P1.

Diagram, schematic

Description automatically generated

Text, letter

Description automatically generated

Diagram, text, letter

Description automatically generated

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Vc [V] | Ve [V] | Ic [mA] | Avo [V/V] | Av [V/V]  RL = 180Ω | Avs [V/V]  RL = 180 Ω  Rs = 50 Ω | Ro [kΩ] |
| 11.98 | 7.63 | 0.00748 | -11.35 | -0.71 | -0.703 | 2.7 |

**Table P1.** Quiescent and AC parameters of the CE amplifier of **Figure 1.**

P2.

Diagram, schematic

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vc [V] | Ve [V] | Ic [mA] | Ie2 [mA] | Ic2 [mA] | Avo [V/V] | Av [V/V]  RL = 180Ω | Avs [V/V]  RL = 180Ω  Rs = 50Ω | Ro [kΩ] |
| 12.03 | 7.58 | 1.115 | 9.44 | 9.37 | 43.19 | 5.62 | 5.39 | 0.865 |

**Table P2.** Quiescent and AC parameters of the two-stage amplifier of **Figure 2.**

P3.

Diagram, schematic

Description automatically generated

**Figure 3(a).** Design tested in multisim using RL = 100kΩ, based on **Figure 2.**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Chart, histogram

Description automatically generated

Graphical user interface, application

Description automatically generated

**Graph P3(a).** Source, input and output voltage waveforms of the amplifier of **Figure 2,** with Rs = 50Ω and RL = 100kΩ.

Diagram, schematic

Description automatically generated

**Figure 3(b).** Same as **Figure 3(a),** but has RL = 180Ω.

Chart

Description automatically generated

Chart

Description automatically generated

Chart

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence

**Graph P3(b).** Source, input, and output voltage waveforms of the amplifier of **Figure 2,** with Rs = 50Ω and RL = 180Ω.