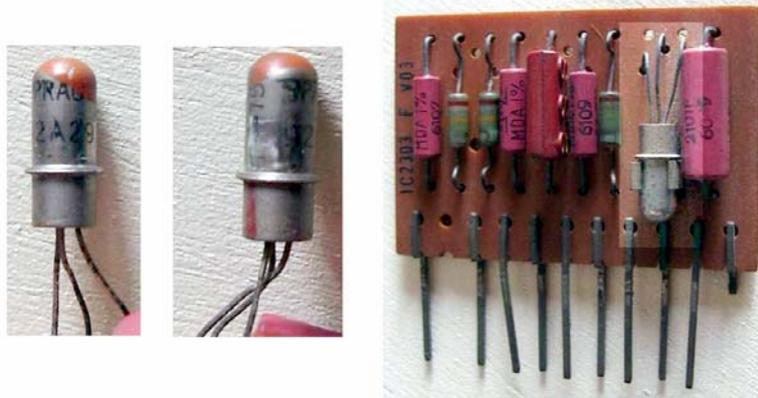
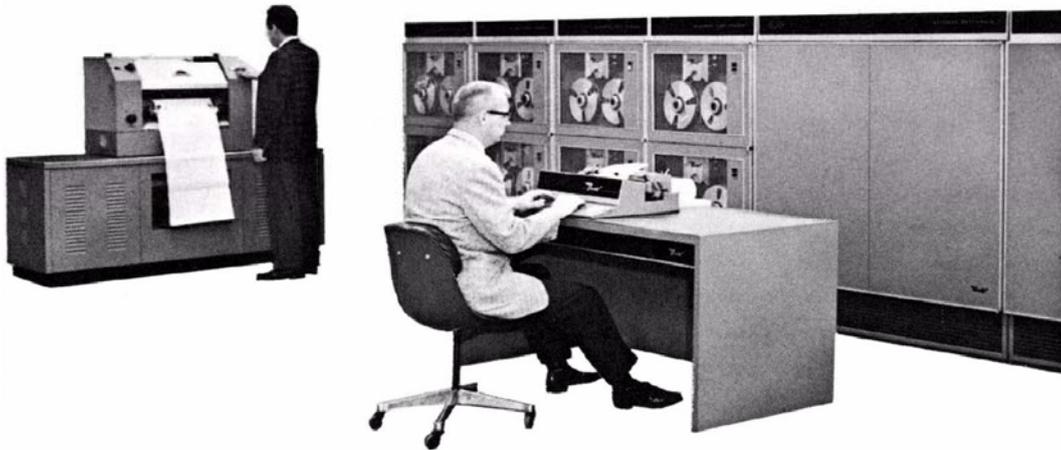


## 92A29 / 2N501A - Micro Alloy Diffused Transistor



Actually 92A29 was a germanium transistor, not a tube. It was the Sprague proprietary code for the registered type 2N501A. It is listed in this catalog with the small PCB module beside because it is probably the only relic of the CDC G-20, the very early mainframe computer of the Polytechnic of Naples in the second half of the sixties.



- View of a typical configuration of the CDC / Bendix G20 computer, with a line printer on the left, likely the 1200 lpm(\*) type, eight magnetic tape units and the control console. The CPU is the twin rack cabinet just aside the tape units. Click on image to enlarge.

The G-20 computer was a Bendix design for scientific applications. Bendix sold the division to Control Data Corporation. As Director of the 'Centro di Calcolo' of the Naples Polytechnic, the late Professor Bruno Fadini bought the G-20 when its production was phasing out. The internal logic of the mainframe was entirely based upon two types of boards, the two input gate in the picture above and a diode input expander. Two of the above boards were needed for even a simple R-S flip-flop. Hundreds and hundreds of boards were mounted in each rack unit, on printed circuit backplanes with supply buses. Logic connections among modules were made by means of wrapped wires on the back side of the backplanes.

When replacement parts became unavailable from the manufacturer, still student I was asked to build some hundreds boards for the computer maintenance. I got the module above from Professor Fadini around 1969, as sample to build replacement boards. By the way, I also serviced the impressive 1200 lpm\* impact line printer, returning it to life, and designed a modem interface to establish the early connection of the G20 to an IBM at Bologna.

All the transistors used in the logic boards were Philco 2N501A. Both [2N501](#) and [2N501A](#) were PNP switching transistors registered in April 1959 to Lansdale Tube Company, Division of Philco Corporation. Datasheets can be accessed by clicking on their codes. Both were Micro Alloy Diffused-base Transistors or MADT, a highly innovative process developed in the second half of the 1950s, capable of operation in the VHF region. Both were proposed as switching transistors, rated for very high switching speeds, in the order of 20 ns. 2N501A was similar to 2N501, selected for lower collector cutoff current.

Since 1957 Sprague had started licensed productions of the Philco transistor line. 92A29 was the Sprague proprietary code for the 2N501A.

\* lpm stays for 'lines per minute', each line containing 132 characters printed in a single stroke.