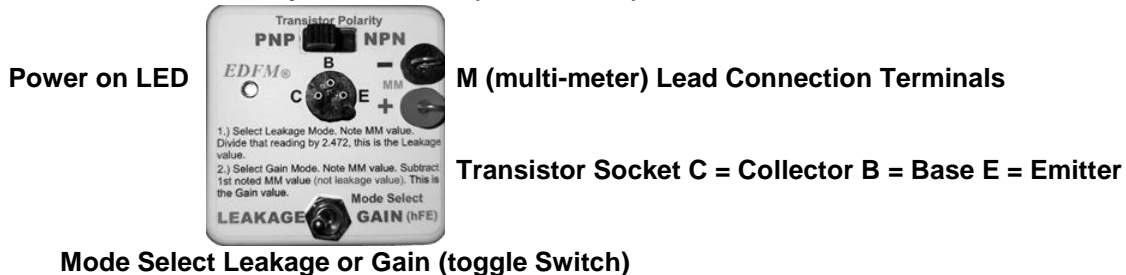




## Transistor Tester User Manual

EDFM's Transistor Tester is a budget friendly means to test transistors for their leakage and gain values. This unit was mainly design for germanium and other high leakage transistors but works with all junction transistors. This unit's design prevents the need to set up breadboard circuit for testing and can test both NPN and PNP transistors with just a flick of a switch also no need to move jumper wires or reverse meter leads to perform these test. Small footprint 2 1/8" W x 2" D x 1 3/4" H

Transistor Polarity PNP or NPN (slide switch)



**\*\*Unit must be powered by +9V DC, center tip negative 5.5 x 2.1mm only. If you have the ability to set your power source CC (Constant Current) set to about 500mA\*\***

### Testing a transistor:

- 1.) Turn off the tester unit by unplugging power supply.
- 2.) Place transistor into the transistor socket making sure all of the transistors leads correspond with the proper pins in the transistor socket.
- 3.) Select proper polarity for that transistor (PNP or NPN)
- 4.) Place Mode Select switch in Leakage mode.
- 5.) Connect multi-meter (MM) leads to the proper + and - terminals and place in DC voltage mode.
- 6.) Turn on power to unit
- 7.) Wait until the MM readings have stopped fluctuating. Write down the MM value, (you will need this value for the gain test later on). Now take that value and divide it by 2.472, this is the transistors leakage value.
- 8.) Now flip the Mode Select switch to the Gain. Again allow readings to stabilize and write down the reading. Now subtract the first MM value from step 7.) (**Not the leakage value**) from the MM Gain mode value. This is the transistors gain value.

Example: Let's say the transistor is a 2N1304 NPN Germanium.

Once the transistor is properly inserted into the socket we need to make sure the polarity switch is in the NPN position and the meter positive and negative leads are connected properly to their respective terminals.

Next place the Mode Select switch to Leakage. Turn on power to the unit. After the reading stabilizes we get a reading of 0.114 V, now divide this value by 2.472 and we get  $0.046 \times 100 = 4.6\mu\text{A}$  this is the leakage value.

Next flip the Mode Select switch to Gain, wait for readings on the MM stabilizes let's say it is 0.407. Now we need to subtract the first value we wrote down,  $0.407 - 0.114 = 0.293 \times 100 = 293$  this is this transistors Gain Value.

What the leakage values mean. 100uA is common, 200 happens pretty often. More than 300uA means the device is suspicious, and more than 500uA I would say is bad but not always, you should still test it in your circuit design.

The gains values mean. Values from 70 to about 130 range, people report the best sounds. Some people prefer equal gains; others prefer having a lower gain of 70-100 for the first transistor and 90 to 130 for the second. Now you have the tool to get these readings and decide for yourself which gains you prefer.