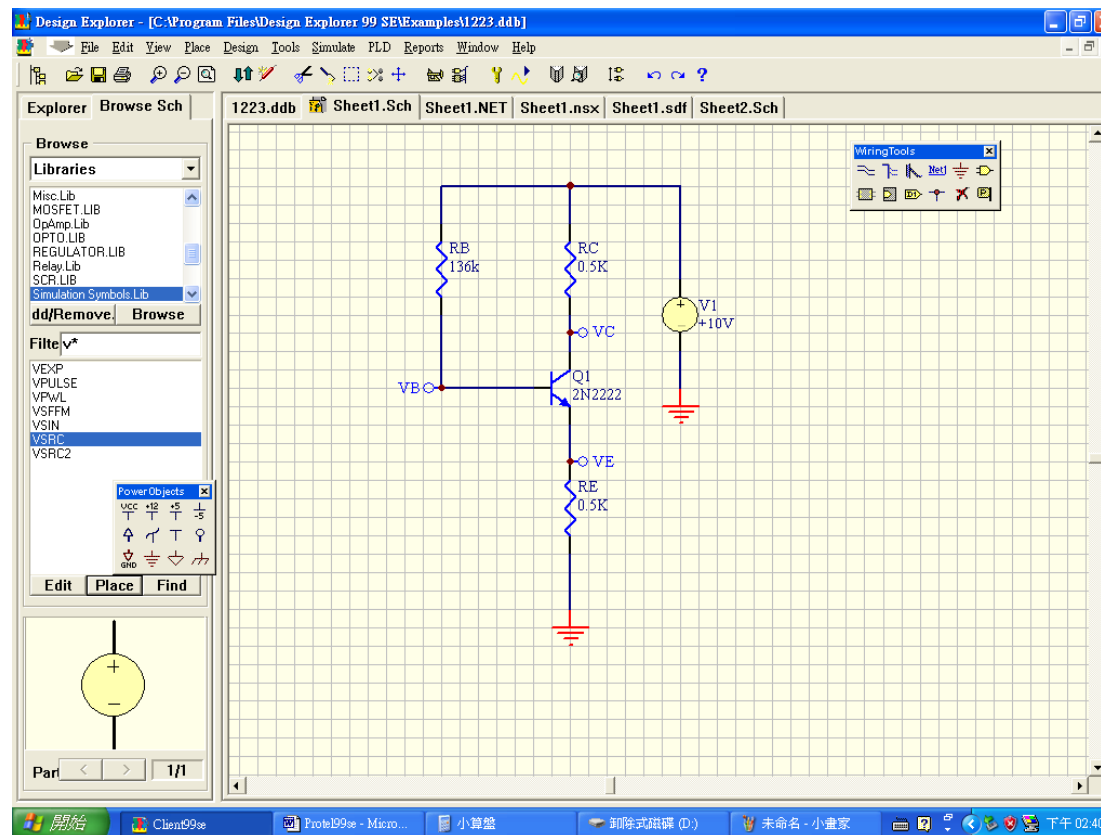


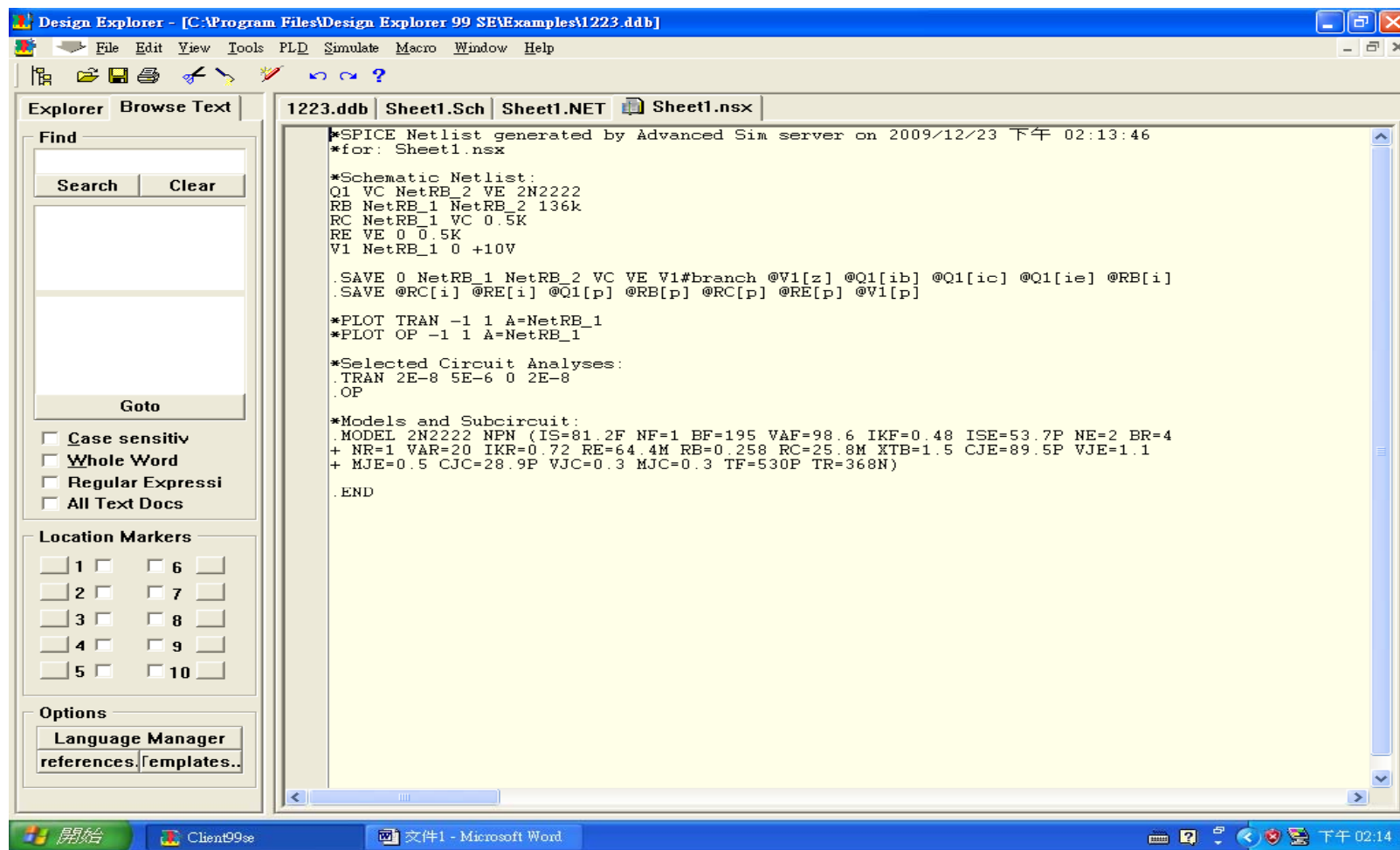
第11章 分析設定和偏壓點分析

- Protel 99 SE的SPICE串接檔說明
- 設定畫面
- 偏壓點分析

電晶體固定偏壓式電路



PROTEL提供的SPICE 串接檔



```
*SPICE Netlist generated by Advanced Sim server on 2009/12/23 下午 02:13:46
*for: Sheet1.nsx

*Schematic Netlist:
Q1 VC NetRB_2 VE 2N2222
RB NetRB_1 NetRB_2 136k
RC NetRB_1 VC 0.5K
RE VE 0 0.5K
V1 NetRB_1 0 +10V

.SAVE 0 NetRB_1 NetRB_2 VC VE V1#branch @V1[z] @Q1[ib] @Q1[ic] @Q1[ie] @RB[i]
.SAVE @RC[i] @RE[i] @Q1[p] @RB[p] @RC[p] @RE[p] @V1[p]

*PLOT TRAN -1 1 A=NetRB_1
*PLOT OP -1 1 A=NetRB_1

*Selected Circuit Analyses:
.TRAN 2E-8 5E-6 0 2E-8
.OP

*Models and Subcircuit:
.MODEL 2N2222 NPN (IS=81.2F NF=1 BF=195 VAF=98.6 IKF=0.48 ISE=53.7P NE=2 BR=4
+ NR=1 VAR=20 IKR=0.72 RE=64.4M RB=0.258 RC=25.8M XTB=1.5 CJE=89.5P VJE=1.1
+ MJE=0.5 CJC=28.9P VJC=0.3 MJC=0.3 TF=530P TR=368N)

.END
```

SPICE 格式宣告

```
*SPICE Netlist generated by Advanced Sim server on 2009/12/23 下午 02:13:46
*for: Sheet1.nsx

*Schematic Netlist:
Q1 VC NetRB_2 VE 2N2222
RB NetRB_1 NetRB_2 136k
RC NetRB_1 VC 0.5K
RE VE 0 0.5K
V1 NetRB_1 0 +10V
```

