2/11/2007

Spice Verification of Elliptical Low Pass Filter

Spice Input File

```
Elliptical 7th Order LPF - Spice Verification
* File: c:\Spiceapps\Cirtext\Ellipt7.cir
* 5/06/05
VEin 99 0 AC 1
R1 99 12 19.6K
R2 12 1 196K
R3 1 2 1K
R4 1 5 147K
R5 2 0 71.5
R6 4 3 37.4K
R7 5 6 154K
R8 13 7 110K
R9 13 4 260
R10 4 8 740
R11 8 0 402
R12 9 10 27.4K
R13 7 11 110K
R14 14 10 40
R15 10 0 960
*
C1 12 1 2.67n
C2 3 2 2.67n
C3 6 3 2.67n
C4 5 4 2.67n
C5 9 8 2.67n
C6 11 9 2.67n
C7 7 10 2.67n
*
EE1 1 0 0 12 1E6
EE2 13 0 6 13 1E6
EE3 14 0 11 14 1E6
*
.OPTIONS NOMOD NOPAGE NOECHO
.AC DEC 100 100 10K
.PRINT AC V(14) VP(14)
.END
```

MATLAB file reading text file created from Ellipt7.cir (Elllipt7.out) above.

```
% Test file read
% File:  c:\M-files\shortcut_updates\readtxt.m
% 2/11/07
%
clc;clear;
[freq,mag,ph]=textread('c:\Spiceapps\datfiles\Elliptf7.txt','%f %f %f');
%
h=plot(log10(freq),20*log10(mag),'k');
set(h,'LineWidth',2);
hold on
% Plot -210 dB asymptote
h=plot(log10(freq),-210*log10(freq/1000),'k--');
hold off
axis([2 4 -80 40]);
set(h,'LineWidth',2);
grid on
xlabel('Log Freq(Hz)');
ylabel('dBV');
title('7th Order Elliptical LPF');
legend('Output','-210 dB Asymptote',0);
figure
%
h=plot(log10(freq),ph,'k');
grid on
xlabel('Log Freq(Hz)');
ylabel('Deg');
title('Elliptical LPF Phase');
axis([2 4 -200 200]);
set(h,'LineWidth',2);
```

Plots from above M-File: