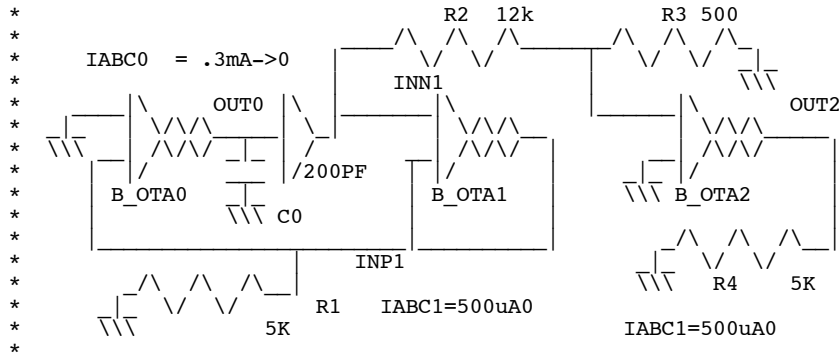


OTA_FUNCT_GEN

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 * www.idea2ic.com



```
.OPTIONS GMIN=1e-18 METHOD=trap srcsteps = 1 gminsteps = 1 trtol=1 VNTOL=1m
V_Iabc0 VIABC0 0 PWL ( 0 .3m 1m 0 )
B_OTA0 OUT0 0 I = -1*v(VIABC0)*tanh( v(INP1)/.052)
C0 OUT0 0 2000p IC=1
B_BUF0 INN1 0 V = v(OUT0)
V_Iabc1 VIABC1 0 DC .5m
B_OTA1 INP1 0 I = -1*v(VIABC1)*tanh( (v(INP1)-v(INN1)) /.052)
R1 INP1 0 5000
B_BUF1 VOUT1 0 V = v(INP1)
Cstray INP1 0 15p
R2 INN1 INN2 12k
R3 INN2 0 500
B_OTA2 OUT2 0 I = -1*v(VIABC1)*tanh(-v(INN2) /.052)
R4 OUT2 0 5K
.tran .1u 1m 0 .1u UIC
```

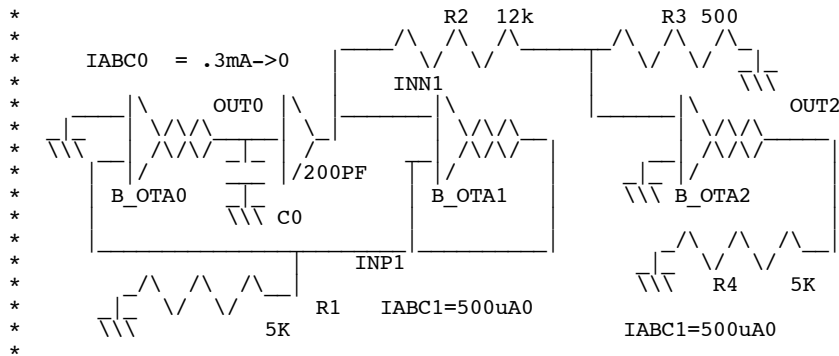
```
.control
run
set pensize = 2
plot v(inp1) v(out0) v(out2)
.endc

.end
.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.

No Function generator is complete with out a a sinewave output. It may not have low distortion, but putting a triangle wave form at the right magnitude into a standard OTA will generate something that looks close to a sine wave.



It would be something too build such a function generator today in BiCMOS. Transistors are far smaller and far faster and have almost twelve orders of magnitude of dynamic range compare to the six orders of magnitude for the LM13600. Both AM and FM are available. And all this could be

done completely inside silicon.

