

vsrc_clock.ebe

Attributes

```
ebe name=vsrc_clock limit_tstep=yes
# clock voltage source
Jacobian: constant
nodes: p n
state_vars:
aux_vars: cur_p
aux_vars_startup: cur_p_s
x_vars:
iparms:
sparms:
# Note: L1, L2 are levels in the 1st and 2nd intervals.
rparms:
+ T1=1
+ T2=1
+ L1=1
+ L2=-1
+ t0=0
+ delta1=0.01
+ delta2=0.01
+ T=0
+ L0=0
+ tk1=0
+ tk2=0
+ tk3=0
+ tk4=0
+ tk5=0
+ slope1=0
+ slope2=0
+ eps1=0
stparms:
igparms:
outparms: i v
```

Description

`vsrc_clock.ebe` is a square wave voltage source connected between nodes `p` and `n`. The parameters have the following meaning (with V_s denoting $(v_p - v_n)$):

T1: The first part of one period. V_s is equal to `L1` in this interval.

T2: The second part of one period. V_s is equal to `L2` in this interval.

t0: An “offset” time interval by which the waveform is shifted (to the right).

delta1: Width of the transition from the T2 phase to the T1 phase.

delta2: Width of the transition from the T1 phase to the T2 phase.

The branch current and branch voltage are made available as output variables `i` and `v`, respectively. The effect of the various parameters of `vsrc_clock.ebe` on V_s is shown in the following figures.

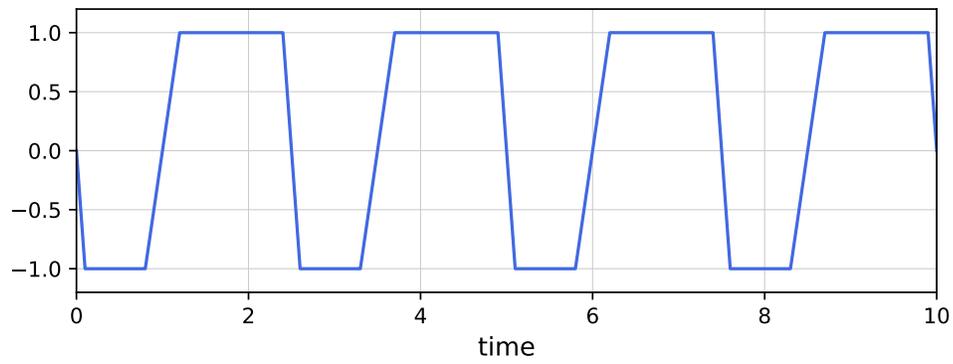


Figure 1: $y(t)$ obtained with $T1 = 1$, $T2 = 1.5$, $L1 = -1$, $L2 = 1$, $\delta a1 = 0.2$, $\delta a2 = 0.4$, $t_0 = 0$.

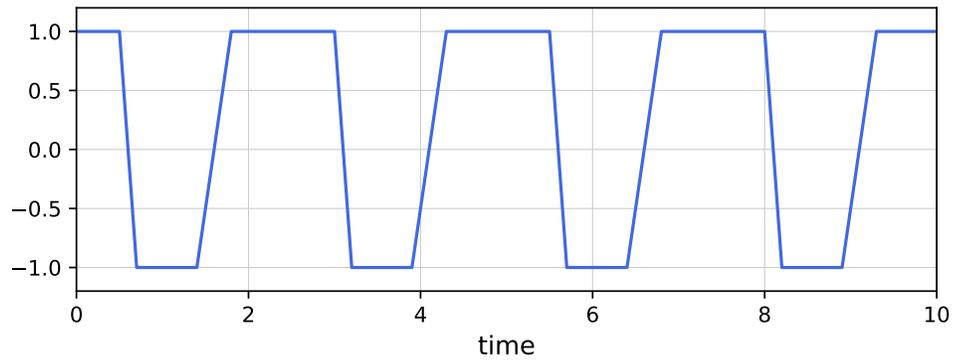


Figure 2: $y(t)$ obtained with $T1 = 1$, $T2 = 1.5$, $L1 = -1$, $L2 = 1$, $\delta a1 = 0.2$, $\delta a2 = 0.4$, $t_0 = 0.6$.

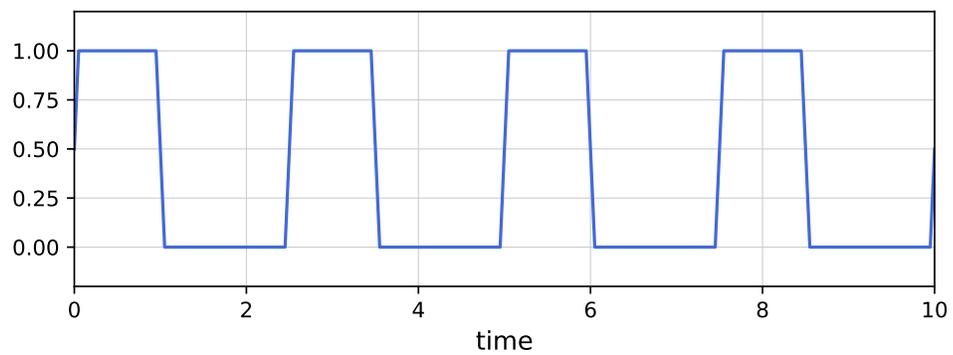


Figure 3: $y(t)$ obtained with $T1 = 1$, $T2 = 1.5$, $L1 = 1$, $L2 = 0$, $\delta a1 = 0.1$, $\delta a2 = 0.1$, $t_0 = 0$.