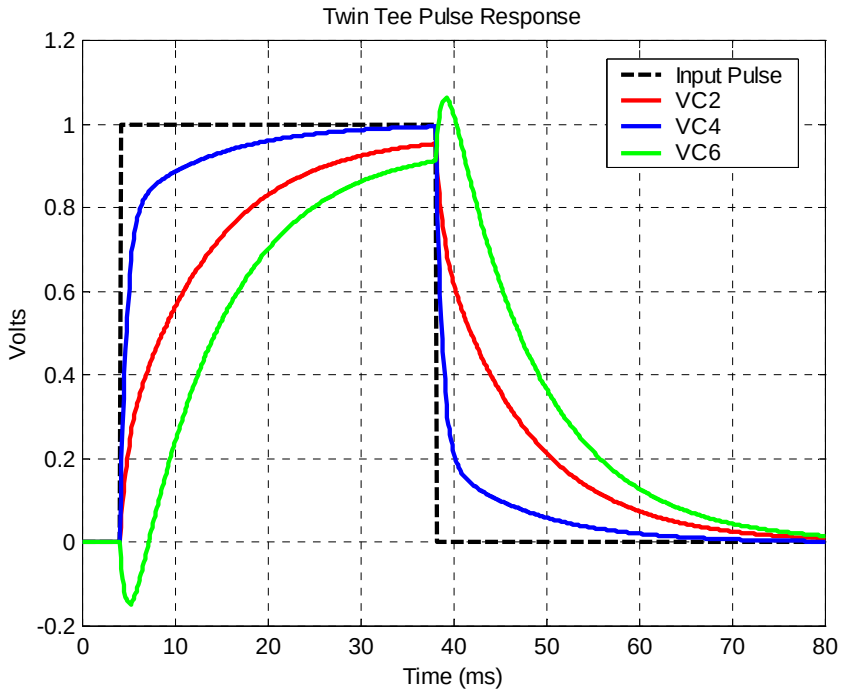
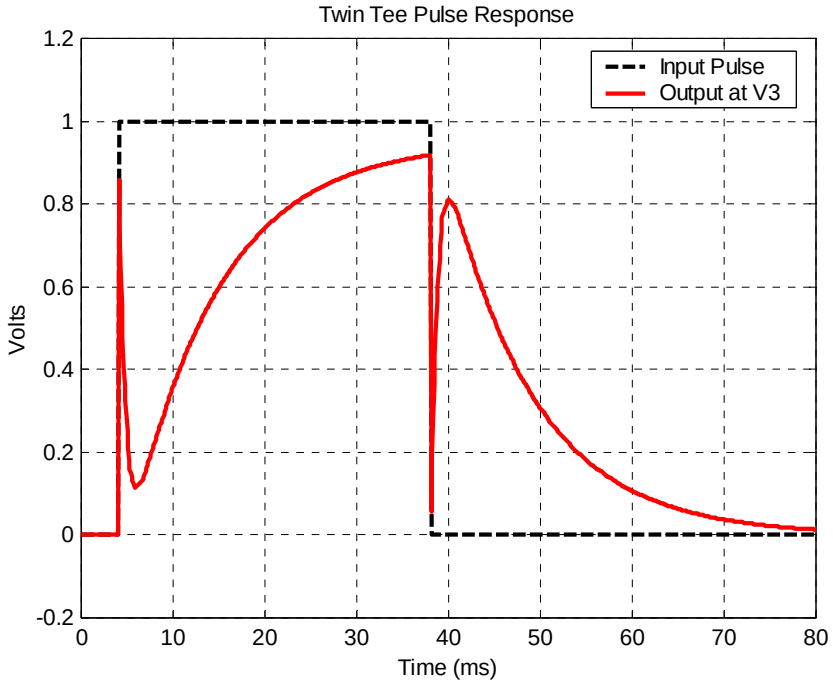
Spice Verification of Twin-T Network Transient Analysis

```
TWIN-T TRANSIENT ANALYSIS
* File:  TwinTran.cir
*
Vin 99 0 PWL(0,0,4.0m,0,4.0001m,1,38m,1,38.001m,0)
R1 99 2 267K
R3 2 3 267K
R5 1 0 133K
R7 3 0 10Meg
C2 2 0 0.02u; E2 = 1V; V2 +
C4 99 1 0.01u; E4 = 1V
C6 3 1 0.01u; E6 = 1V; V3 +
.TRAN 0.1ms 80ms; 0 0.05ms
.PRINT TRAN V(99) V(2) V(99,1) V(3,1) V(3)
*.OPTIONS ITL5=0
.OPTIONS NOMOD NOPAGE NOECHO
.END
```

M-File reading and plotting output from Spice *.out file generated from above.

```
% Test file read
% File:  c:\M-files\shortcut_updates\readtxt_TwinT.m
% 2/14/07
%
clc;clear;
ms=1e-3;
[time,v99,v2,v991,v31,v3]=textread('c:\Spiceapps\datfiles\TwinTran.txt','%f %f %f %f %f %f');
%
h=plot(time/ms,v99,'k--',time/ms,v2,'r',time/ms,v991,'b',time/ms,v31,'g');
set(h,'LineWidth',2);
axis([0 80 -0.2 1.2]);
grid on
xlabel('Time (ms)');
ylabel('Volts');
title('Twin Tee Pulse Response');
legend('Input Pulse','VC2','VC4','VC6',0);
figure
%
h=plot(time/ms,v99,'k--',time/ms,v3,'r');
grid on
axis([0 80 -0.2 1.2]);
set(h,'LineWidth',2);
xlabel('Time (ms)');
ylabel('Volts');
title('Twin Tee Pulse Response');
legend('Input Pulse','Output at V3',0);
```


Twin Tee Pulse Response
Input Pulse
VC2
VC4
VC6
Volts
Time (ms)
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
10
20
30
40
50
60
70
80


Twin Tee Pulse Response
Input Pulse
Output at V3
Volts
Time (ms)
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
10
20
30
40
50
60
70
80