

## 5551A – Ignitron



Ignitron is used as electronic switch for very high currents. It contains a pool of mercury floating inside the metal cylinder. A large refractory anode is connected to the upper terminal. A small tipped electrode, the igniter, is placed near the surface of mercury. Operation recalls that of thyratrons with the difference that, once fired, conduction is given by mercury plasma. Firing is originated in a conductive mercury puff generated by a short pulse on the igniter. Conduction ceases upon polarity reversal.

Ignitrons safely withstand heavy overloads and high voltage transients. For this reasons they are preferred still today over solid-state switches in many industrial applications.

The 5551A in the above photos is an industry standard. It is rated for 40 A max average, but can withstand 700 A peak and up to 8000 A for 0.15 seconds in case of faults. Peak anode voltage up to 1500 V can be handled. Igniter requires 200 V peak pulses at 30 A for 100 microseconds to fire. Water cooling is required.

5551 was first registered to General Electric in September 1946, release [524](#). improved version 5551A was registered to Westinghouse, release [1273](#).

