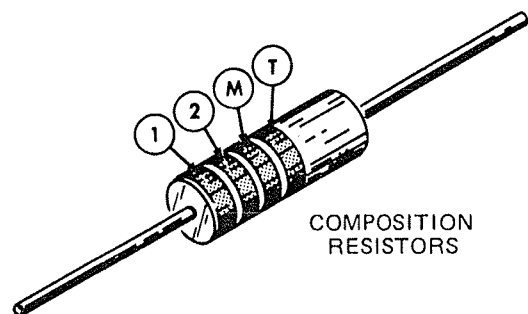
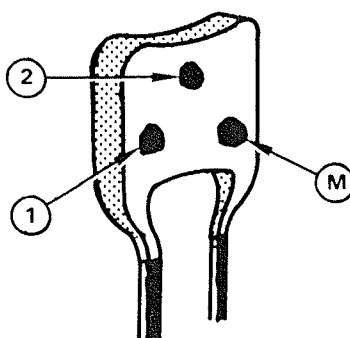


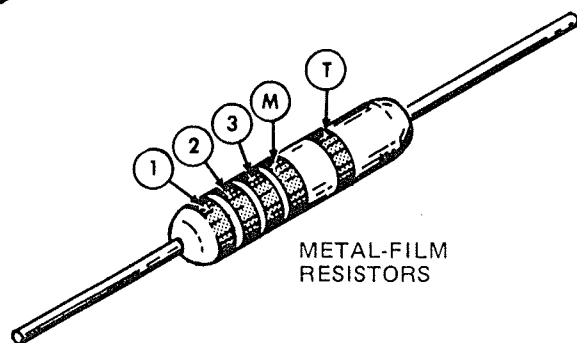
COLOR CODE



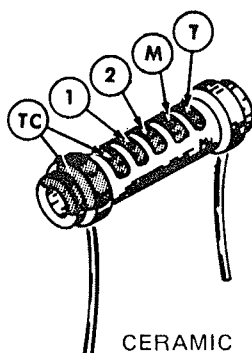
COMPOSITION RESISTORS



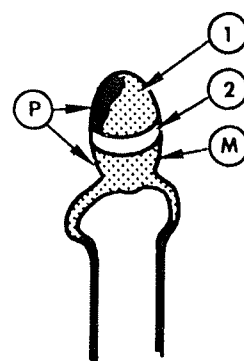
SMALL DISC CAPACITORS



METAL-FILM RESISTORS



CERAMIC CAPACITORS



DIPPED TANTALUM ELECTROLYTICS

① ② and ③ — 1st, 2nd, and 3rd significant figures

Ⓜ —multiplier Ⓣ —tolerance

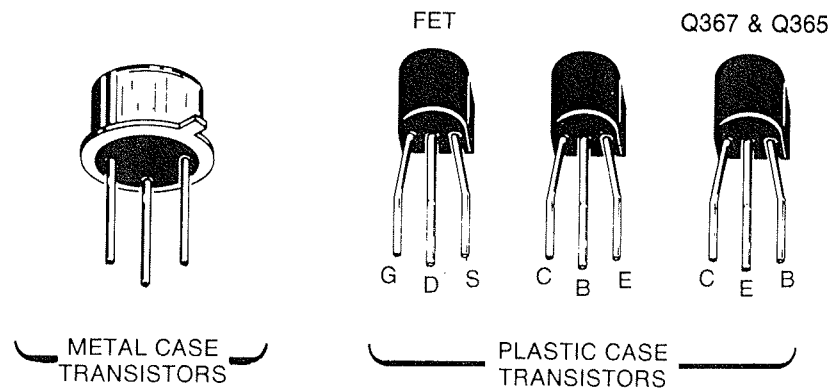
ⓉⓈ —temperature coefficient

Ⓟ —polarity and voltage rating

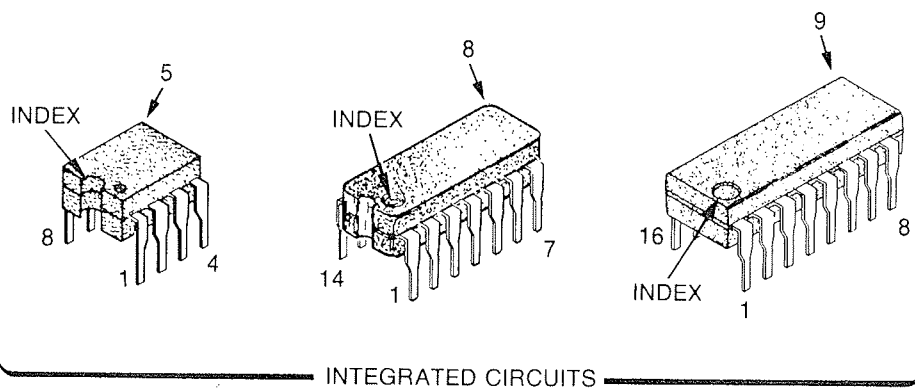
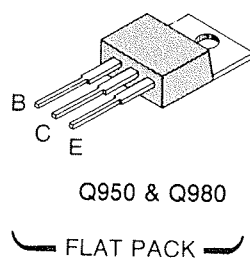
Ⓣ and/or ⓉⓈ color code may not be present on some capacitors

