# Appendix 2-1

# Typical Standard Resistor Values

| 10% Tolerance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ω | Ω | Ω | kΩ | kΩ | kΩ | MΩ | MΩ |
| — | 10 | 100 | 1 | 10 | 100 | 1 | 10 |
| — | 12 | 120 | 1.2 | 12 | 120 | 1.2 | 12 |
| — | 15 | 150 | 1.5 | 15 | 150 | 1.5 | 15 |
| — | 18 | 180 | 1.8 | 18 | 180 | 1.8 | 18 |
| — | 22 | 220 | 2.2 | 22 | 220 | 2.2 | 22 |
| 2.7 | 27 | 270 | 2.7 | 27 | 270 | 2.7 | — |
| 3.3 | 33 | 330 | 3.3 | 33 | 330 | 3.3 | — |
| 3.9 | 39 | 390 | 3.9 | 39 | 390 | 3.9 | — |
| 4.7 | 47 | 470 | 4.7 | 47 | 470 | 4.7 | — |
| 5.6 | 56 | 560 | 5.6 | 56 | 560 | 5.6 | — |
| 6.8 | 68 | 680 | 6.8 | 68 | 680 | 6.8 | — |
| 8.2 | 82 | 820 | 8.2 | 82 | 820 | 8.2 | — |

| 1% Tolerance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Basic values above 10 ohms may be multiplied by any power of 10 e.g. x1, x10, x100, etc. | | | | | | | |
| 1.00 | 6.04 | 11.0 | 20.0 | 36.5 | 66.5 | 121 | 221 |
| 1.10 | 6.19 | 11.3 | 20.5 | 37.4 | 68.1 | 124 | 226 |
| 1.21 | 6.34 | 11.5 | 21.0 | 38.3 | 69.8 | 127 | 232 |
| 1.30 | 6.49 | 11.8 | 21.5 | 39.2 | 71.5 | 130 | 237 |
| 1.50 | 6.65 | 12.1 | 22.1 | 40.2 | 73.2 | 133 | 243 |
| 1.62 | 6.81 | 12.4 | 22.6 | 41.2 | 75.0 | 137 | 249 |
| 1.82 | 6.98 | 12.7 | 23.2 | 42.2 | 76.8 | 140 | 255 |
| 2.00 | 7.15 | 13.0 | 23.7 | 43.2 | 78.7 | 143 | 261 |
| 2.21 | 7.32 | 13.3 | 24.3 | 44.2 | 80.6 | 147 | 267 |
| 2.43 | 7.50 | 13.7 | 24.9 | 45.3 | 82.5 | 150 | 274 |
| 2.67 | 7.68 | 14.0 | 25.5 | 46.4 | 84.5 | 154 | 280 |
| 3.01 | 7.87 | 14.3 | 26.1 | 47.5 | 86.6 | 158 | 287 |
| 3.32 | 8.06 | 14.7 | 26.7 | 48.7 | 88.7 | 162 | 294 |
| 3.57 | 8.25 | 15.0 | 27.4 | 49.9 | 90.9 | 165 | 301 |
| 3.92 | 8.45 | 15.4 | 28.0 | 51.1 | 93.1 | 169 | 309 |
| 4.32 | 8.66 | 15.8 | 28.7 | 52.3 | 95.3 | 174 | 316 |
| 4.75 | 8.87 | 16.2 | 29.4 | 53.6 | 97.6 | 178 | 324 |
| 4.99 | 9.09 | 16.5 | 30.1 | 54.9 | 100 | 182 | 332 |
| 5.11 | 9.31 | 16.9 | 30.9 | 56.2 | 102 | 187 | 340 |
| 5.23 | 9.53 | 17.4 | 31.6 | 57.6 | 105 | 191 | 348 |
| 5.36 | 9.76 | 17.8 | 32.4 | 59.0 | 107 | 196 | 357 |
| 5.49 | 10.0 | 18.2 | 33.2 | 60.4 | 110 | 200 | 365 |
| 5.62 | 10.2 | 18.7 | 34.0 | 61.9 | 113 | 205 | 374 |
| 5.76 | 10.5 | 19.1 | 34.8 | 63.4 | 115 | 210 | 383 |
| 5.90 | 10.7 | 19.6 | 35.7 | 64.9 | 118 | 215 | 392 |

