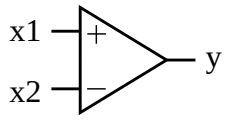
cmprtr_1.gce



Attributes

```
  mainvars: x1 x2 y
  rparms:
+   g_low=0
+   g_high=1
+   delt_min=1.0e-6
+   delt_nrml=1.0e-3
+   epsl=1.0e-6
```

Description

`cmprtr_1.gce` is a comparator. The output `y` is `g_high` if `x1` > `x2`; else, it is `g_low`.

The parameters `delt_min`, `delt_nrml`, and `epsl` are used for controlling the simulator time steps. Additional time points are forced, depending on the values of `delt_min` and `delt_nrml`, when `x1` and `x2` are within `epsl` of each other. This feature allows accurate simulation without having to make the average time step very small. Generally, `delt_nrml` should be made equal to the typical simulator time step (`delt_const`) while `delt_min` should be made much smaller (say, by a factor of 100).

AC behaviour is not implemented.

Fig. 1 shows typical waveforms obtained with `cmprtr_1.gce`. The corresponding circuit file is given below.

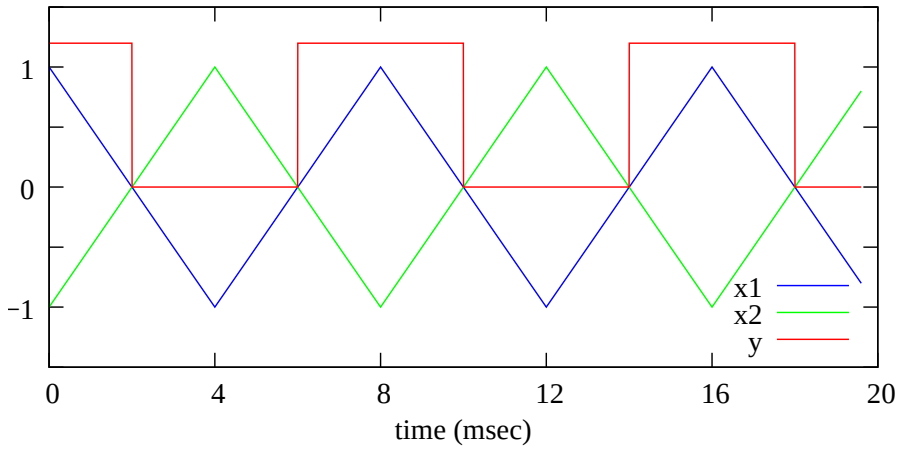


Figure 1: Waveforms obtained with `cmprtr_1.gce` (see the circuit file for details).

```
begin_circuit
   gelement type=triangle_2 y=x1 i0=0 tperiod=8m t0=0
+      g_high=1 g_low=-1 epsl=1u

   gelement type=triangle_2 y=x2 i0=1 tperiod=8m t0=0
+      g_high=1 g_low=-1 epsl=1u

   gelement type=cmprtr_1 x1=x1 x2=x2 y=y g_high=1.2 epsl=1.0e-6
+      delt_min=0.20u delt_nrml=1.00m

   outvar:
+      x1=var_of_x1
+      x2=var_of_x2
+      y=var_of_y
end_circuit

begin_solve
   solve_type=trns
   begin_output
      filename=cmprtr_1_gce.dat limit_lines=10000
      variables: x1 x2 y
   end_output
   method: itmax_trns=10000
+    back_euler=yes
+    t_start=0 t_end=20m delt_const=0.80m delt_min=0.1u
+    n_wrtiterno=1000
end_solve
```