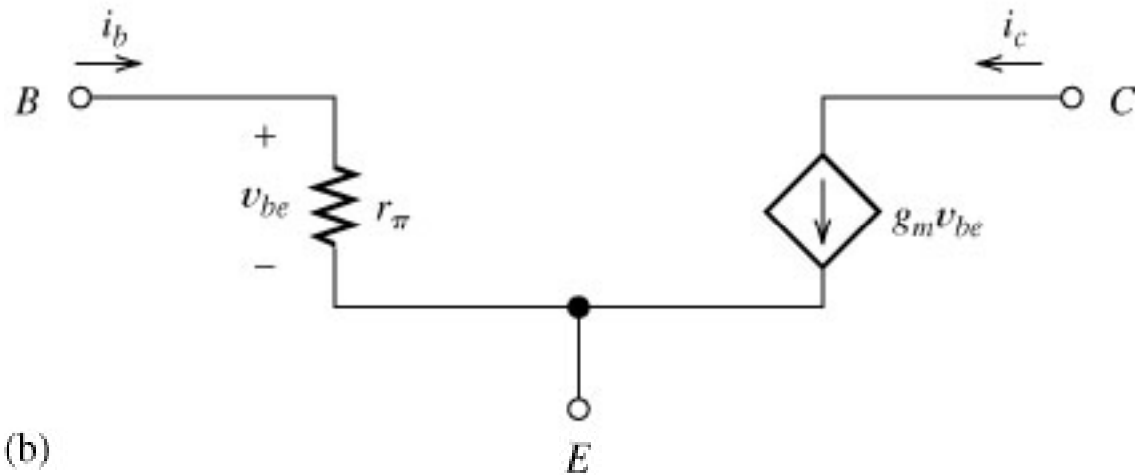
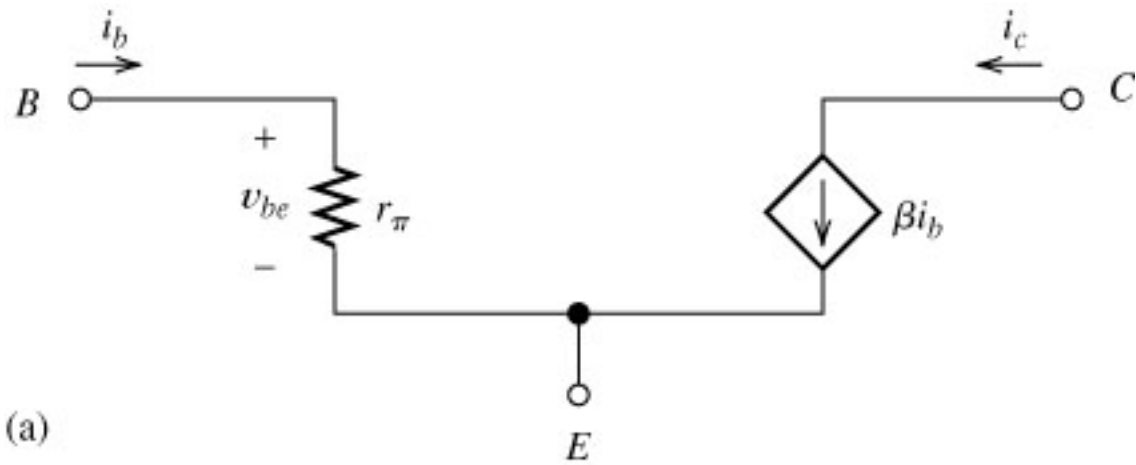
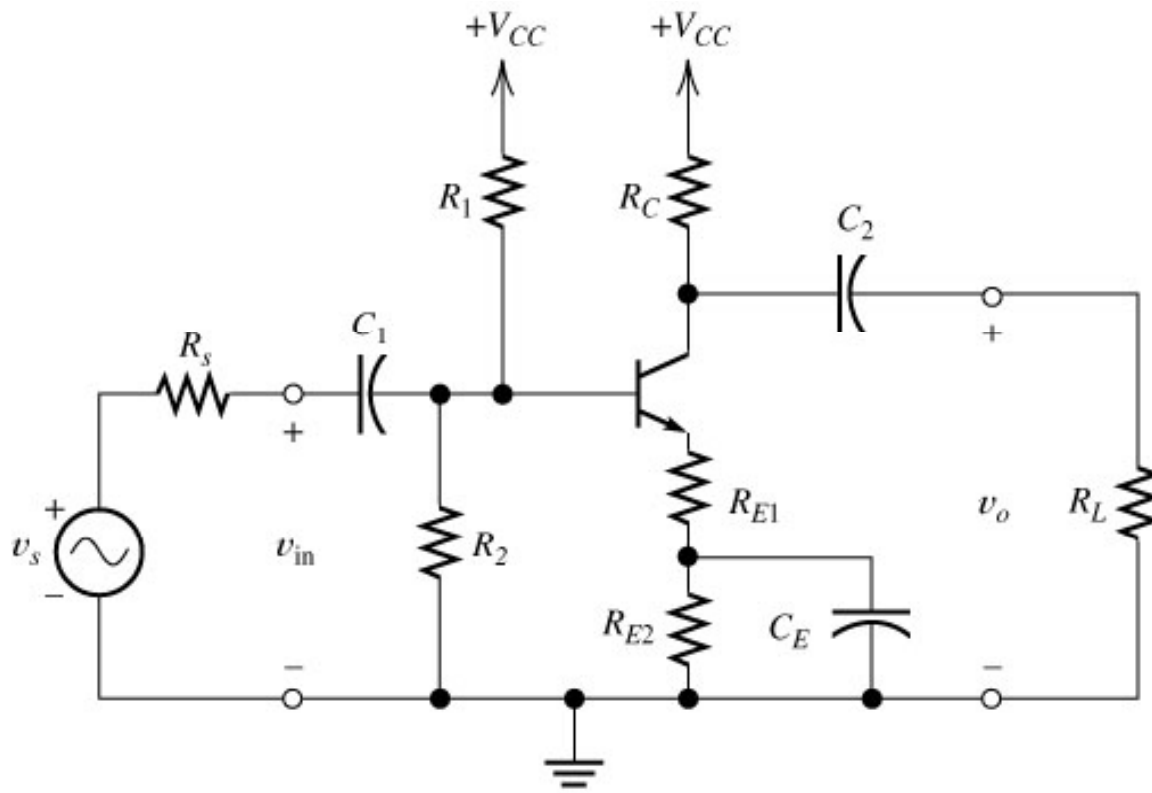