5% Tolerance

| Ω | Ω | Ω | kΩ | kΩ | kΩ | MΩ | MΩ |
|---|---|---|---|---|---|---|---|
| | 10 | 100 | 1 | 10 | 10 | 1 | 10 |
| | 11 | 110 | 1.1 | 11 | 110 | 1.1 | 11 |
| | 12 | 120 | 1.2 | 12 | 120 | 1.2 | 12 |
| | 13 | 130 | 1.3 | 13 | 130 | 1.3 | 13 |
| | 15 | 150 | 1.5 | 15 | 150 | 1.5 | 15 |
| | 16 | 160 | 1.6 | 16 | 160 | 1.6 | 16 |
| | 18 | 180 | 1.8 | 18 | 180 | 1.8 | 18 |
| | 20 | 200 | 2 | 20 | 200 | 2 | 20 |
| | 22 | 220 | 2.2 | 22 | 220 | 2.2 | 22 |
| | 24 | 240 | 2.4 | 24 | 240 | 2.4 | |
| 2.7 | 27 | 270 | 2.7 | 27 | 270 | 2.7 | |
| 3 | 30 | 300 | 3 | 30 | 300 | 3 | |
| 3.3 | 33 | 330 | 3.3 | 33 | 330 | 3.3 | |
| 3.6 | 36 | 360 | 3.6 | 36 | 360 | 3.6 | |
| 3.9 | 39 | 390 | 3.9 | 39 | 390 | 3.9 | |
| 4.3 | 43 | 430 | 4.3 | 43 | 430 | 4.3 | |
| 4.7 | 47 | 470 | 4.7 | 47 | 470 | 4.7 | |
| 5.1 | 51 | 510 | 5.1 | 51 | 510 | 5.1 | |
| 5.6 | 56 | 560 | 5.6 | 56 | 560 | 5.6 | |
| 6.2 | 62 | 620 | 6.2 | 62 | 620 | 6.2 | |
| 6.8 | 68 | 680 | 6.8 | 68 | 680 | 6.8 | |
| 7.5 | 75 | 750 | 7.5 | 75 | 750 | 7.5 | |
| 8.2 | 82 | 820 | 8.2 | 82 | 820 | 8.2 | |
| 9.1 | 91 | 910 | 9.1 | 91 | 910 | 9.1 | |

Potentiometers

| Ω | Ω | kΩ | kΩ | kΩ | MΩ |
|---|---|---|---|---|---|
| 10 | 100 | 1 | 10 | 100 | 1 |
| 20 | 200 | 2 | 20 | 200 | 2 |
| | | | 25 | 250 | |
| 50 | 500 | 5 | 50 | 500 | |
| | | | | 750 | |

## Appendix 2-2

# Typical Standard Capacitor Values

| pF | pF | pF | pF | μF | μF | μF | μF | μF | μF | μF |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 50 | 500 | 5000 | | 0.05 | 0.5 | 5 | 50 | 500 | 5000 |
| — | 51 | 510 | 5100 | | — | — | — | — | — | — |
| — | 56 | 560 | 5600 | | 0.056 | 0.56 | 5.6 | 56 | — | 5600 |
| — | — | — | 6000 | | 0.06 | — | 6 | — | — | 6000 |
| — | 62 | 620 | 6200 | | — | — | — | — | — | — |
| — | 68 | 680 | 6800 | | 0.068 | 0.68 | 6.8 | — | — | — |
| — | 75 | 750 | 7500 | | — | — | — | 75 | — | — |
| — | — | — | 8000 | | — | — | 8 | 80 | — | — |
| — | 82 | 820 | 8200 | | 0.082 | 0.82 | 8.2 | 82 | — | — |
| — | 91 | 910 | 9100 | | — | — | — | — | — | — |
| 10 | 100 | 1000 | | 0.01 | 0.1 | 1 | 10 | 100 | 1000 | 10000 |
| — | 110 | 1100 | | — | — | — | — | — | — | |
| 12 | 120 | 1200 | | 0.012 | 0.12 | 1.2 | — | — | — | |
| — | 130 | 1300 | | — | — | — | — | — | — | |
| 15 | 150 | 1500 | | 0.015 | 0.15 | 1.5 | 15 | 150 | 1500 | |
| — | 160 | 1600 | | — | — | — | — | — | — | |
| 18 | 180 | 1800 | | 0.018 | 0.18 | 1.8 | 18 | 180 | — | |
| 20 | 200 | 2000 | | 0.02 | 0.2 | 2 | 20 | 200 | 2000 | |
| 22 | 220 | 2200 | | — | 0.22 | 2.2 | 22 | — | — | |
| 24 | 240 | 2400 | | — | — | — | — | 240 | — | |
| — | 250 | 2500 | | — | 0.25 | — | 25 | 250 | 2500 | |
| 27 | 270 | 2700 | | 0.027 | 0.27 | 2.7 | 27 | 270 | — | |
| 30 | 300 | 3000 | | 0.03 | 0.3 | 3 | 30 | 300 | 3000 | |
| 33 | 330 | 3300 | | 0.033 | 0.33 | 3.3 | 33 | 330 | 3300 | |
| 36 | 360 | 3600 | | — | — | — | — | — | — | |
| 39 | 390 | 3900 | | 0.039 | 0.39 | 3.9 | 39 | — | — | |
| — | — | 4000 | | 0.04 | — | 4 | — | 400 | — | |
| 43 | 430 | 4300 | | — | — | — | — | — | — | |
| 47 | 470 | 4700 | | 0.047 | 0.47 | 4.7 | 47 | — | — | |