

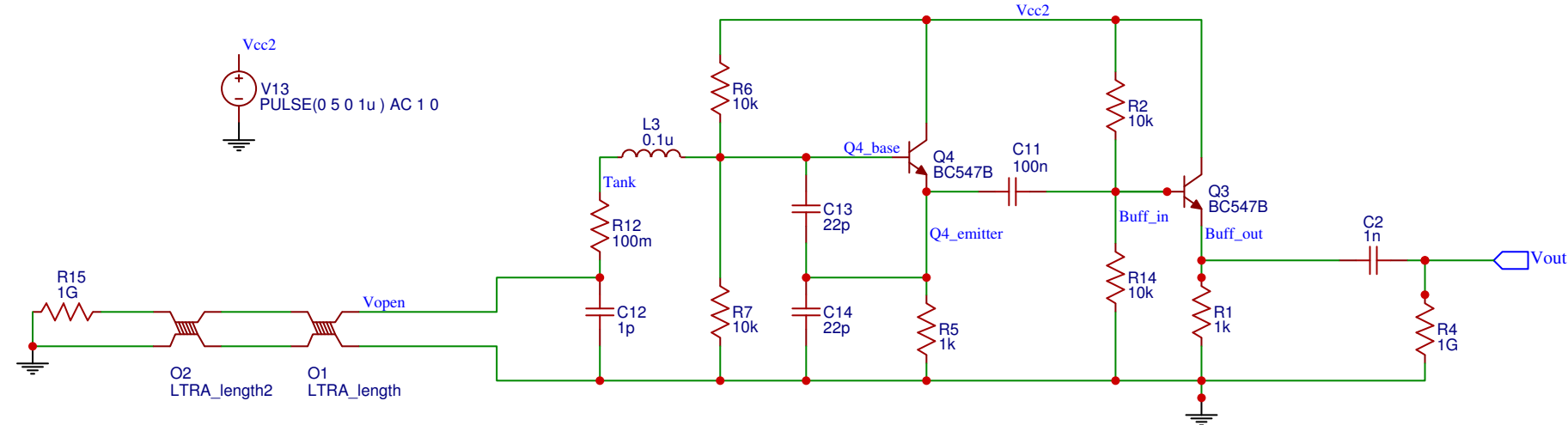
probe V(Vout) V(Vopen)

probe V(Vout) V(Q4_base) V(Q4_emitter) V(Tank)

tran .5n 30u 29.9u

.param Vcc2=5V

<https://easyeda.com/editor#id=1ef8bae271db412c9a281e64cfd3d1a0|20bc0ac2db31423f8fcb9775d9d21192>



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*****
* Model generated on May 12, 05
* MODEL FORMAT: SPICE3
.MODEL bc547b npn
+IS=7.443e-11 BF=1343.59 NF=1.42606 VAF=80.4901
+IKF=0.427163 ISE=2.4623e-10 NE=2.73946 BR=62.79
+NR=1.5 VAR=1.0092 IKR=4.27163 ISC=2.4623e-10
+NC=1.9119 RB=0.1 IRB=0.1 RBM=0.1
+RE=0.579065 RC=3.01102 XTB=0.1 XTI=2.25359
+EG=1.05 CJE=7.34106e-12 VJE=0.586136 MJE=0.33309
+TF=5.7202e-10 XTF=4.45797 VTF=26.03 ITF=0.487193
+CJC=4.04665e-12 VJC=0.95 MJC=0.343664 XCJC=0.799994
+FC=0.8 CJS=0 VJS=0.75 MJS=0.5
+TR=1e-07 PTF=0 KF=0 AF=1
```

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*****
* Model generated on Aug 07, 01
* MODEL FORMAT: SPICE3
.MODEL 2N3904 ON npn
+IS=1.26532e-10 BF=206.302 NF=1.5 VAF=1000
+IKF=0.0272221 ISE=2.30771e-09 NE=3.31052 BR=20.6302
+NR=2.89609 VAR=9.39809 IKR=0.272221 ISC=2.30771e-09
+NC=1.9876 RB=5.8376 IRB=50.3624 RBM=0.634251
+RE=0.0001 RC=2.65711 XTB=0.1 XTI=1
+EG=1.05 CJE=4.64214e-12 VJE=0.4 MJE=0.256227
+TF=4.19578e-10 XTF=0.906167 VTF=8.75418 ITF=0.0105823
+CJC=3.76961e-12 VJC=0.4 MJC=0.238109 XCJC=0.8
+FC=0.512134 CJS=0 VJS=0.75 MJS=0.5
+TR=6.82023e-08 PTF=0 KF=0 AF=1
```

.MODEL LTRA75 LTRA(R=0.0 L=15n C=0.074p LEN=75.000)

.MODEL LTRA100 LTRA(R=0.0 L=15n C=0.074p LEN=100.000)

.MODEL LTRA_length LTRA(R=0.0 L=15n C={epsilon*0.074p} LEN={length})

.PARAM length=30 epsilon=1

.MODEL LTRA_length2 LTRA(R=0.0 L=15n C={epsilon2*0.074p} LEN={length2})

.PARAM length2=10 epsilon2=80