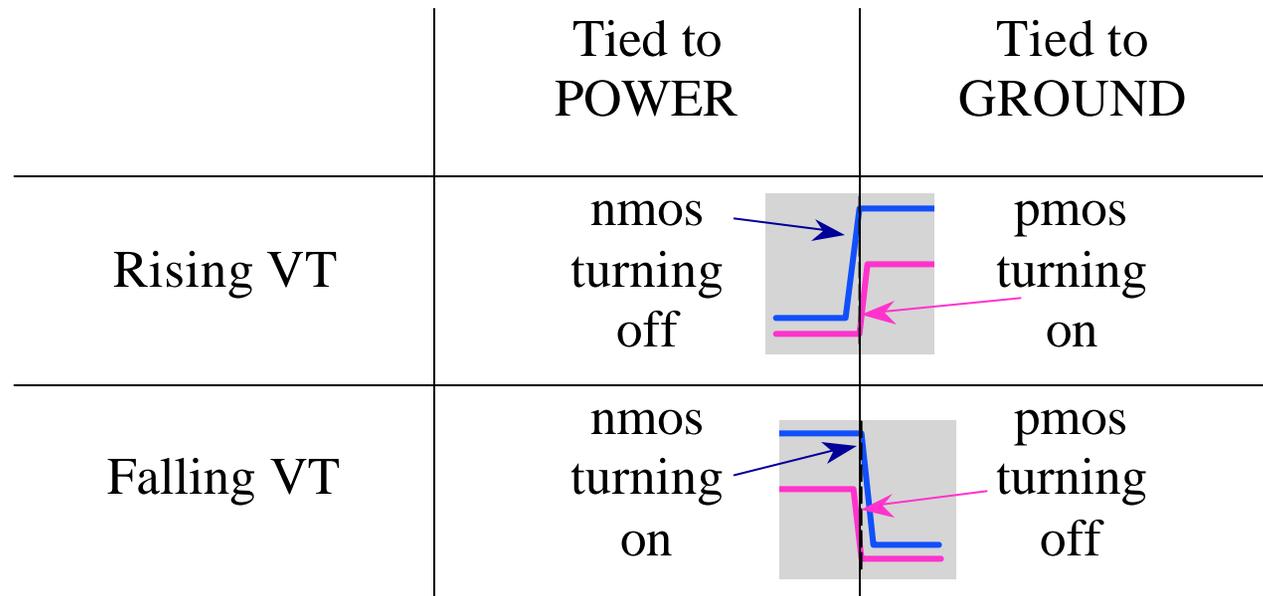


Use Four VT Curves to Model a Normal Digital IO Driver

- ✎ Rising VT Curve thru 50 Ohms tied to POWER
- ✎ Rising VT Curve thru 50 Ohms tied to GROUND
- ✎ Falling VT Curve thru 50 Ohms tied to POWER
- ✎ Falling VT Curve thru 50 Ohms tied to GROUND

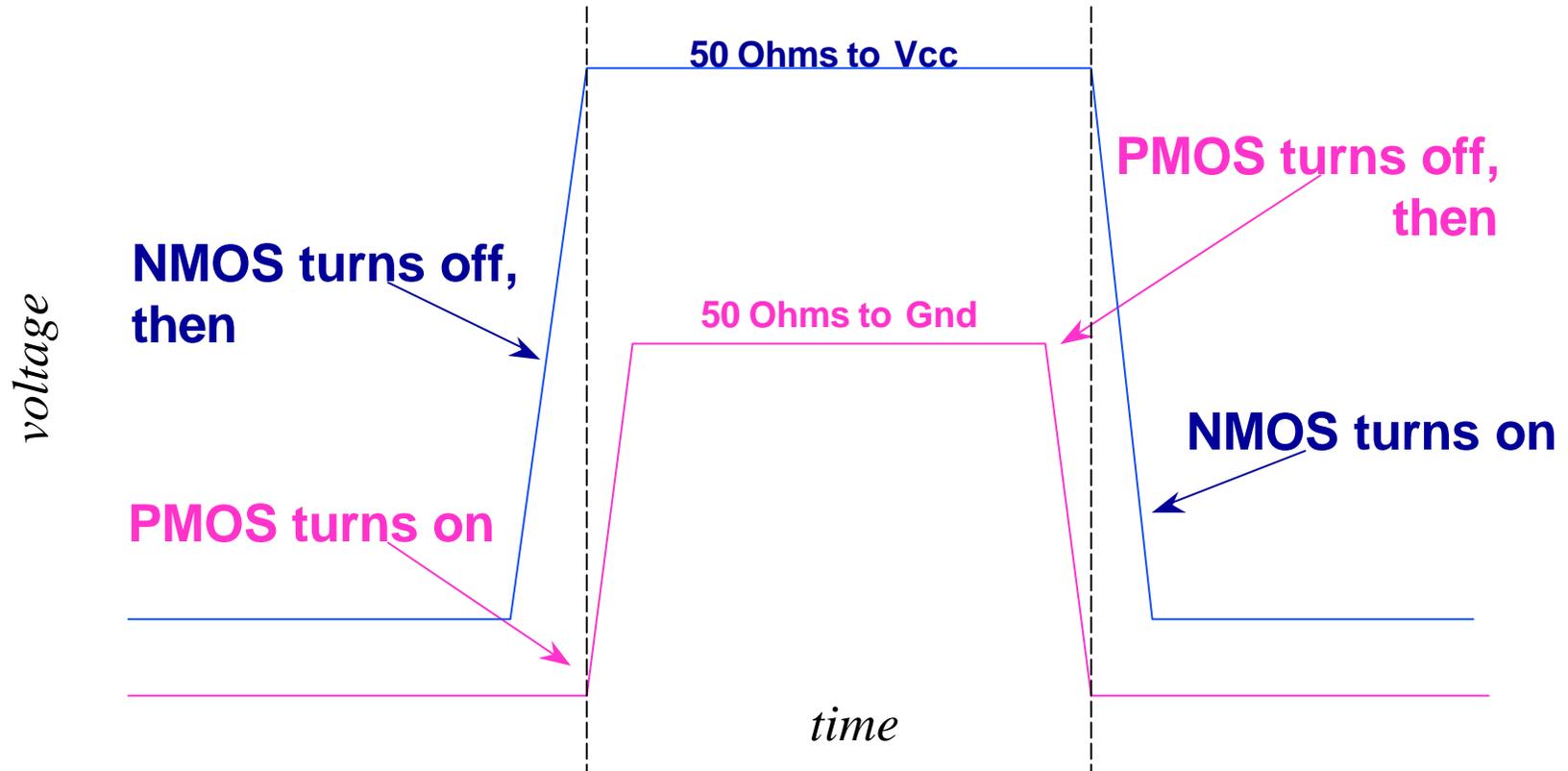
Note that both falling curves and both rising curves must be “time-correlated”, meaning they must begin at the same point in time

Why Cadence Uses Four Time-Correlated VT Curves



- each of the 4 curves shows important info, as shown
 - for example, for a rising edge the nmos must turn off as (before) the pmos turns on - to model rising edges accurately you need to capture how these two events happen in time
- when data is collected in this way, you do not need to manually time how pmos/nmos turn on/off relative to each other - it's embedded in the VT data

What the VT Curves should like like, when correct:



- ✎ this is just 'normal' digital I/O behavior, and prevents "crowbar" current thru the I/O