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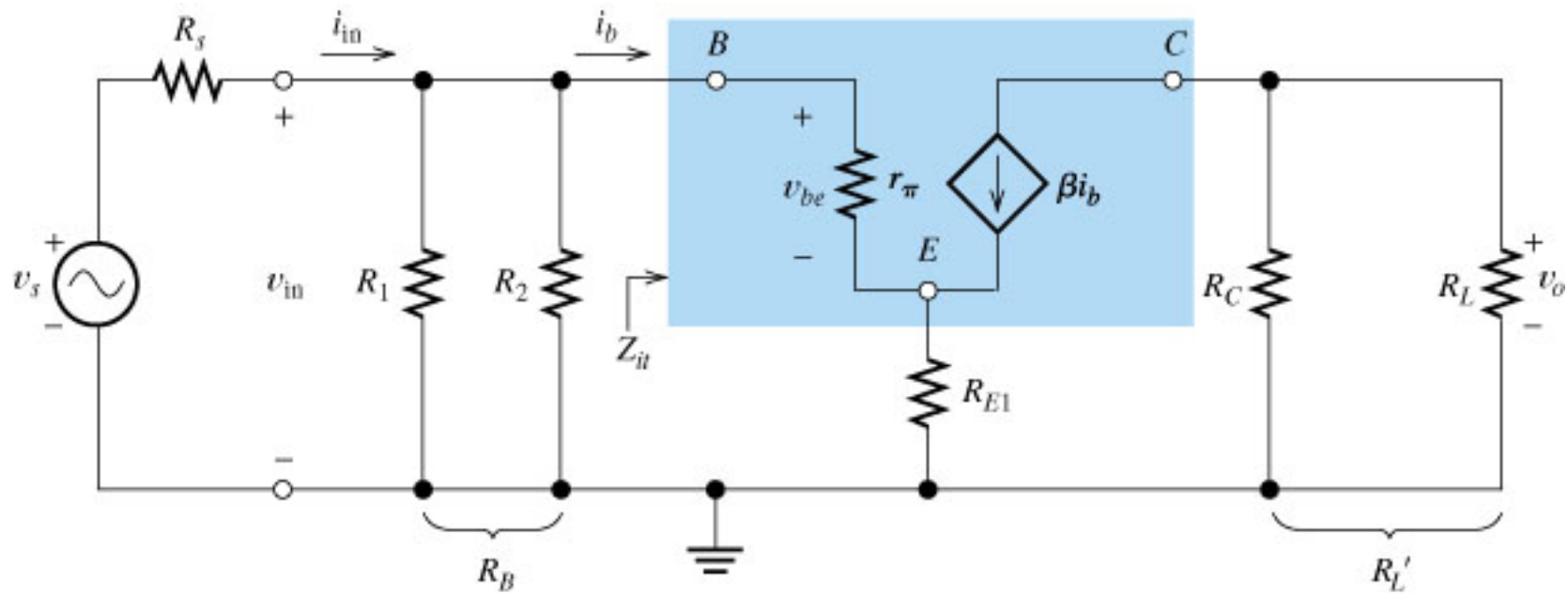
Professor Ronald L. Carter  
ronc@uta.edu  
<http://www.uta.edu/ronc/>



