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## The Tektronix 1101 oscilloscope-probe power supply

When Tektronix created its line of powered FET oscilloscope probes, it needed a way to supply power to them. In 1969, the company developed the 1101 accessory power supply. The unit can power four probes. It supplies  $\pm 15V$ , 5V, and chassis common to the four front-panel connectors. The metal chassis connects to earth ground, as the law requires. This linear power supply has three TO-66 pass transistors. A switching supply would add noise to the probes it powers. The circuit has 10 single transistors and three matched transistor pairs. The circuit sequences the power and shuts down if any supply fails. The PCB (printed-circuit board) has neither pigtailed nor edge-card connectors, which tend to fail under vibration. Instead, Tek engineers designed a delicate and complex system of pins that engage sockets soldered into the PCB. Spring-loaded snaps in three places retain the circuit card. A screw in the fourth corner ensures a secure connection to chassis common. This approach is an expensive design expedient, but a simpler approach may have worked just as well.

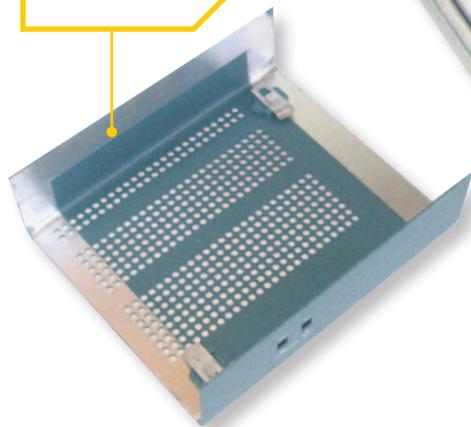


C41 is a 1000- $\mu F$  capacitor for the 15V supply. The case floats at a negative potential, so Tek engineers covered it with a plastic housing.

Switches on the side let you set the supply for 110 or 220V input power and the high and low line voltage.

The PCB pops out once you remove the grounding screw and push three plastic catches. Less attractive are the 22 delicate gold-plated pins that must align perfectly to engage sockets in the PCB.

The cover has no paint on the inside edges, but the oxidized aluminum will most likely not form a good RF connection to the case.



A Tek system-level designer realized that dangling power cords bedevil engineers, so he added this handy cord caddy to the bottom of the unit.