COLOR	SIGNIFICANT FIGURES	RESISTORS		CAPACITORS			DIPPED TANTALUM VOLTAGE RATING
		MULTIPLIER	TOLERANCE	MULTIPLIER	TOLERANCE		
					over 10 pF	under 10 pF	
BLACK	0	1	---	1	±20%	±2 pF	4 VDC
BROWN	1	10	±1%	10	±1%	±0.1 pF	6 VDC
RED	2	10 ² or 100	±2%	10 ² or 100	±2%	---	10 VDC
ORANGE	3	10 ³ or 1 K	±3%	10 ³ or 1000	±3%	---	15 VDC
YELLOW	4	10 ⁴ or 10 K	±4%	10 ⁴ or 10,000	+100% -9%	---	20 VDC
GREEN	5	10 ⁵ or 100 K	±½%	10 ⁵ or 100,000	±5%	±0.5 pF	25 VDC
BLUE	6	10 ⁶ or 1 M	±¼%	10 ⁶ or 1,000,000	---	---	35 VDC
VIOLET	7	----	±1/10%	----	---	---	50 VDC
GRAY	8	----	----	10 ⁻² or 0.01	+80% -20%	±0.25 pF	----
WHITE	9	----	----	10 ⁻¹ or 0.1	±10%	±1 pF	3 VDC
GOLD	—	10 ⁻¹ or 0.1	±5%	----	----	----	----
SILVER	—	10 ⁻² or 0.01	±10%	----	----	----	----
NONE	—	----	±20%	----	±10%	±1 pF	----

Figure 9-1. Color codes for resistors and capacitors.



TRANSISTOR



LEAD CONFIGURATIONS AND CASE STYLES ARE TYPICAL, BUT MAY VARY DUE TO VENDOR CHANGES OR INSTRUMENT MODIFICATIONS.

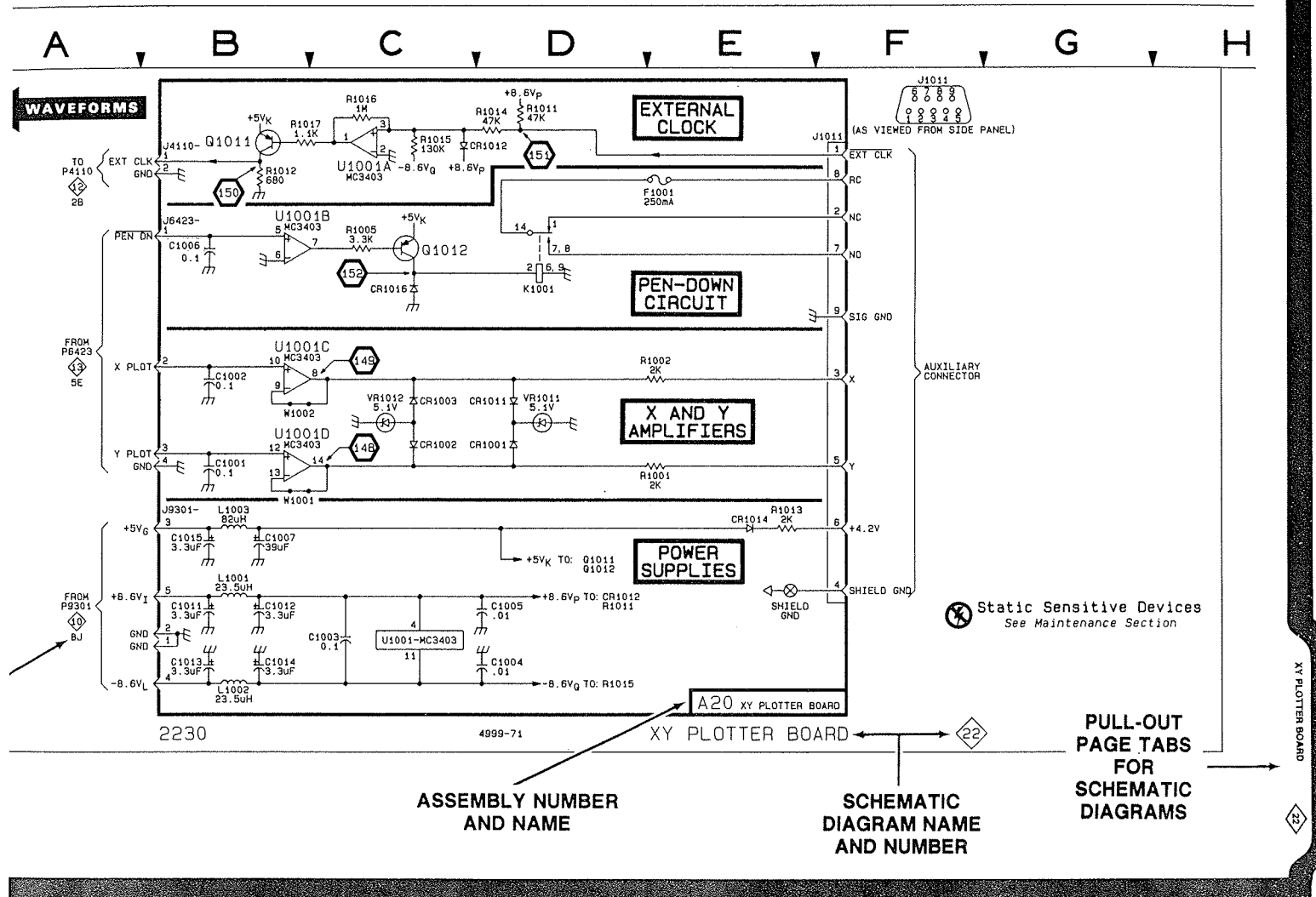
Figure 9.2 Semiconductor lead configurations.