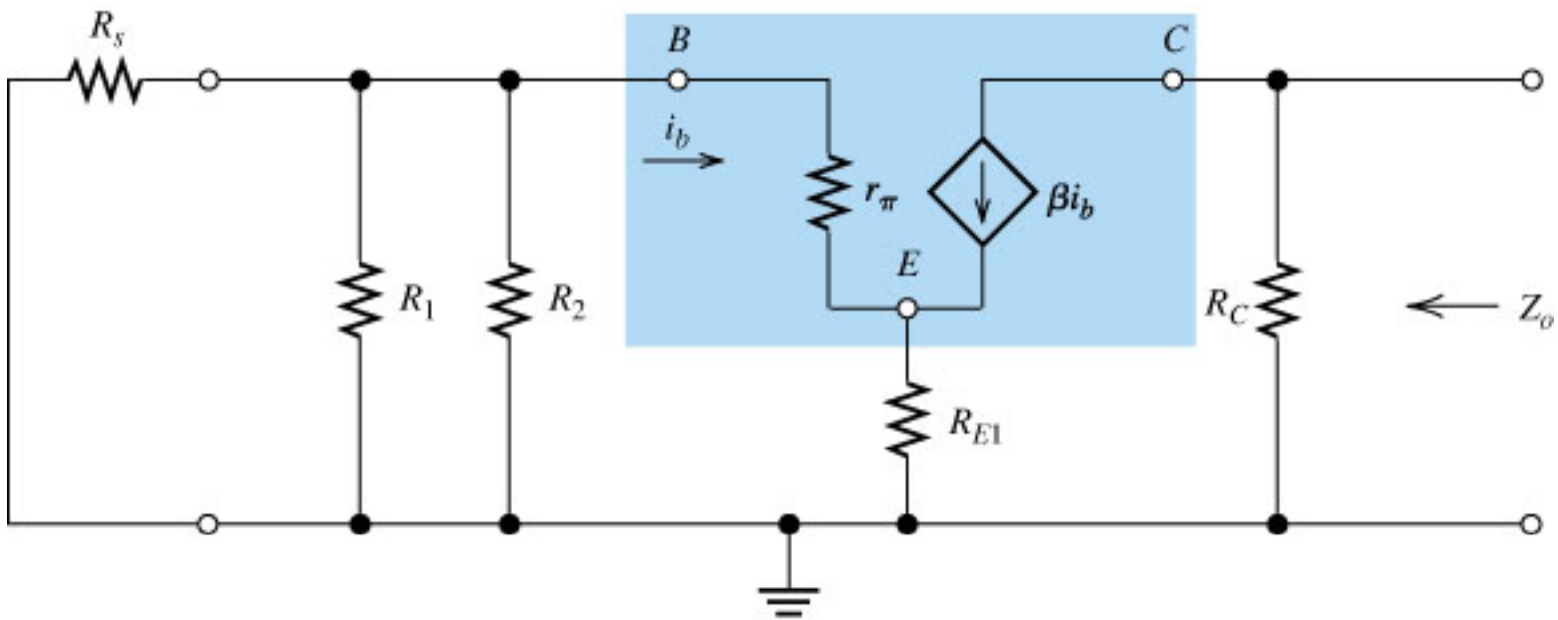
L17 - 25Mar09 **Figure 4.33** Small-signal equivalent circuits for the BJT.



