spdt_buck.ece

Attributes

```
  mainnodes: p s1 s2
  main_var: g_in
  rparms: g_high=1.0
+    tstart1=0 tend1=1 v_ss=0 i_ss=0
+    d=0.1 dcap=1
```

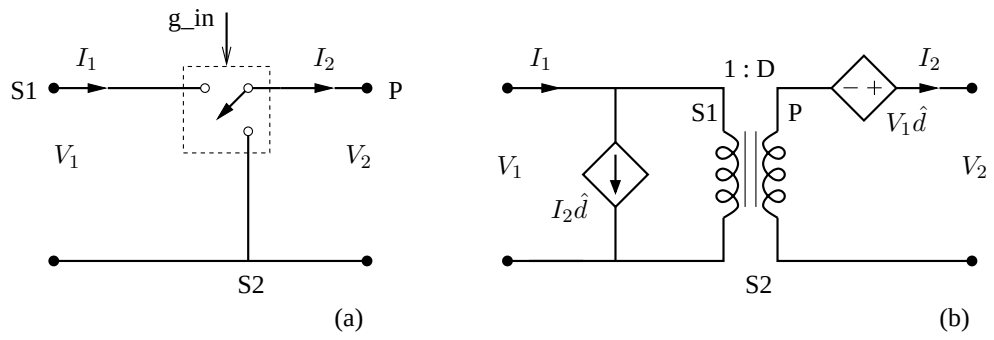

Figure 1: `spdt_buck.ece`: (a) large-signal model, (b) small-signal model

Description

`spdt_buck.ece` is a single-pole double-throw switch, with `p`, `s1`, and `s2` as the pole, throw, and common, respectively, as shown in Fig. 1 (a). The switch is controlled by the general variable `g_in`. If `g_in` $>$ `g_high`$/2$, `p` and `s2` are connected; else, `p` and `s1` are connected. The switch is modelled as an ideal switch, i.e., a short circuit when two nodes are to be connected and an open circuit otherwise.

The real parameters `tstart1`, `tend1`, `v_ss`, `i_ss`, `d`, `dcap` are used to generate the small-signal model parameters shown in Fig. 1 (b). The average values required in the model parameter computation are computed by averaging the concerned quantities between `tstart1` and `tend1`. The average quantities are stored in real parameters `v_ss`, and `i_ss` and passed to the small-signal template.