



Buffer

Attributes:

```
mainnodes: vi_e vi_o vo_e vo_o g
digital_nodes:
rparms: rin=1e18 rout=10 av=1
```

Description:

SC_BU.ece is a buffer element, commonly used in the switched capacitor (SC) circuits. The time-domain description of the buffer element is shown in Fig. a., it is a two-port block (ignore R_{dl} connected between vi_o and vo_o). The z-domain (small-signal) equivalent is shown in Fig. b, which is a four-port.

As the same file contains time-domain and frequency-domain descriptions, the number of ports in both is made equal. It is the reason that buffer element is realized as a four-port element in time-domain, and unused ports/nodes are connected with low-value resistance (R_{dl}).

vi_e and vi_o are input nodes. vo_e and vo_o are output nodes. rin is buffer input resistance and $rout$ is buffer output resistance. av is voltage gain and it is set 1. R_{dl} is internally set to 1 Ω .