The step numbers in this data sheet refer to those in the laboratory exercise instructions.

Step 4:

Table 1. 1N4007 forward-bias characteristics.

|  |  |  |  |
| --- | --- | --- | --- |
| Nominal *v*D (V) | Diode Equation  *i*D (mA) | Measured  *v*D (V) | Measured  *i*D (mA) |
| 0 |  |  |  |
| 0.2 |  |  |  |
| 0.4 |  |  |  |
| 0.45 |  |  |  |
| 0.5 |  |  |  |
| 0.55 |  |  |  |
| 0.6 |  |  |  |
| 0.65 |  |  |  |
| 0.7 |  |  |  |

Step 5:

Table 2. Series diode circuit measurements and the CVD model data.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Prelab Calculations | | | Experimental | | |  |
| *V*S (V) | CVD Model  *v*D (V) | CVD Model  *v*R (V) | CVD Model  *i*D (mA) | Measured *v*D (V) | Calculated *v*R (V) | Measured *i*D (mA) | *i*D Percent Error  (Eq. 3) |
| 0.5 |  |  |  |  |  |  |  |
| 1 |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |
| -1.0 |  |  |  |  | Omit | 0 | Omit |
| -5.0 |  |  |  |  | Omit | 0 | Omit |

Step 6:

Table 3. Large signal diode circuit data.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Input Voltages | | | Prelab Calculations | | | | Experimental |
| *v*1 (V) | *v*2 (V) | *v*3 (V) | D1 Bias  (expected) | D2 Bias  (expected) | D3 Bias  (expected) | *v*o  Calculated | *v*o  Measured |
| 0 | 0 | 0 |  |  |  |  |  |
| -12 | 6 | 12 |  |  |  |  |  |
| 12 | 0 | 6 |  |  |  |  |  |
| 12 | 12 | 12 |  |  |  |  |  |
| -8 | 12 | 0 |  |  |  |  |  |