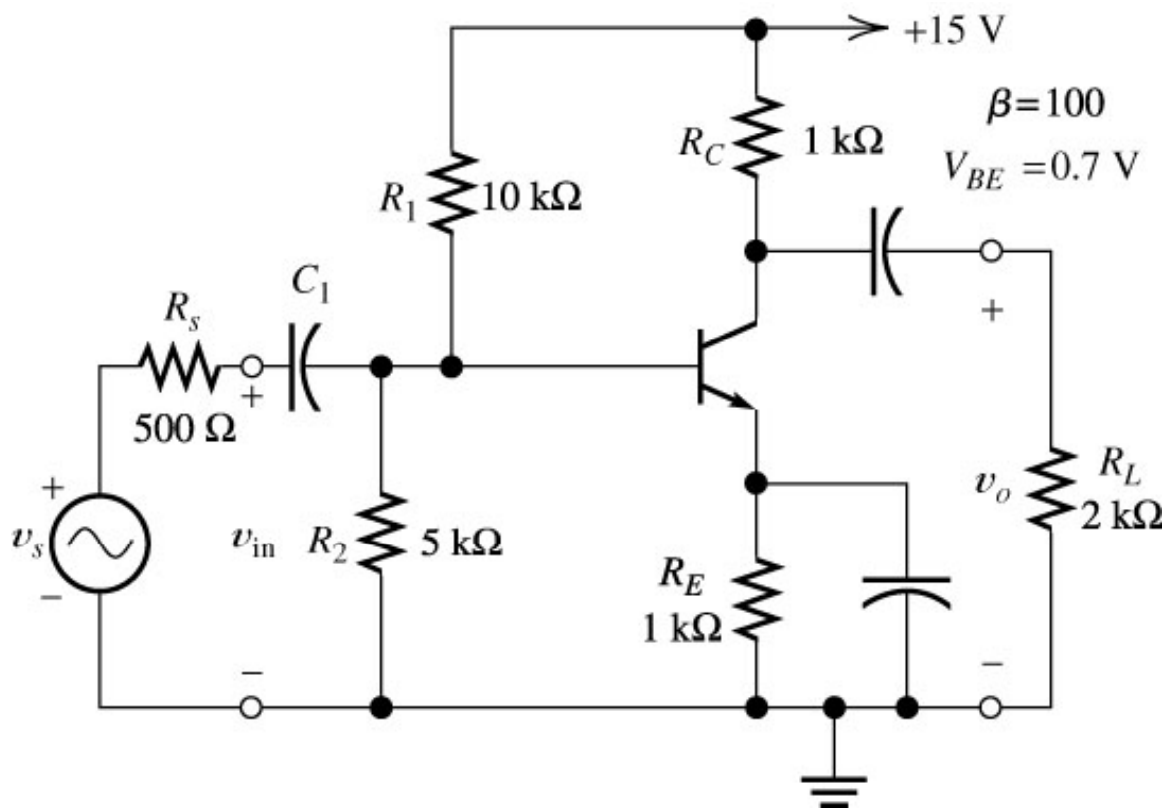
(a) Actual circuit



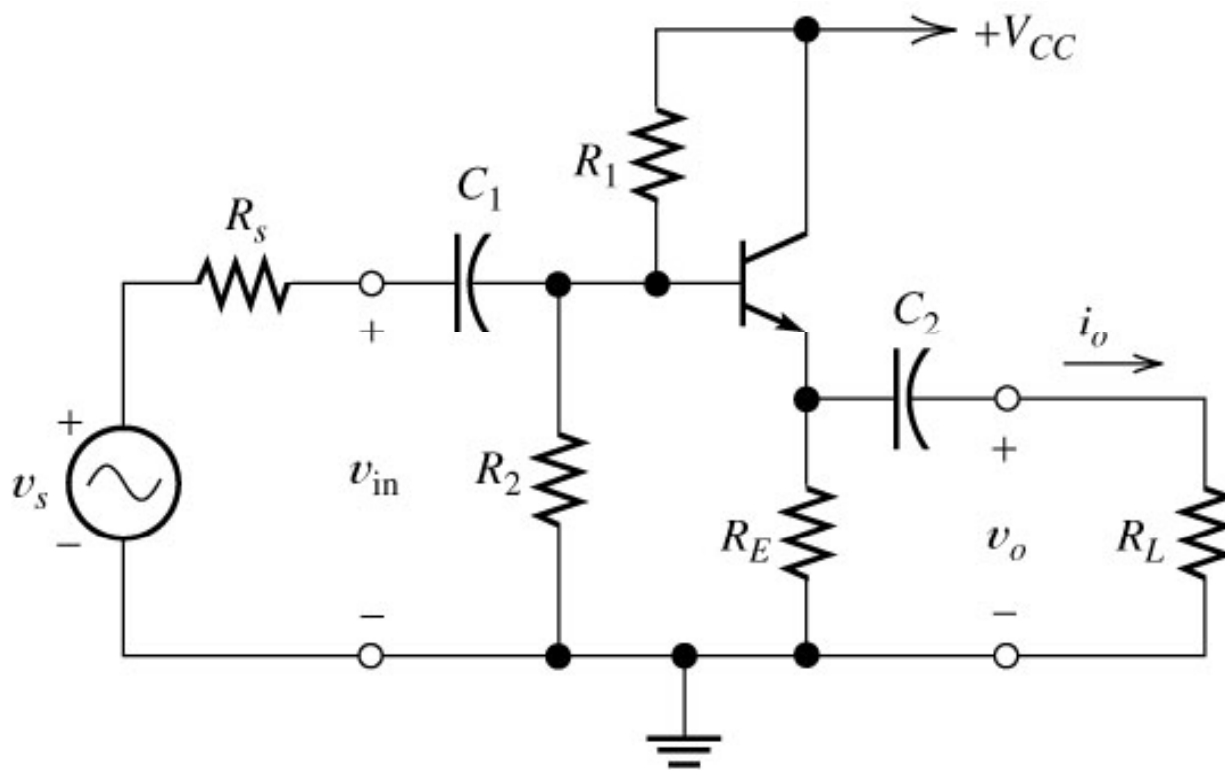
(b) Small-signal midband equivalent circuit



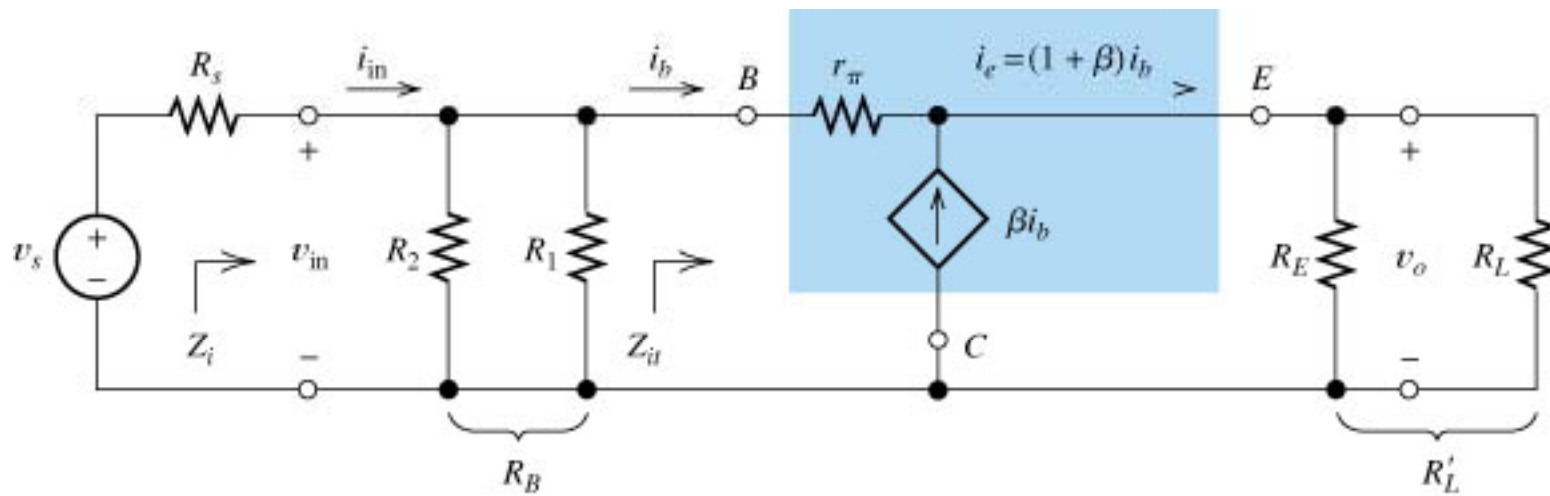
(c) Equivalent circuit used to find  $Z_o$



