


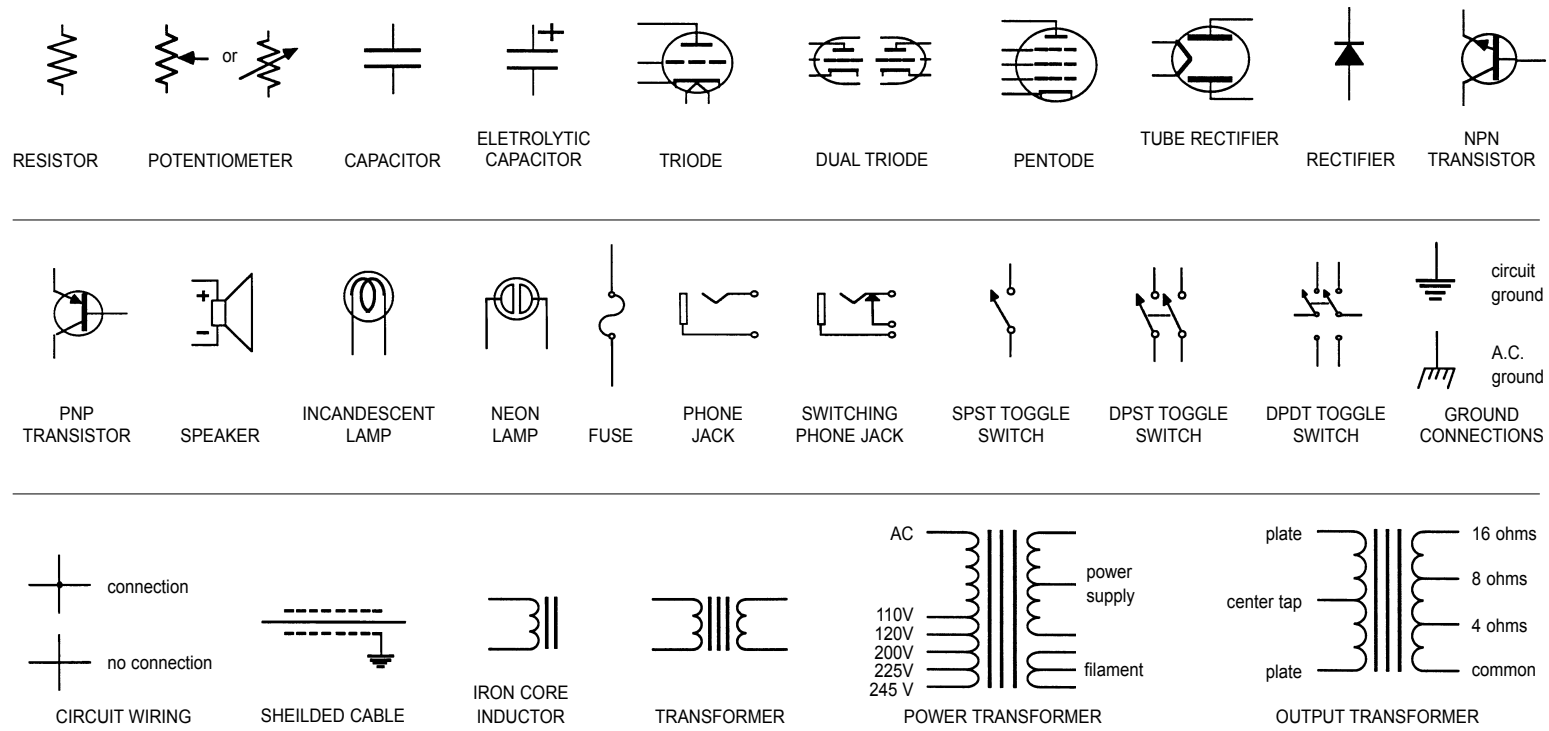
- ▶ **This File contains information on reading schematics**
- ▶ **To use this file click on the Show/Hide Navigation Pane  (on the menu bar), and then click the Bookmarks tab**
- ▶ **or ... Choose Window > Show Bookmarks**
- ▶ **Click the bookmark for the manufacturer whose schematics you wish to view**
- ▶ **If the entry has a triangle to the left, click on the triangle to view sub-entries**

Reading Schematics

REPRINTED WITH PERMISSION FROM TOM MITCHELI'S EXCELLENT BOOK "HOW TO SERVICE YOUR OWN TUBE AMP."

Reading schematic diagrams is really no big deal. The hardest part is remembering what each of the symbols means. Once you are comfortable with recognizing the symbols, a schematic diagram becomes nothing more than an electronic roadmap, or a sort of technical shorthand. Of course, as with all new things, you become more proficient by practicing. If you do not know how to read a schematic diagram, it will not impeded your ability to troubleshoot. However, if you do know how, you will find troubleshooting to be a little easier.

