OTA TRI SQUAR dsauersanjose@aol.com 10/21/08 www.idea2ic.com IABC1=.5m0IABC0 = .1mA->0VOUT1 B OTA0 200PF B OTA1 7/7 co INP1 5K METHOD=trap srcsteps PWL (0 .1m 1m 0) .OPTIONS GMIN=1e-18 srcsteps = 1 gminsteps = 1 trtol=1 VNTOL=1m V_Iabc0 VIABC0 0 -1*v(VIABC0)*tanh(v(INP1)/.052) в отао OUT0 0 I =C0OUT0 0 200p IC=1 B BUF0 INN1 v = v(OUT0) V Iabc1 VIABC1 DC .5m -1*v(VIABC1)*tanh((v(INP1)-v(INN1)) /.052) B_OTA1 INP1 I = R1 INP1 0 5k B_BUF1 VOUT1 v = v(INP1) Cstray INP1 15p .1u UIC .tran .1u 1m .control run set pensize = 2plot v(inp1) v(out0) .endc

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

.end

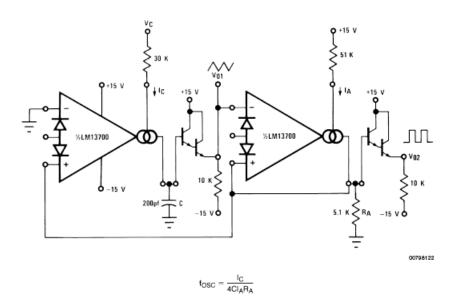
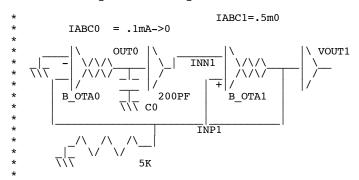


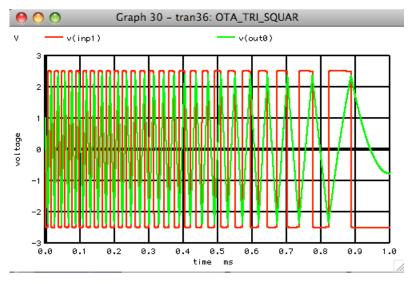
FIGURE 15. Triangular/Square-Wave VCO

Perhaps the most under exploited resource available in a bipolar process is its dynamic range. At the time the LM13600 was designed, it as possible to build the VCO shown above

which was practically functional from 1Hz to 1MHz.



Part of the reason for the LM13600 version was to be able to exploit this six order of magnitude dynamic range. At the time the LM13600 was designed, a function generator that was handy to find in the lab was not better.



Today, the transistors are much much faster and can work from milli Amps to femto Amps. Thats twelve order of magnitude. And in the BiCMOS processes, input buffers can have the impedance of glass. It used to be an Analog joke that linear was in the Hz to GHz business. Today it might be possible to build a VCO that can operate at those frequency ranges using only internal capacitors.