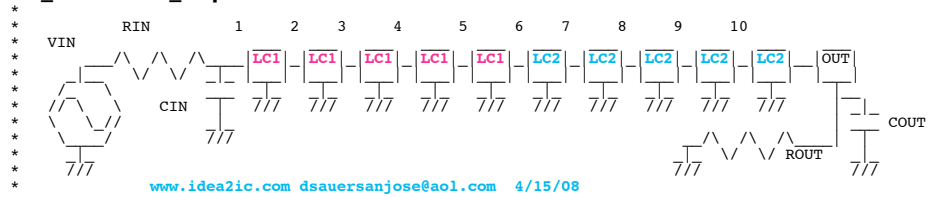


# LC\_transLine\_2Speed



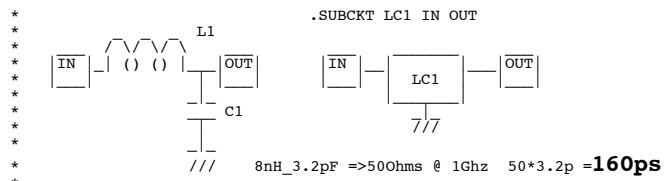
www.idea2ic.com dsauersanjose@aol.com 4/15/08

```
.OPTIONS GMIN=1e-18 METHOD=euler ABSTOL=1e-18 TEMP=27 srcsteps = 1 gminsteps = 1
VIN VIN 0 PWL( 0 0 2n 0 3.0n 1 18n 1 19.0n 0)
RIN VIN 1 50
C1 VIN 0 1.6p
XLC1 1 2 LC1
XLC2 2 3 LC1
XLC3 3 4 LC1
XLC4 4 5 LC1
XLC5 5 6 LC1
XLC6 6 7 LC2
XLC7 7 8 LC2
XLC8 8 9 LC2
XLC9 9 10 LC2
XLC10 10 OUT LC2
R1 OUT 0 50
C2 OUT 0 -.8p
.tran 0.01n 30n 0 30n
```

\*#1===The\_Goal\_Is\_To\_simulate\_Two\_different\_cables=====

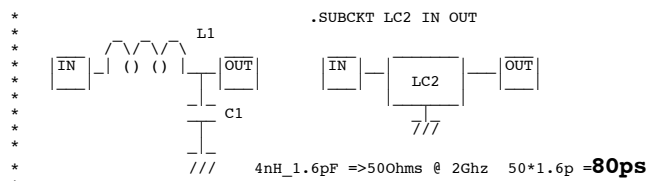
```
.control
run
plot v(1) v(6) out title RC_1GHz_and2GHz_50out
.endc
```

```
.SUBCKT LC1 IN OUT
L1 IN OUT 8n
C1 OUT 0 3.2p
.ENDS LC1
```



[http://www.idea2ic.com/PlayWithJavascript/L\\_C\\_R\\_F.html](http://www.idea2ic.com/PlayWithJavascript/L_C_R_F.html)

```
.SUBCKT LC2 IN OUT
L1 IN OUT 4n
C1 OUT 0 1.6p
.ENDS LC1
```

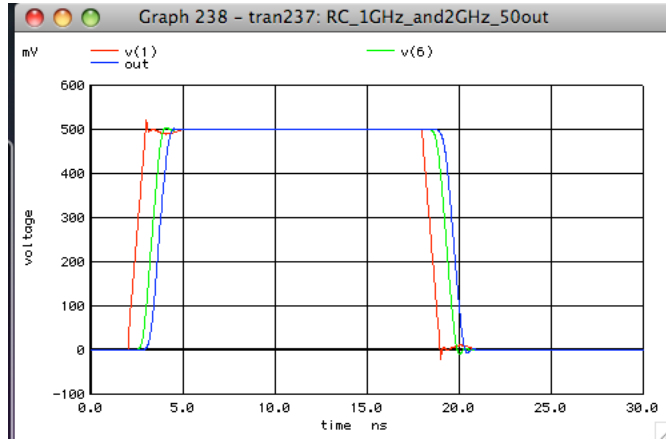


.end

=====END\_OF\_SPICE=====

\*#1===The\_Goal\_Is\_To\_simulate\_Two\_different\_cables=====

This example is like connecting two different 50 Ohms cables.  
The cable may have two different speeds.  
Subcircuits LC1 and LC2 resonate at two different rates.  
Their LC resonance frequencies differ by a factor of two.  
Both LC1 and LC2 resonate at 50 Ohms



Capacitors C1 and C2 attempt to provide  
symmetrical capacitance to all inductors.

There appears to be a slight reflection at the cable junctions.  
The cable speeds still matches the RC time constants.