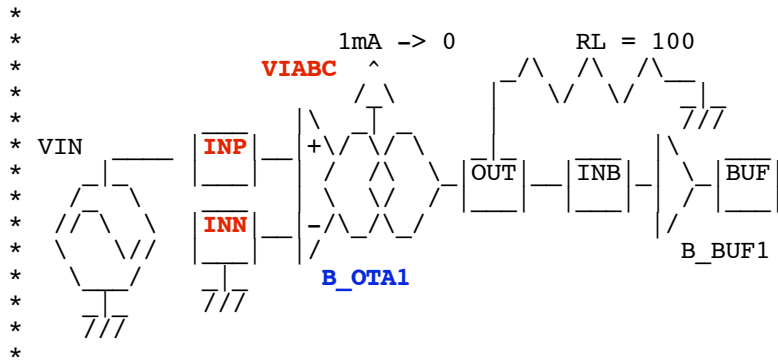


OTA_PWL

* dsauersanjose@aol.com 10/21/08
 * www.idea2ic.com



```

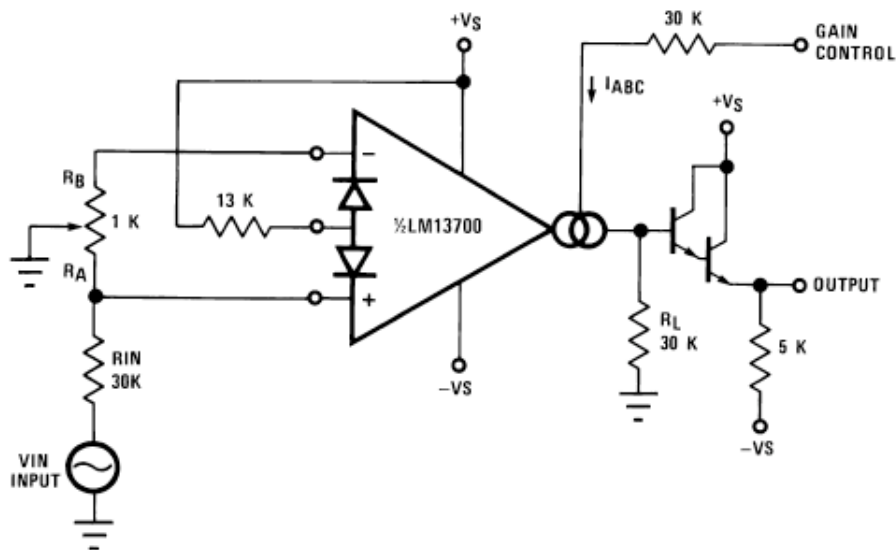
VIN          VIN          0      SIN(  0  50m  10000  )
B_OTA1       OUT          0      I =   -1*v(VIABC)*tanh(v(VIN)/.052)
B_BUF1       VOUT         0      V =    v(OUT)
V_Iabc       VIABC        0      PWL   ( 0 .5m 3m 1m  4m .2m 5m 1m  10m 0 )
RL           OUT          0      100
.tran        1u           10m    0      1u

.control
run
set pensize = 2
plot v(vin) v(vout)
.endc

.end
  
```

=====END_OF_SPICE=====

To Covert PDF to plain text click below
<http://www.fileformat.info/convert/doc/pdf2txt.htm>
 This code works with winspice.

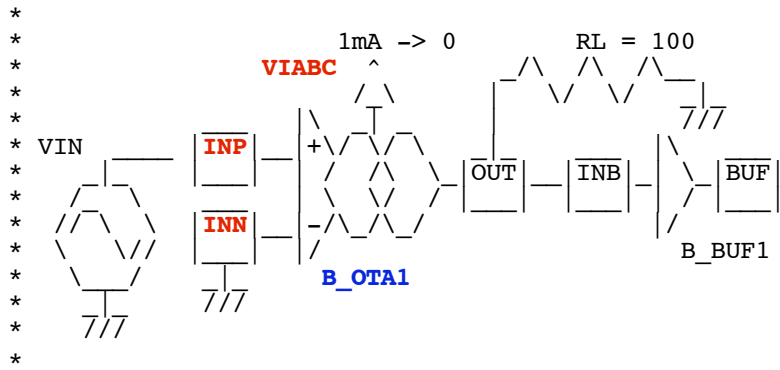


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FIGURE 2. Voltage Controlled Amplifier

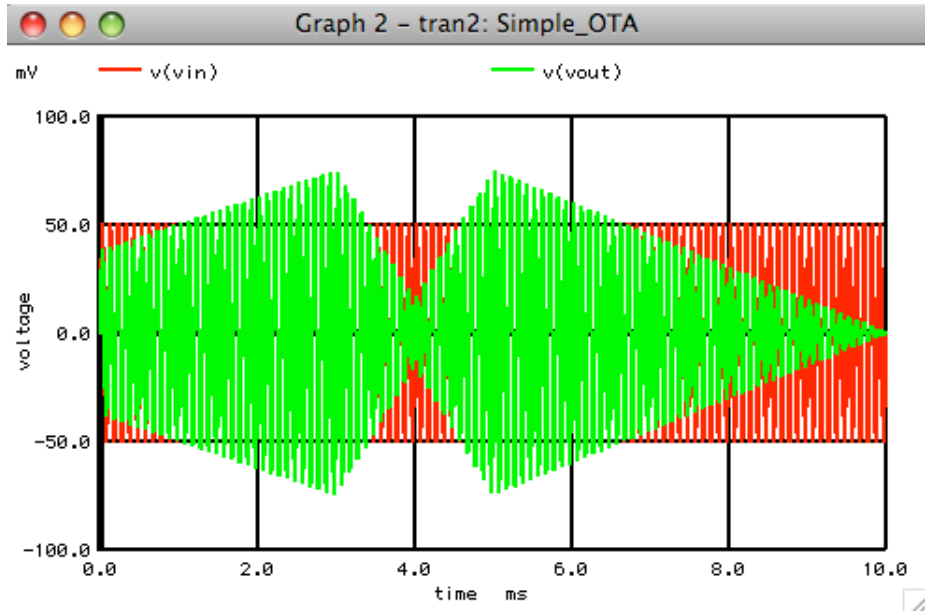
The whole Operational Transconductance Amplifier can be defined using only one line..

```
B_OTA1 OUT 0 I = -1*v(VIABC)*tanh((v(INP)-v(INN))/0.052)
```



The nice thing is that the Control current (Iabc) can be defined using a piecewise linear voltage source where a VIABC = 1mV level corresponds to a IABC = 1mA level. Using this, any kind of envelop can be generated..

```
V_Iabc VIABC 0 PWL ( 0 .5m 3m 1m 4m .2m 5m 1m 10m 0 )
```



A perfect Buffer is defined using only one line..

```
B_BUF1 VOUT 0 V = v(OUT)
```

To simulate the LM13700's Buffers, an offset needs to be added as so..

```
B_BUF1 VOUT 0 V = v(OUT) -1.2
```