 **East West University**

**Lab Report**

**Semester:** Fall-2024

**Course Title:** Electronic Circuits

**Course Code:** CSE251 **Sec: 03**

**Experiment No:** 04

**Experiment Name:** Introduction to Transistor

**Group No:** 07

**Submitted by-**

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2022-3-60-109

**Submitted to-**

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**Date of Performance: 28th November 2024**

**Date of Submission: 6th December 2024**

**Objectives:**

1. Identify base, emitter and collector terminals and connections of NPN and PNP transistors.
2. Demonstrate and measure the effects on base current of forward and reverse bias in the emitter-base circuit.

**Experimental Data Sheet (1):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| 10 | 1 | 0.0123 | 9.368 | 0.919 | 0.0952 | 0.518 |
| 10 | 2 | 0.0205 | 9.275 | 1.881 | 0.0942 | 1.061 |
| 10 | 3 | 0.0275 | 9.26 | 2.852 | 0.0941 | 1.609 |
| 10 | 4 | 0.0337 | 9.222 | 3.889 | 0.0937 | 2.194 |
| 10 | 5 | 0.0386 | 9.206 | 4.848 | 0.0935 | 2.735 |
| 10 | 6 | 0.0433 | 9.192 | 5.855 | 0.0934 | 3.304 |
| 10 | 7 | 0.0477 | 9.182 | 6.863 | 0.0933 | 3.873 |
| 10 | 8 | 0.0517 | 9.173 | 7.856 | 0.0923 | 4.433 |
| 10 | 9 | 0.0555 | 9.164 | 8.871 | 0.0931 | 5.006 |
| 10 | 10 | 0.0596 | 9.151 | 9.954 | 0.0930 | 5.617 |

**Experimental Data Sheet (2):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| 1 | 10 | 8.315 | 0.351 | 1.422 | 3.572X | 0.0333 |
| 2 | 10 | 4.276 | 1.372 | 5.576 | 0.0139 | 3.1467 |
| 3 | 10 | 0.377 | 2.274 | 9.362 | 0.0231 | 5.2830 |
| 4 | 10 | 0.1112 | 3.277 | 9.660 | 0.0333 | 5.4514 |
| 5 | 10 | 0.0913 | 4.325 | 9.682 | 0.0439 | 5.4638 |
| 6 | 10 | 0.0803 | 5.332 | 9.684 | 0.0541 | 5.4650 |
| 7 | 10 | 0.0725 | 6.346 | 9.689 | 0.0644 | 5.4678 |
| 8 | 10 | 0.0669 | 7.312 | 9.691 | 0.0743 | 5.4689 |
| 9 | 10 | 0.0624 | 8.270 | 9.696 | 0.0840 | 5.4717 |
| 10 | 10 | 0.0582 | 9.300 | 9.701 | 0.0945 | 5.4746 |

**Ans to the Post-Lab Questions:**

From datasheet 1,

|  |  |
| --- | --- |
| IC | VCE |
| 0.518 | 0.0123 |
| 1.061 | 0.0205 |
| 1.609 | 0.0275 |
| 2.194 | 0.0337 |
| 2.735 | 0.0386 |
| 3.304 | 0.0433 |
| 3.873 | 0.0477 |
| 4.433 | 0.0517 |
| 5.006 | 0.0555 |
| 5.617 | 0.0596 |

**Discussion:**

A piece of paper with writing on it

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