

THERMIONIC TUBE, TRIODE - on base

Cat: EM4050-001 (with '6C4' triode tube)

DESCRIPTION:

- 1x Base with triode tube socket and terminals: PA4050-003
- 1x Triode tube type 6C4: PA4050-002

EM4050-001 triode (thermionic)



Physical size: 115x82x70mm LxWxH (incl.tube) **Weight:** 0.07 kg

The Triode tube includes a small heater that must be energised before the tube can operate. It heats the cathode so that electrons can escape the surface and be driven from the cathode to the anode. When running, the heater can be seen glowing red inside the tube.

A Triode is a three element tube, with an Anode, Cathode and a Grid and it is normally used as an Amplifier. A resistor is placed into the anode circuit to limit the current flow and a DC voltage is applied between the anode (outer metal area) and the cathode (inner heated section). The cathode is coated with a special material and when it is hot and when a voltage is placed between the cathode and the anode, electrons flow from the cathode to the anode causing a DC current to flow. When detected by an ammeter, the DC current appears to flow from the positive anode to the negative cathode, which is the opposite direction to the electron flow. This 'conventional current flow' is a phenomenon of electricity and can probably be discussed in class.

**OPERATION:**

Current cannot flow if the Grid is held at a negative potential to the cathode because the electrons are repelled from the grid back towards the cathode. As the Grid is raised in potential slightly higher than the Cathode, current begins to flow through the tube and through the load. A very small change in voltage on the Grid causes a large change in current flow from anode to Cathode. The Grid has a small potential applied and carries a very small current (a few microamps) but it is able to control much larger power passing through the tube. The effect when a very small change in applied energy can control a large amount of energy is called 'Amplification'

6C4 TRIODE TUBE DATA:

VOLTAGE: Anode (+) to Cathode (-), up to 250 Volts max. (100V typ.)

CURRENT FLOW: use load to limit to 12 milliamps max.

CATHODE HEATER: approx. 6.3V.AC. at 0.15 amps.

SOCKET: Standard 7 pin miniature valve base.

PINOOTS: Anode 1: pin#1 and #5 Grid: pin#6

Cathode: pin#7 Heater: pins #3 and #4

Designed and manufactured in Australia