gram.

to the Schematic Diagram numbers are printed on the front side of the component.

Component Location lookup table
The CIRCUIT NUMBER column of the component you are looking for

- In the SCHEM LOCATION column next to the component, read the grid coordinates of the component in the schematic.
- Using the grid coordinates given, find the component in the schematic diagram.



to the circuit

circuit board
circuit board

rmine the Circuit Number and Schematic Diagram.

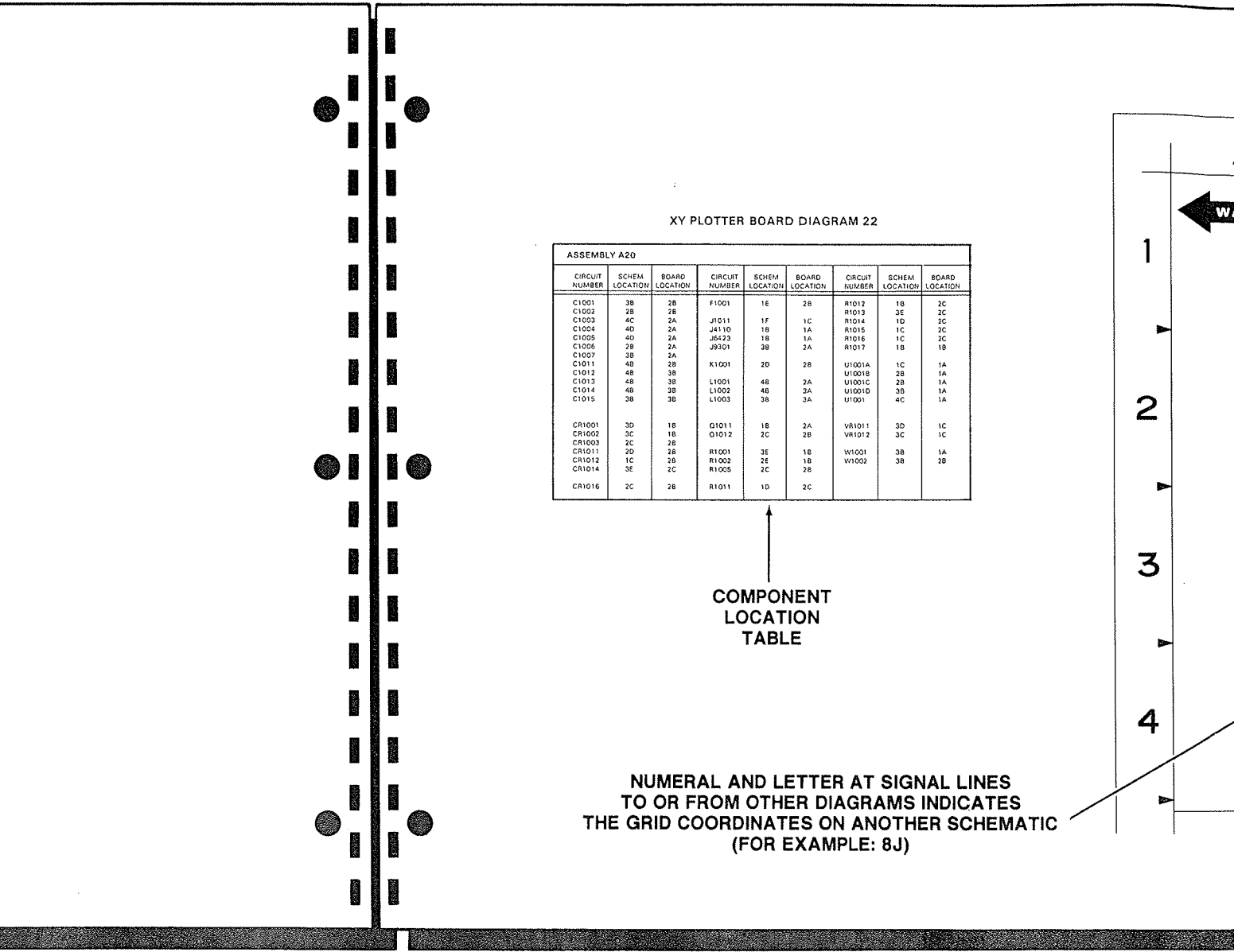
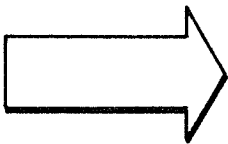
Compare the circuit board with its illustration. Locate the component you are looking for by area and shape on the illustration to determine its Circuit Number.

