
DIGITAL CURVE TRACER «ERBY-7107» FOR TESTING SEMICONDUCTOR TWO-POLES

The device is intended for testing, research of semiconductor two-poles: resistors, photoresistors, photodiodes, thermistors, varistors, nanofilms, etc. Under the control of the special computer program the device sets the parameters necessary for testing and measures the control parameters of the test sample.

For example, the following parameters are set:

- the voltage of the two-pole;
- the temperature of the two-pole;
- the illumination.

After establishing the temperature and illumination following parameters are measured:

- the current through the two-pole;
- the photocurrent of short-circuit;
- the photo-electromotive force.

The device automatically gets the characteristics of the two-pole (the number of measurements with the selected step of specified parameters: the voltage, the illumination, the temperature). Characteristics can be stored in files, printed or transmitted to the data processing programs.

The characteristics of the device:

- The supply current of the sample (of any polarity) is from 10 nA up to 200 mA.
- The voltage on the sample (of any polarity) is from 100 μ V to 5 V.
- The temperature of the holder is in the range of temperatures from 0 to +90 $^{\circ}$ C (or more, depending on the type of heater/cooler). Accuracy of maintenance of temperature is 0,1 $^{\circ}$ C, the stability is 0,01 $^{\circ}$ C.
- The rate of heating and cooling of the holder is 30 $^{\circ}$ C per minute, the time of stabilization of the temperature is about 3,5 minutes from the moment of turning on the micro-refrigerator Peltier current.
- The supply current (of any polarity) of the micro-refrigerator Peltier is from 0,1 to 3 A, voltage is up to 15 Volts.
- The range of illumination is 1:10000.
- The accuracy and stability of maintenance of the illumination is from 0,1% to 1%.
- The accuracy of specifying and measuring the voltage is from 0,1% to 1,3% of the measured value.
- The accuracy of measuring the current is from 0,3% to 3% of the measured value.

More information, photos, description: <http://erbysar.com/7107.htm>

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