



Old habits die hard with engineers. Many still hand draw circuits using the old symbol for a resistor – a sawtooth line like this:



# Standard Symbols

Circuit diagrams are the drawings used to show how components are connected together in an electrical or electronic circuit. For standardization, symbols are used to represent the components. This means that it should be possible to read and understand a circuit diagram created anywhere in the world.

## Common standard component symbols

The following are some of the more common standard symbols used in electrical and electronic circuit diagrams that you need to become familiar with. Many of these will be covered in more detail as you work through this book.

Symbol	Meaning	Symbol	Meaning
	Cell		Wiring Connections
	Battery		Earth/Ground
	Battery (alternative)		Fuse
	Resistor		Voltmeter
	Variable Resistor		Ammeter
	Capacitor		Diode
	Capacitor (polarized)		Zener Diode
	Variable Capacitor		Light Emitting Diode
	Switch		NPN Transistor
	Lamp		PNP Transistor
	Inductor		Transformer

The above table only shows a selection of basic symbols; they may vary slightly depending on the actual component or by country. However, it is usually possible to easily interpret these variations.



Although we have standard symbols, you will often see “deviations” from these standards. For example, you may come across a diode drawn with a white body, not black, and the center wire going right through it. Don’t be confused – the symbol will be close enough to the standard symbol for you to recognize which component it represents.