Scan the lookup table next to the Circuit Board illustration to find the Circuit Number of the component.

Read the SCHEM NUMBER column next to the component's circuit number to find the Schematic Diagram number.

3. Locate the Component on the Schematic Diagram

- a. Locate the tabbed page that corresponds to the component number. Schematic diagram numbers and names of the tabs (facing the front of the manual).
- b. Locate the Assembly Number in the Component Location Table next to the schematic diagram. Scan the Component Location Table to find the Circuit Number of the component in the schematic.



te the Component on the Circuit Board.

In the manual, locate the tabbed page that corresponds to Assembly Number the component is on. Assembly numbers and names for circuit boards are on the back side of the tabs.

Using the Circuit Number of the component and its given grid location, find the component in the Circuit Board illustration.

- c. From the small circuit board location illustration shown next to the circuit board, find the circuit board's location in the instrument.
- d. Find the circuit board in the instrument. Compare it with the circuit board illustration in the manual to locate the component on the circuit board itself.

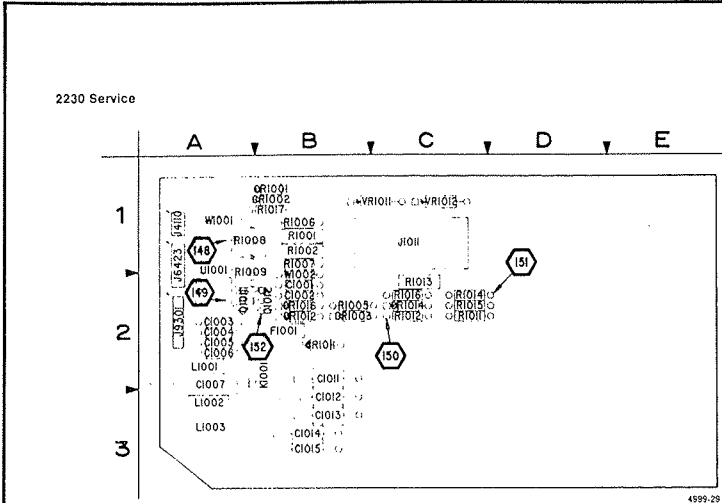
Figure 9-3. Locating components on schematic diagrams and circuit board illustrations.

1. Locate the Circuit Board Illustration.

Identify any component mounted on circuit board and to locate that component in the schematic diagram.

- a. Identify the Assembly Number of the circuit board that the component is on by using the Circuit Board location illustration in this section or the mechanical parts exploded views at the rear of this manual.
- b. In the manual, locate the tabbed foldout page that corresponds with the Assembly Number of the circuit board. The circuit board assembly numbers and names are printed on the back side of the tabs (facing the rear of the manual).

PULL-OUT PAGE TABS FOR CIRCUIT BOARD ILLUSTRATION



DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI Y32.14-1973 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it is in the low state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

Y14.15, 1966 Drafting Practices.
Y14.2, 1973 Line Conventions and Lettering.
Y10.5, 1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standard Institute
1430 Broadway
New York, New York 10018

Component Values

Electrical components shown on the diagrams are in the following units unless noted otherwise:

Capacitors = Values one or greater are in picofarads (pF).
Values less than one are in microfarads (μ F).

Resistors = Ohms (Ω).

The information and special symbols below may appear in this manual.

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number *(see following illustration for constructing a component number).

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.

