

This is a very simple circuit that will allow you to test components using your oscilloscope I know this type of circuit is widely available online but I thought everyone here would like to at least review it if not get some serious use out of it. When complete you can test Capacitors, Transistors, Diodes, SCR's, and Resistors.

I made some changes to the basic design of this type of trace tester that allowed me to greatly expand on its use. R1 is now a variable resistor" 1K Pot "that lets you test a much wider voltage and current range. Please note I will do my best to describe how to build this circuit and how it works but please feel free to contact me if you have any questions.

Also while I am using a multi tap 6.1 Volt Center Tap transformer from Radio Shack you can use any AC transformer you wish but just be cautioned about the risks of higher voltages and currents. Also make sure you adjust the resistors accordingly I personally would not exceed 24 VAC.

While I have used a hobby box to try and keep the circuit clean use whatever you would like shielding is not an issue.

FYI, I have a Tektronics 2236 and a 3445 I was pulling my hair out trying to figure out how to engage the XY inputs properly to work with this design please note on most Dual, Quad channel oscilloscopes look on the SEC/DIV control knob and you will see on the bottom left very hard to see it will say XY move your selector to this setting it will cause you scope to display one single DOT in the middle of the screen this is perfectly normal and how it should be with the circuit turned off as soon as you turn the circuit on use your Volts/Div knobs to set the trace and you will see it grow. I am including some basic trace patterns so you can see what they should look like. As simple as this circuit is I find it to be indispensable on my work bench. Enjoy!

PARTS LIST OR "BOM" I will mark substitute where you can use whatever you like in place of my parts.

Quantity=1: 6.1 Volt AC center Tap Transformer .45 Amp I got mine at Radio shack Part#273-1365A

All resistors are ¼ watt unless noted you can always use a bigger watt rating but try to use the resistive values I list because I did my best to calibrate this circuit.

Quantity:= Resistors: Quantity=3 R1 is a 1K Pot ½ watt R2 is a 100 Ohm Brown/Black/Brown ¼ watt R3 is a 1K Red/Black/Brown ¼ watt.

Quantity 1: Pig-Tail Fuse plug with 2A buss fuse .. Radio Shack

Quantity 1: On/Off toggle switch 1/2A Radio Shack

Quantity 1: Green LED came with my Boe-Bot kit from Parallax use whatever you want

Quantity 2: BNC Oscilloscope connectors Again Radio Shack parts you do not have to use these but it makes the project look very nice.

Quantity 1: Radio Shack Hobby Box Project Enclosure Part# 270-1807

Quantity 1: Terminal connector block I had one in my junk parts use whatever you would like.

Quantity 1: Radio Shack Component PC Board Part# 276-168.

Misc Wire and Hot Glue, lol.

Of Course any Dual Channel or Quad Oscilloscope that will do X and Y I have not seen one that doesn't. Please note I only have Analog scopes I do not know if the new digital scopes you X and Y plotting I do not see why not I just don't know. I have a small hand held digital scope but it's only a single channel.

Without the Oscilloscope and scope probes the whole project cost me around \$20.00 dollars could be even cheaper to do if you leave out the fancy stuff.

I have successfully tested Diodes, Transistors, Capacitors, Resistors and more misc components including chokes. **WARNING DO NOT TEST COMPONENTS IN A LIVE CIRCUIT** you can do some in circuit testing with the power off but you will have to use your discretion I was able to test many components in a turned off circuit but some I could not Transistors seemed to work but capacitors was a crap shoot.

I am enclosing some pictures of my scope showing certain components being tested and have also included Four trace diagrams of the basic test components.

Figure (1)