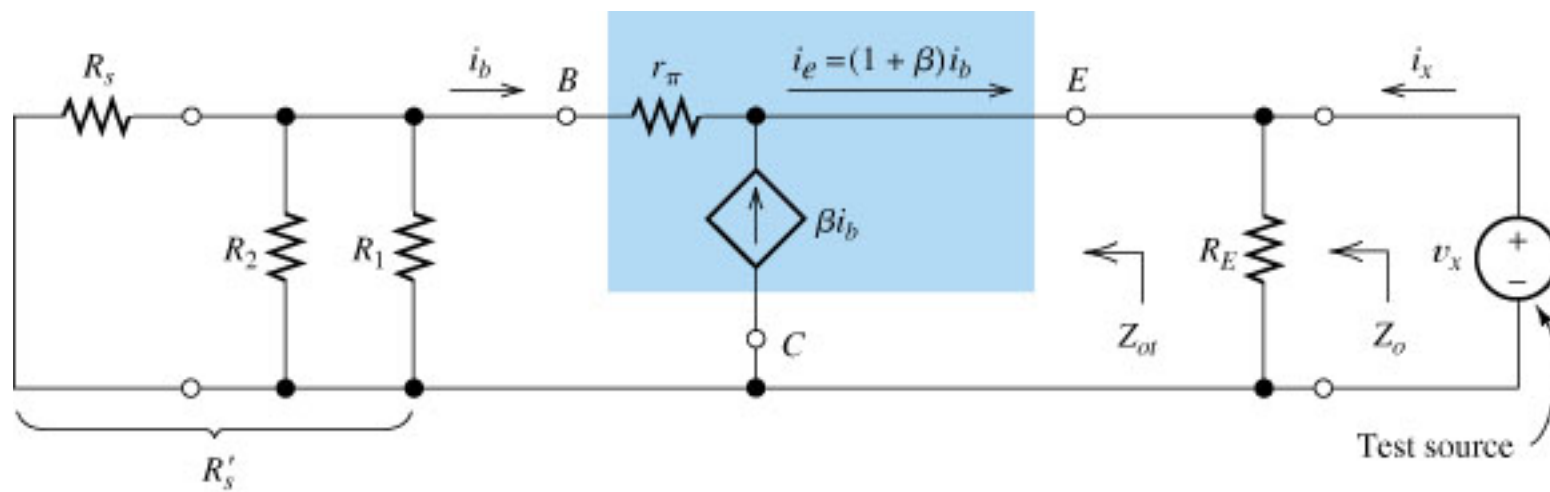
L17 - 25Mar09 **Figure 4.35** Common-emitter amplifier of Example 4.9.



