

# Passive Components Available in Laboratory

ECE 327: *Electronic Devices and Circuits Laboratory I*

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## Resistors

Resistor	Color Code
1 $\Omega$	brown-black or 1R0
4.7 $\Omega$	yellow-violet-gold or 4R7
10 $\Omega$	brown-black-black or 10R0
12 $\Omega$	brown-red-black or 12R0
15 $\Omega$	brown-green-black or 15R0
18 $\Omega$	brown-gray-black or 18R0
22 $\Omega$	red-red-black or 22R0
27 $\Omega$	red-violet-black or 27R0
33 $\Omega$	orange-orange-black or 33R0
39 $\Omega$	orange-white-black or 39R0
47 $\Omega$	yellow-violet-black or 47R0
56 $\Omega$	green-blue-black or 56R0
68 $\Omega$	blue-gray-black or 68R0
82 $\Omega$	gray-red-black or 82R0
100 $\Omega$	brown-black-brown
120 $\Omega$	brown-red-brown
150 $\Omega$	brown-green-brown
180 $\Omega$	brown-gray-brown
220 $\Omega$	red-red-brown
270 $\Omega$	red-violet-brown
330 $\Omega$	orange-orange-brown
390 $\Omega$	orange-white-brown
470 $\Omega$	yellow-violet-brown
560 $\Omega$	green-blue-brown
680 $\Omega$	blue-gray-brown
820 $\Omega$	gray-red-brown
1 k $\Omega$	brown-black-red
1.2 k $\Omega$	brown-red-red
1.5 k $\Omega$	brown-green-red
1.8 k $\Omega$	brown-gray-red
2.2 k $\Omega$	red-red-red
2.7 k $\Omega$	red-violet-red
3.3 k $\Omega$	orange-orange-red
3.9 k $\Omega$	orange-white-red
4.7 k $\Omega$	yellow-violet-red
5.6 k $\Omega$	green-blue-red
6.8 k $\Omega$	blue-gray-red
8.2 k $\Omega$	gray-red-red

Resistor	Color Code
10 k $\Omega$	brown-black-orange
15 k $\Omega$	brown-green-orange
18 k $\Omega$	brown-gray-orange
22 k $\Omega$	red-red-orange
27 k $\Omega$	red-violet-orange
33 k $\Omega$	orange-orange-orange
39 k $\Omega$	orange-white-orange
47 k $\Omega$	yellow-violet-orange
56 k $\Omega$	green-blue-orange
68 k $\Omega$	blue-gray-orange
82 k $\Omega$	gray-red-orange
100 k $\Omega$	brown-black-yellow
120 k $\Omega$	brown-red-yellow
150 k $\Omega$	brown-green-yellow
180 k $\Omega$	brown-gray-yellow
220 k $\Omega$	red-red-yellow
270 k $\Omega$	red-violet-yellow
330 k $\Omega$	orange-orange-yellow
390 k $\Omega$	orange-white-yellow
470 k $\Omega$	yellow-violet-yellow
560 k $\Omega$	green-blue-yellow
680 k $\Omega$	blue-gray-yellow
820 k $\Omega$	gray-red-yellow
1 M $\Omega$	brown-black-green
1.2 M $\Omega$	brown-red-green
1.5 M $\Omega$	brown-green-green
1.8 M $\Omega$	brown-gray-green

## Capacitors

Capacitor code conventions are a bit of a mess. Start by assuming all letters are *tolerances*. Then use the numbers in resistor-code style to indicate capacitance in pF. Use a DMM that can measure capacitance (or use an oscilloscope and function generator to measure rise time yourself) to be sure.

Capacitor	Code(s)
1 pF	1 or 1p
7 pF	7 or 7p
10 pF	10 or 10p
15 pF	15 or 15p
47 pF	47 or 47p
68 pF	68 or 68p
100 pF	101 or 100 or 100p
120 pF	121 or 120 or 120p
150 pF	151 or 150 or 150p
200 pF	201 or 200 or 200p
220 pF	221 or 220 or 220p
560 pF	561 or 560 or 560p
1 nF	102 or 1n or 0.001MF
2.2 nF	222 or 2n2 or 0.0022MF
3.3 nF	332 or 3n3 or 0.0033MF
4.7 nF	472 or 4n7 or 0.0047MF
10 nF	103 or 10n or 0.010MF
22 nF	223 or 22n or 0.022MF
33 nF	333 or 33n or 0.033MF
47 nF	473 or 47n or 0.047MF
100 nF	104 or 100n or 0.10MF
220 nF	224 or 220n or 0.22MF
470 nF	474 or 470n or 0.47MF

Capacitor	Code(s)
1 $\mu$ F	105 or 1MF
3 $\mu$ F	305 or 3MF
3.3 $\mu$ F	335 or 3.3MF
4.7 $\mu$ F	475 or 4.7MF
5 $\mu$ F	505 or 5MF
10 $\mu$ F	106 or 10MF
20 $\mu$ F	206 or 20MF
22 $\mu$ F	226 or 22MF
25 $\mu$ F	256 or 25MF
47 $\mu$ F	476 or 47MF
100 $\mu$ F	107 or 100MF
120 $\mu$ F	127 or 120MF
150 $\mu$ F	157 or 150MF
220 $\mu$ F	227 or 220MF
470 $\mu$ F	477 or 470MF
2200 $\mu$ F	228 or 2200MF
4700 $\mu$ F	478 or 4700MF