

6.002 Demo# 20

Displays the Transfer Function of RC Lowpass and Highpass Lectures 16 and 17

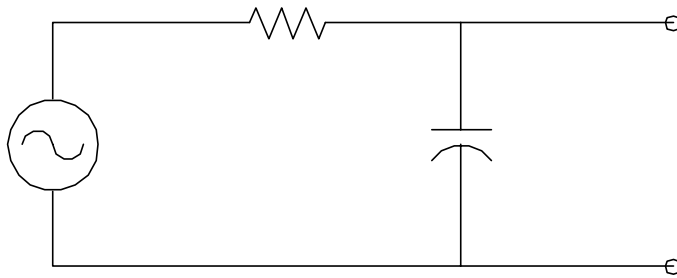
Agarwal Fall 00

Purpose:

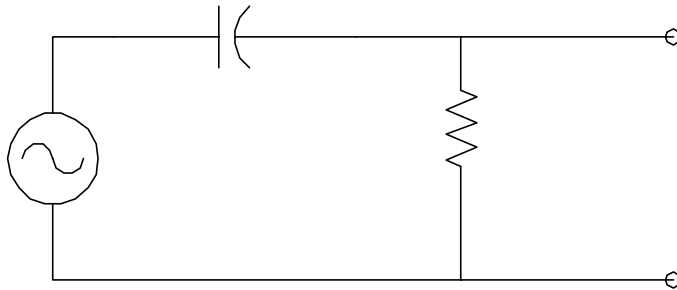
This demonstration shows the magnitude and phase plots for an RC lowpass filter on the Dynamic Signal Analyzer. Also allow students to hear the sine tone.

Steps:

Part 1: Low Pass

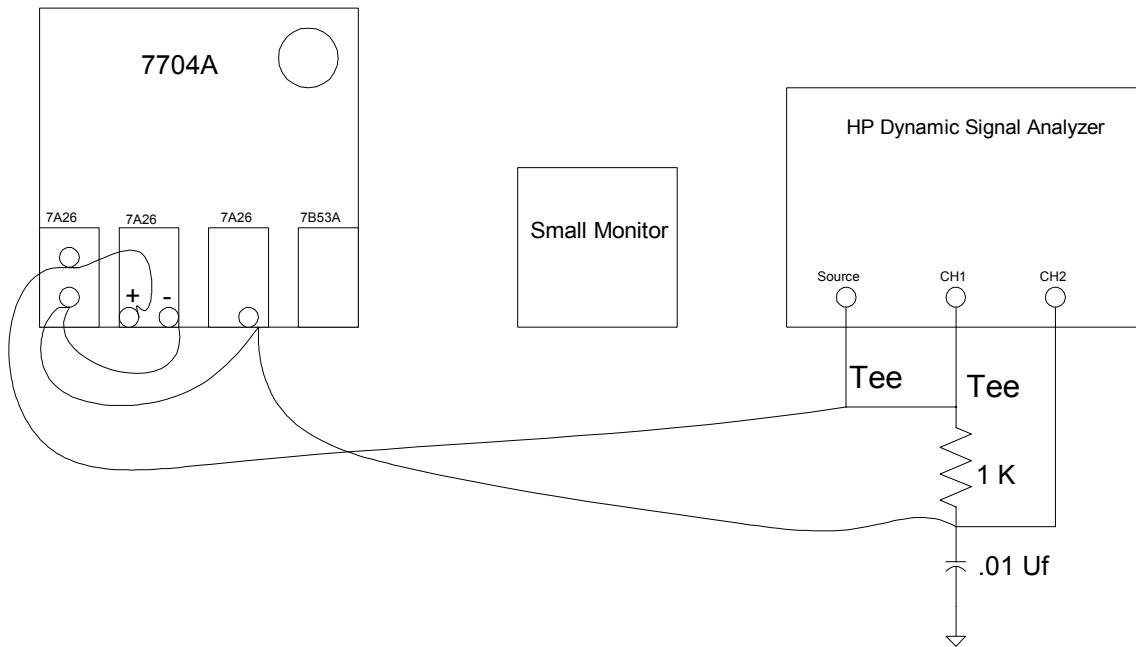


Part 2: High Pass



Description: Low Pass / HighPass RC

1. Press Power On (Wait)
2. Press Preset
3. Press Pause/Cont.
4. Press Select Meas.
5. Press Freq Resp.
6. Press Meas. Mode
7. Press Log. Res.
8. Press Swept Sine
9. Press Source
10. Press Source Level
11. Press 1
12. Press V
13. Press Range
14. Press Auto 1 Up + Down
15. Press Auto 2 Up + Down
16. Press Coord.
17. Press Mag (dB)
18. Press Scale
19. Press X FIXD Scale
20. Press .01,100
21. Press kHz
22. Press 0, -38 (use -42 for 10K and 0.022)
23. Press dB
24. Press B
25. Press Coord.
26. Press Phase
27. Press Scale
28. Press X Fixd Scale
29. Press .01, 100
30. Press kHz
31. Press Y Fixd Scale
32. Press 0,-90 (High Pass 0, 90)
33. Press Degree
34. Press Freq.
35. Press Start Freq.
36. Press 10
37. Press Hz
38. Press Stop Freq.
39. Press 100
40. Press kHz
41. Press Sweep Rate
42. Press 5
43. Press Sec/Dec
44. Press Start



Equipment:

Fader System and (2) cameras
 Small monitor
 HP Dynamic Signal Analyzer
 (2) RC Circuit of 1 K, .01 uF
 (kept in 6.002 demo drawer)
 (2) BNC-Clip, BNC Tees
 Amplifier and speaker

Scope Settings:

Vert CH1 = 2v/Div, Display CHOP
 Vert CH2 = 2v/Div
 Vert Mode = Left
 Vert CH3 & CH4 = .5v/Div
 Horiz. CH2 = .2v/Div Display CH2

Trig Amplifier

Mode = Norm
 Coupling = DC
 Source = Int
 Sweep = 10 ms/Div