.SAVE 儲存分析結果

```
.SAVE 0 NetRB_1 NetRB_2 VC VE V1#branch @V1[z] @Q1[ib] @Q1[ic] @Q1[ie] @RB[i]  
.SAVE @RC[i] @RE[i] @Q1[p] @RB[p] @RC[p] @RE[p] @V1[p]
```

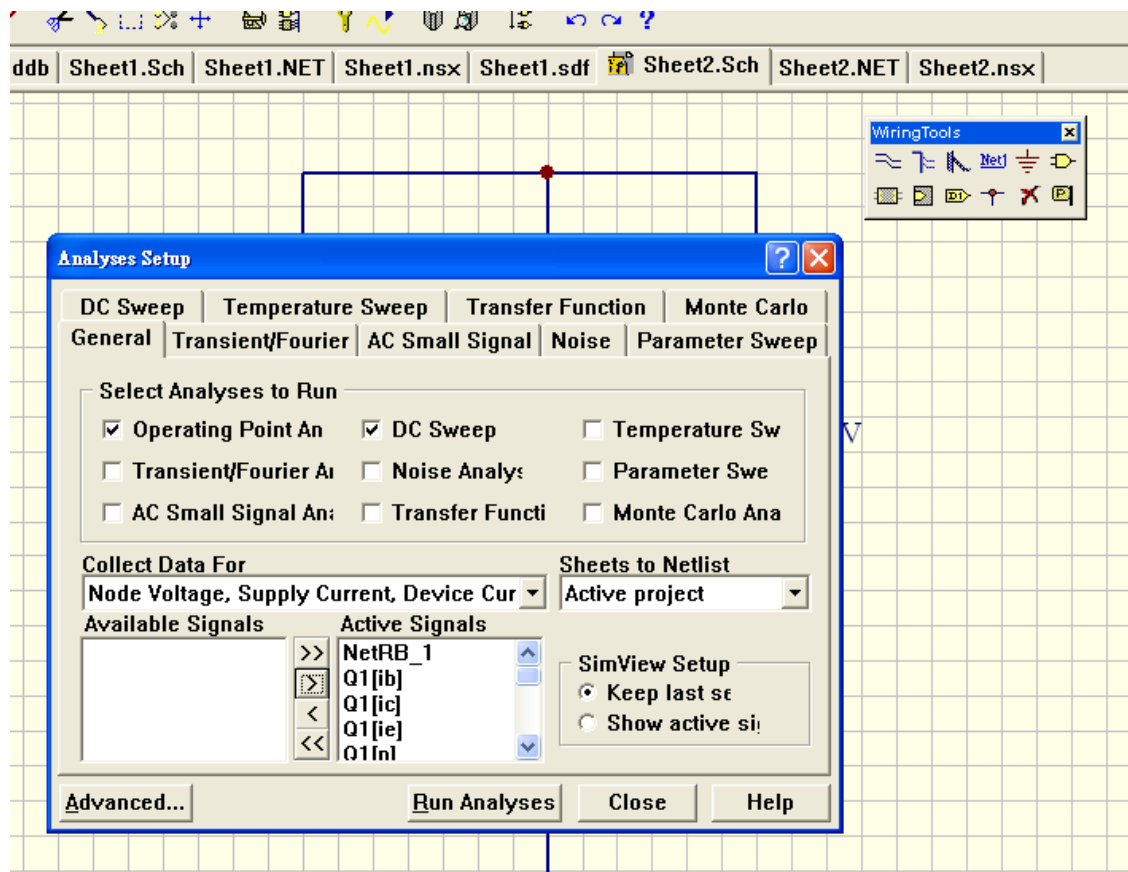
畫出偏壓電分析的節點及轉移函數分析

```
*PLOT TRAN -1 1 A=NetRB_1  
*PLOT OP -1 1 A=NetRB_1
```

宣告模型參數的內容及結束命令

```
*Models and Subcircuit:  
.MODEL 2N2222 NPN (IS=81.2F NF=1 BF=195 VAF=98.6 IKF=0.48 ISE=53.7P NE=2 BR=4  
+ NR=1 VAR=20 IKR=0.72 RE=64.4M RB=0.258 RC=25.8M XTB=1.5 CJE=89.5P VJE=1.1  
+ MJE=0.5 CJC=28.9P VJC=0.3 MJC=0.3 TF=530P TR=368N)  
  
.END
```

偏壓點分析設定畫面



偏壓點分析結果