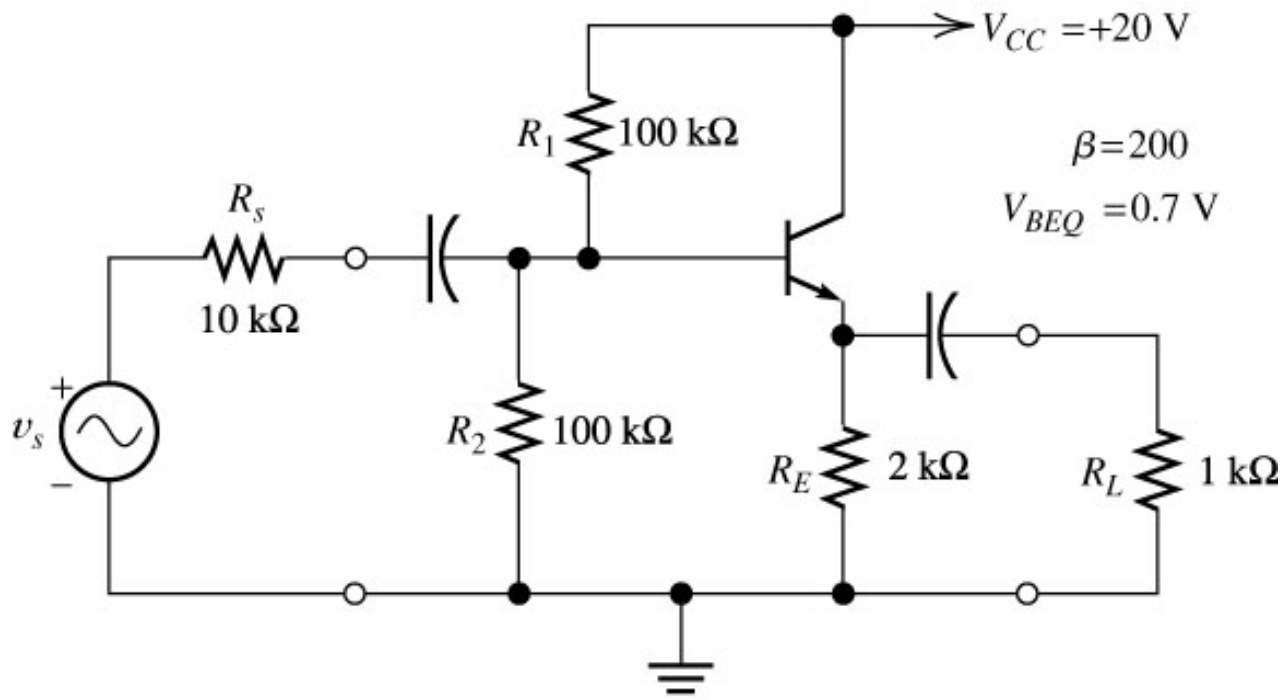
(a) Actual circuit



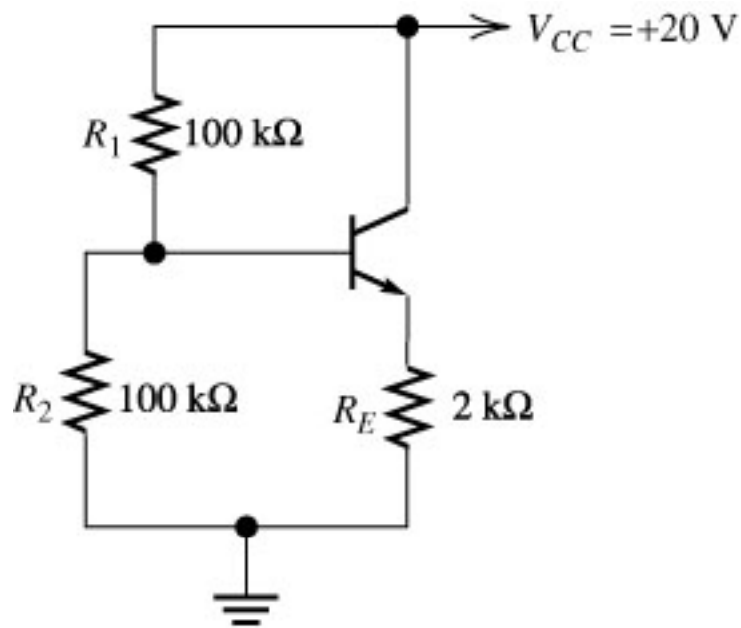
(b) Small-signal midband equivalent circuit



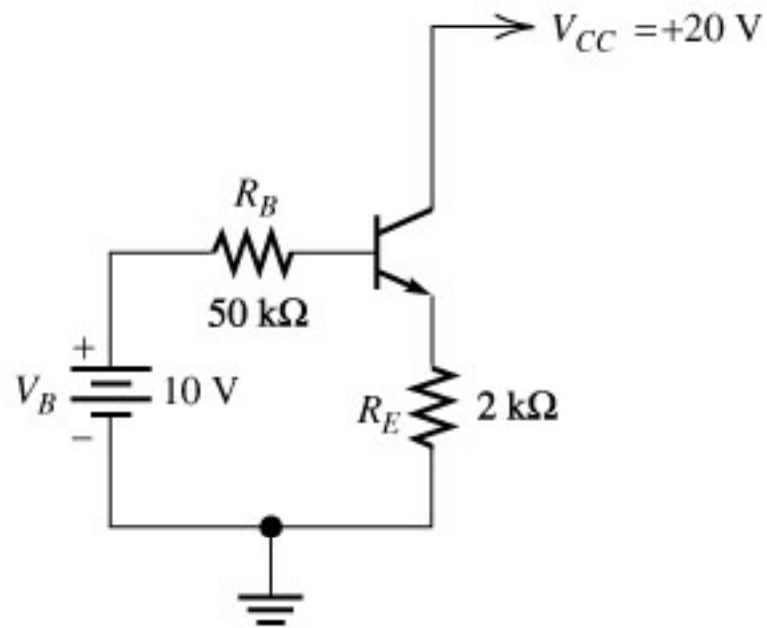
(c) Equivalent circuit used to find output impedance  $Z_o$



