**Ministerul Educației și Cercetării al Republicii Moldova**

**Universitatea Tehnică a Moldovei**

**Facultatea Calculatoare, Informatica și Microelectronica**



**Departamentul Ingineria Software** **și Automatica**

Raport

Lucrarea de laborator nr. 3

**Tema: „Studierea caracteristicilor şi a parametrilor diodelor semiconductoare”**

**Disciplina: Circuite și dispozitive electronice**

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| **A efectuat:** | Student grupa TI-231 FR | Apareci Aurica |
| **A verificat:** | Asistent universitar | Chiriac Maxim |

**Chișinău 2025**

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| 1. **Cadrul teoretic** | |
| **Tema:** Studierea caracteristicilor si a parametrilor diodelor semiconductoare  **Scopul lucrării:** In lucrare se face cunoștința cu principiile de funcționare, caracteristicile si parametrii diodelor redresoare, diodelor Zenner si ale diodelor luminiscente (LED).Se culeg datele si se construiesc caracteristicile voltamperice. Se determina parametrii fundamentali ai dispozitivelor respective. | |
| 1. **Schemele circuitelor studiate** | |
|  | |
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| 1. **Tabelele cu datele din experiment** | |
| **Tabelul 3.1**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Udir, V** | | **0** | **0.05** | **0.1** | **0.15** | **0.2** | **0.25** | **0.3** | **0.35** | **0.38** | **0.45** | | **Idir, mA** | **D1** | 0 | 0.032 | 0.0206 | 0.11 | 0.73 | 3.90 | 16.2 | 77.5 | 124.9 | - |   **Tabelul 3.2**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Udir, V** | | **0** | **0.1** | **0.3** | **0.5** | **0.6** | **0.65** | **0.7** | **0.75** | **0.8** | **0.85** | | **Idir, mA** | **D2** | 0 | 0 | 0.0013 | 0.08 | 0.64 | 1.82 | 4.64 | 10.60 | 20.6 | 36.6 | | **D3** | 0 | 0 | 0 | 0.0003 | 0.007 | 0.039 | 0.23 | 1.43 | 7.40 | 42 |   **Tabelul 3.3**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Udir, V** | | **0** | **0.5** | **1** | **1.1** | **1.2** | **1.3** | **1.4** | **1.5** | **1.6** | **1.7** | **1.8** | **1.9** | **2** | | **Idir, mA** | **D4** | **0** | **0** | **0** | **0** | **0** | **0.0001** | **0.0002** | **0.0013** | **0.0107** | **0.013** | **0.5** | **4.03** | **10.57** |   **Tabelul 3.4**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Uinv, V** | | **0** | **1** | **3** | **5** | **10** | **11** | **12** | **13** | **14** | **15** | | **Iinv, mA** | **D1** | 0.0005 | 0.001 | 0.002 | 0.0022 | 0.003 | 0.0031 | 0.0033 | 0.0034 | 0.0036 | 0.0037 | | **D2** | 0 | 0 | 0.0002 | 0.0004 | 0.0009 | 0.001 | 0.0011 | 0.0012 | 0.0013 | 0.0014 |   **Tabelul 3.5**   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **ID3, mA** | 0 | 0.0004 | 0.0008 | **1** | **2** | **5** | **10** | **15** | **20** | **25** | **30** | **35** | | **UD3, V** | **0** | **5** | **7** | 7.36 | 7.40 | 7.43 | 7.46 | 7.5 | 7.54 | 7.58 | 7.62 | 7.66 | | |
| 1. **Caracteristicile statice ale fiecărei diode** | |
|  | |
| 1. **Concluzii** | |
| In urma executării lucrării de laborator nr.3 făcând cunoștința cu principiile de funcționare, caracteristicile si parametrii diodelor redresoare, diodei Zenner si ale diodelor luminescente, apoi studiind schema electrica de pe macheta si cu aparatul de măsurat am ridicat ramura de polenizare si am construit graficele aflând tensiunea de prag a diodelor date. | |