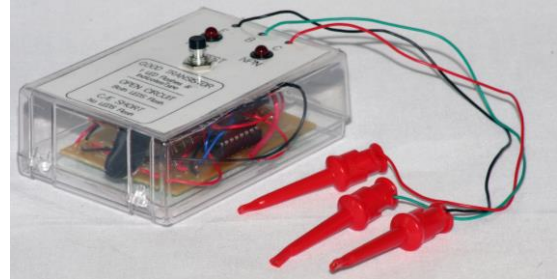




TRANSISTOR TESTER (Code: TRANT)

DESCRIPTION

This tool is used to detect a faulty transistor, within an assembled PCB. The testing can be carried out on the PCB's components, so that only the faulty transistor needs to be removed and replaced. The in-circuit *TRANSISTOR TESTER* PCB and components are small enough to fit into a small plastic case, making it very portable.



The *TRANSISTOR TESTER* described here will indicate whether a suspect transistor is good or faulty and, as a bonus, tell you the component's type (PNP or NPN).

LEVEL:

Intermediate

HOURS TO CONSTRUCT:

10 - 15 hours

SKILL DEVELOPMENT:

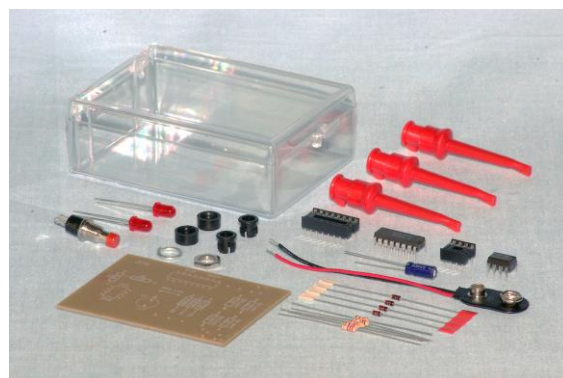
- Manufacturing / Assembly
- Soldering
- Basic Electric Circuits
- Electrical
- Record keeping
- Testing and Troubleshooting





WHAT'S IN THE KIT?

- ❑ All the electrical and electronic components required to make the *TRANSISTOR TESTER* work including the plastic case.
- ❑ A detailed teaching unit with a complete parts list, general construction guidelines and testing instructions.



WHAT ELSE IS NEEDED?

The following items are required in addition to the kit and must be supplied by the designer – some are available from Scorpio Technology, but need to be ordered separately:

ADDITIONAL REQUIREMENTS	ORDERING CODE
1 x 9V battery	BATT9
Multi strand hook-up wire in assorted colours	WIREHU10
Double-sided adhesive tape or Tape rectangles	TAPEDS/TAPEDS15x20x1

TOOLS REQUIRED

The following tools are required. Several are available from Scorpio Technology, and can be ordered separately if required:

REQUIRED TOOLS	ORDERING CODE
Assorted hand tools such as:	---
○ Ruler and pen / marker	---
○ Craft knife or scissors	CRKNF
○ Scriber – pen type	TD2120
Soldering Iron and Soldering iron stand: – a good quality soldering iron, with a fine tip or	SOLDIRN SOLDIRNSTD
Soldering station	SOLDSTN
Solder: – 0.71mm 60/40 solder is recommended	SOLD500
Wire strippers	WIRESTR
Side cutters	SIDECUT or SIDECUTMIN
Drill (either powered or a hand drill)	---
Drill bit 1.5mm	---
Drill bit 7.0mm	

USEFUL EQUIPMENT FOR ELECTRONICS / TESTING

These tools may be useful and are available from Scorpio Technology, but need to be ordered separately if required:

Component lead forming tool (for resistors, diodes etc.)	COMPLFT
PCB Holder	PCBHOLD
IC Inserter	ICINSERT



IC remover	ICEXTRACT
IC straightener	ICSTRAIT
Multimeter with probes	MULTIM / MULTIM1527
One of each transistor type - i.e. an NPN and a PNP	

ABOUT THE PROJECT

The major features of this project are the marking out, assembly and testing stages of making the *TRANSISTOR TESTER*.

MAKING / CONSTRUCTION

Once the students have familiarised themselves with the components and identified them, they can start the process of **making** the Tester. They will:

- ☐ Solder all the components to the PCB
- ☐ Prepare the lid and mount the LEDs
- ☐ Wire up and solder the test clips and LEDs to the PCB

TESTING / TROUBLESHOOTING

Once the Construction process has been completed, the students will need to test the assembled unit.

- ☐ Test the completed *TRANSISTOR TESTER*
- ☐ Troubleshoot any problems!

DOES THE TEACHING UNIT INCLUDE ANY THEORY?

The Teaching unit has a THEORY section that covers

- How The Circuit works