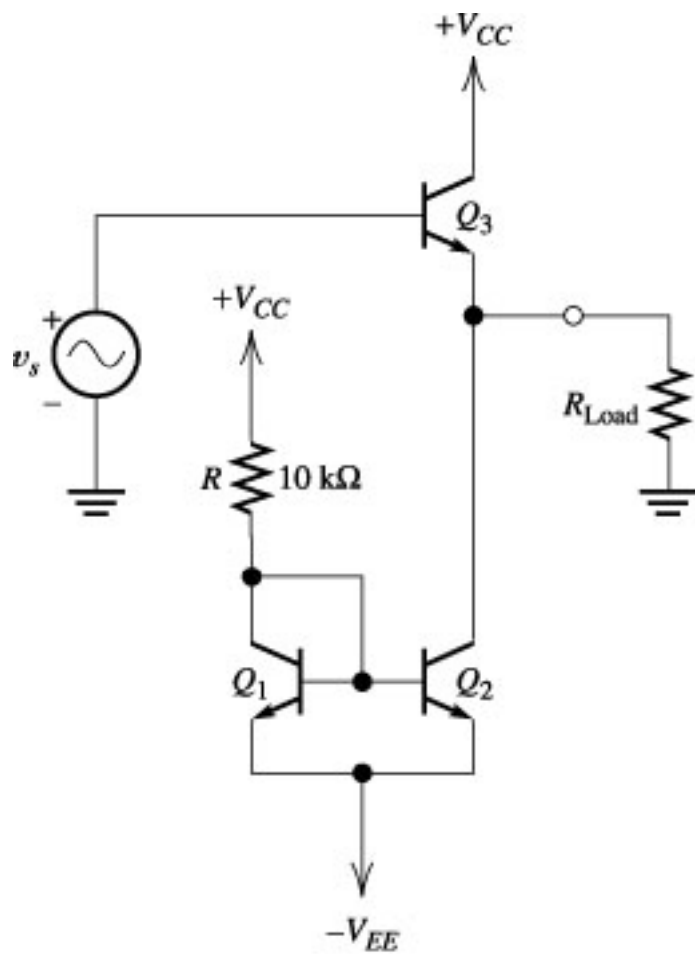
(a) Complete circuit



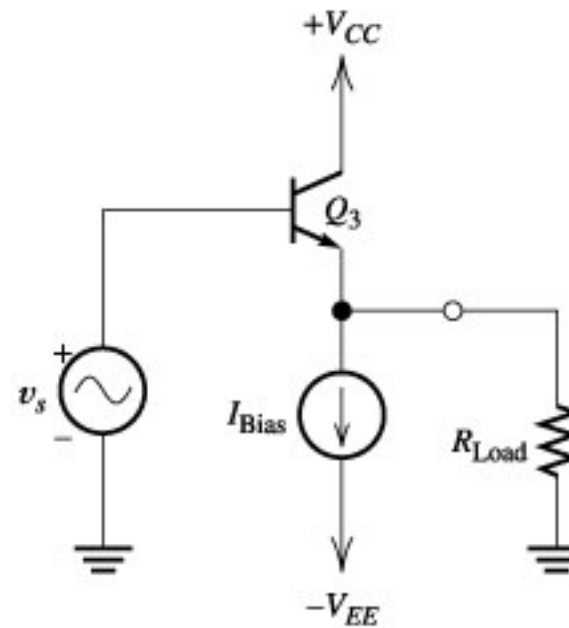
(b) Dc bias circuit



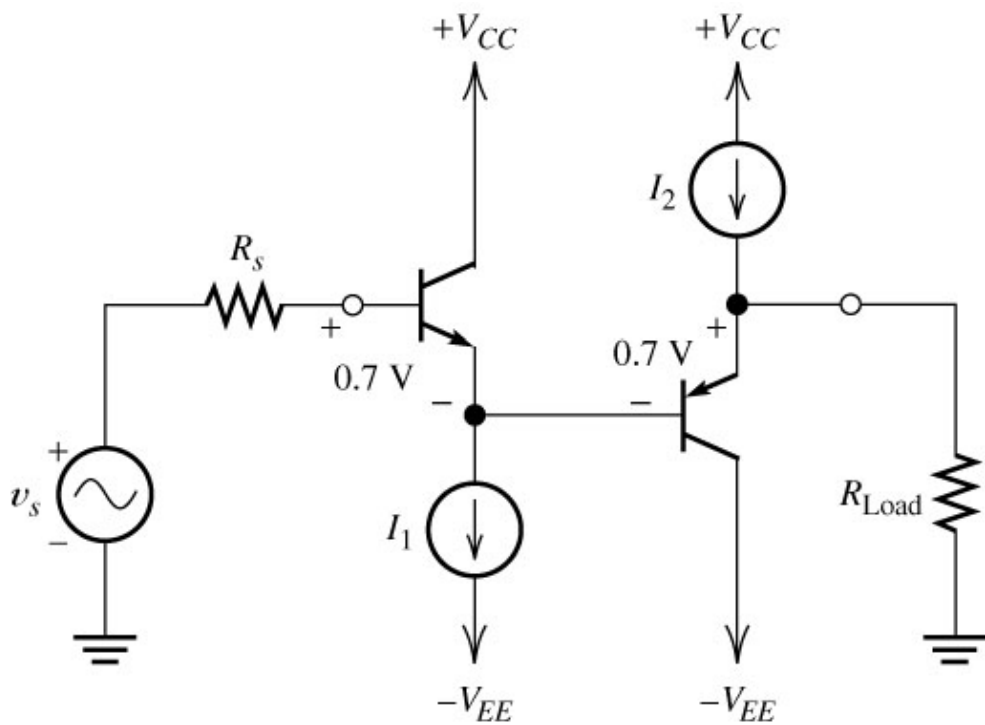
(c) Equivalent bias circuit



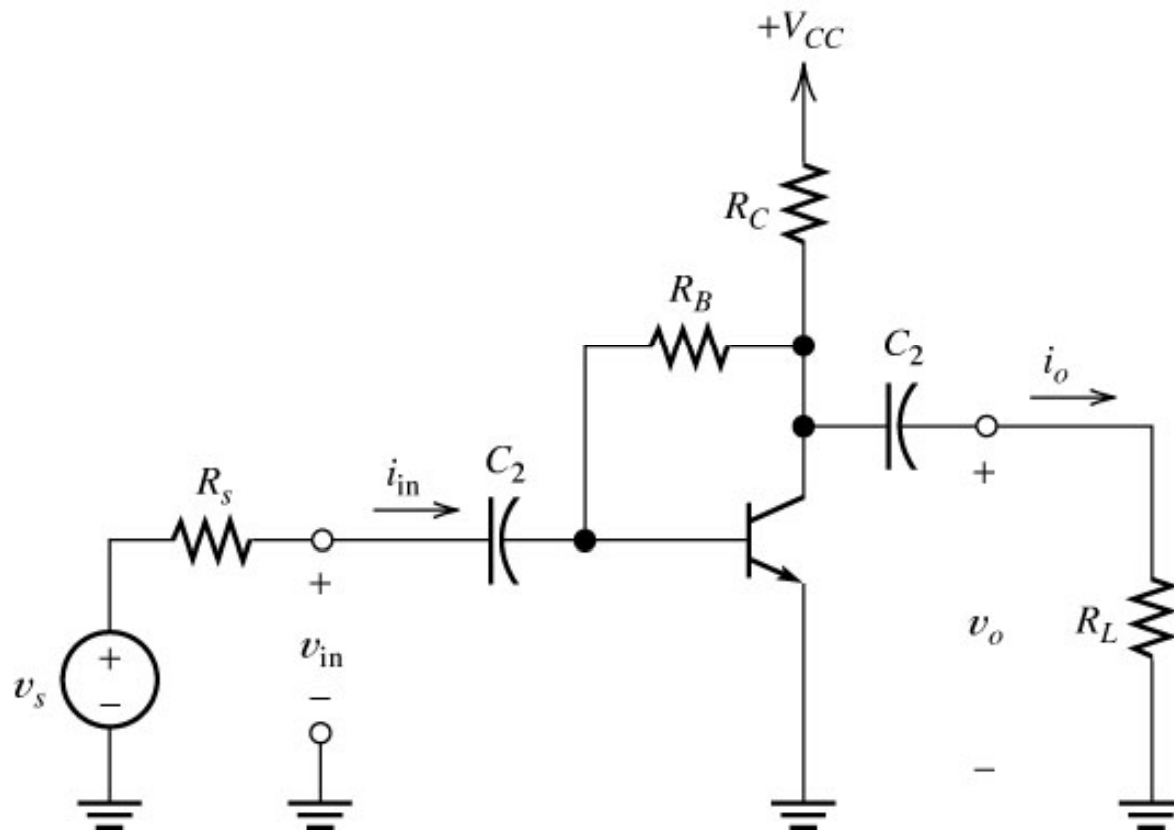
(a) Detailed diagram



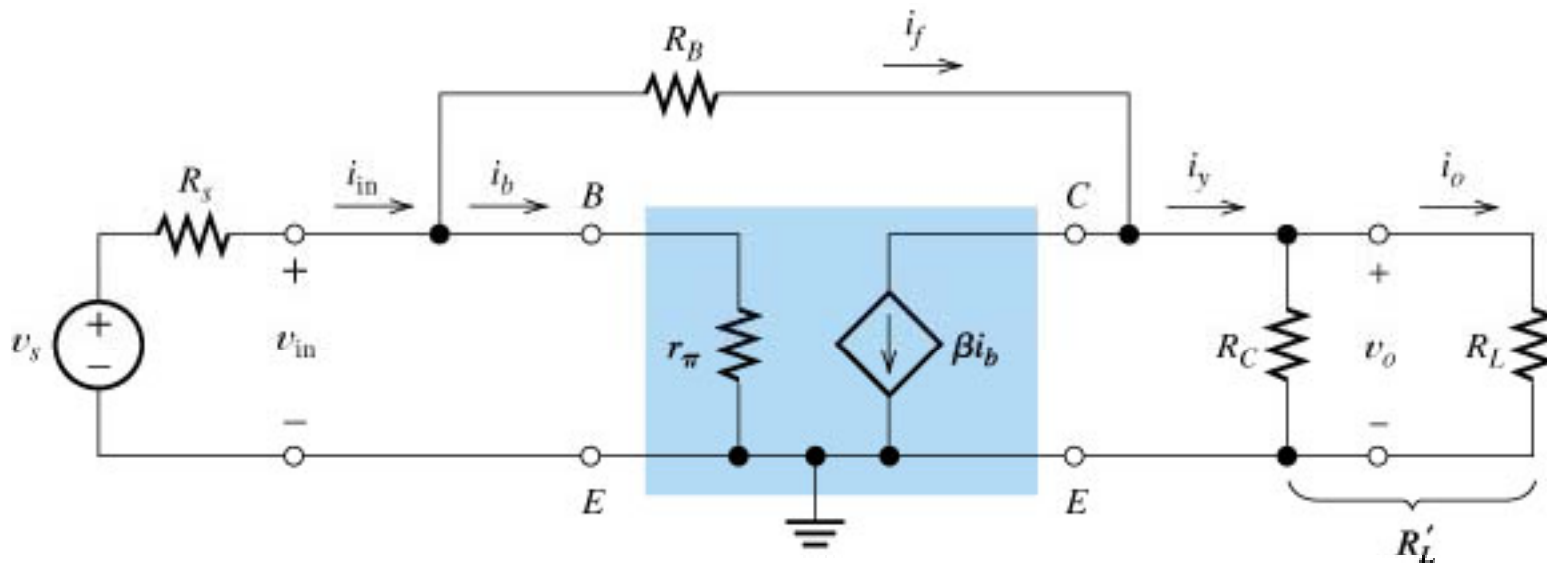
(b) Simplified diagram



**Figure 7.3** The offset voltage can be reduced by cascading a complementary (*pn*p) emitter follower.



L17 - 25Mar09 **Figure 4.39** Variation of the common-emitter amplifier.



**Figure 4.40** Small-signal equivalent circuit for the amplifier of Figure 4.39.

# References and Endnotes

- Where not otherwise noted, figures with a figure number (e.g., Fig 3.2) are taken from:
  - Electronics, 2nd edition, by Allan R. Hambley, Prentice Hall, Upper Saddle River, NJ, © 2000