This chapter includes a reference table of the most common parts used in amplifier circuits. Next to each schematic symbol is a sketch of the component itself. This reference table should prove helpful in your attempts to interpret schematic diagrams. It is beyond the scope of this book to teach schematic reading. To do so would require a course in basic electronics, including hands-on lab experiments. I advise that you go to a junior college book store and buy a textbook on "Introduction to AC and DC circuits" or a similar title along those lines. In fact, I have seen good introductory electronics books in stores like Waldenbooks and B. Dalton. This type of book will build on what you have learned here. If you are interested in taking electronics seriously, it will be \$15 well spent.



Resistor Colors

READING RESISTOR COLOR CODE

RESISTORS HAVE COLOR BANDS ON THEM THAT TELL HOW MUCH RESISTANCE THEY HAVE. THE COLOR BAND THAT CORRESPONDS TO THE FIRST DIGIT IS THE ONE THAT IS CLOSEST TO ONE END OF THE RESISTOR. THIS NUMBER COMBINED WITH THE SECOND NUMBER ARE MULTIPLIED BY THE NUMBER IMPLIED BY THE THIRD BAND.

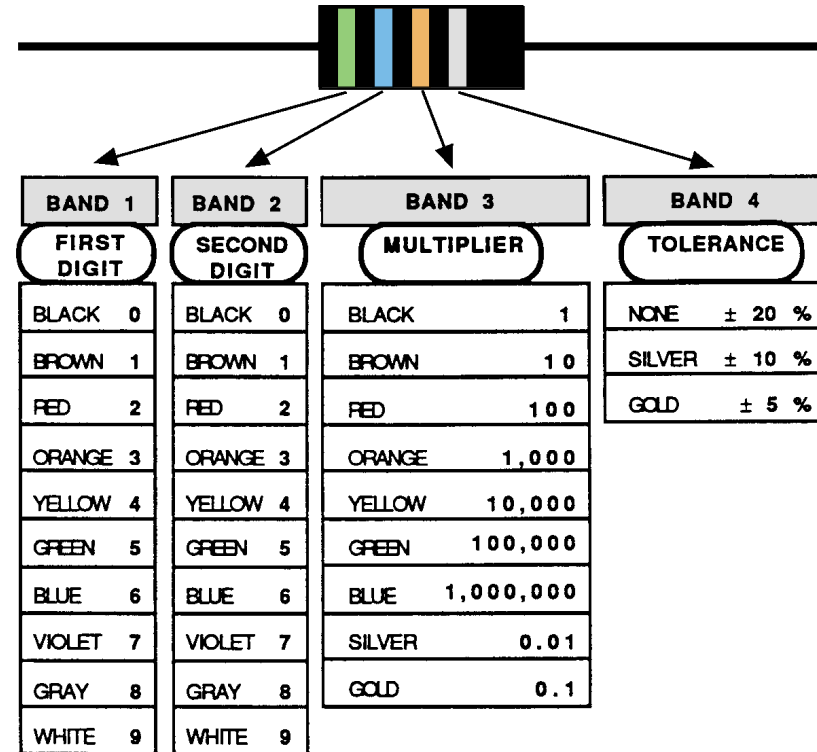
BELOW IS A LIST OF SOME OF THE MOST COMMON RESISTOR VALUES FOUND IN AMPLIFIER CIRCUITS, AND THEIR COLOR CODES.

RESISTANCE

100 OHMS/10%
 470 OHMS/10%
 820 OHMS/10%
 1 K OHMS/10%
 1.5 K OHMS/10%
 2.7 K OHMS/10%
 4.7 K OHMS/10%
 5.6 K OHMS/10%
 6.8 K OHMS/10%
 10 K OHMS/10%
 15 K OHMS/10%
 47K OHMS/10%
 56 K OHMS/10%
 82 K OHMS/10%
 100K OHMS/10%
 220 K OHMS/10%
 470 K OHMS/10%
 1 MEG OHMS/10%

COLOR CODE

BROWN-BLACK-BROWN-SILVER
 YELLOW-VIOLET-BROWN-SILVER
 GRAY-RED-BROWN-SILVER
 BROWN-BLACK-RED-SILVER
 BROWN-GREEN-RED-SILVER
 RED-VIOLET-RED-SILVER
 YELLOW-VIOLET-RED-SILVER
 GREEN-BLUE-RED-SILVER
 BLUE-GRAY-RED-SILVER
 BROWN-BLACK-ORANGE-SILVER
 BROWN-GREEN-ORANGE-SILVER
 YELLOW-VIOLET-ORANGE-SILVER
 GREEN-BLUE-ORANGE-SILVER
 GRAY-RED-ORANGE-SILVER
 BROWN-BLACK-YELLOW-SILVER
 RED-RED-YELLOW-SILVER
 YELLOW-VIOLET-YELLOW-SILVER
 BROWN-BLACK-GREEN-SILVER



PHYSICAL SIZE	POWER	LENGTH
	1/8 WATT	1/4 INCH
	1/2 WATT	3/8 INCH
	1 WATT	9/16 INCH
	2 WATT	11/16 INCH