# NTC THERMISTOR R-T CHARACTERISTICS

| TYPE | TN11-3I202J [T,B] |
|---|---|

| | | | |
|---|---|---|---|
| RESISTANCE(at25℃) | 2000 Ω | R-TOLERANCE(±) | 5 % |
| B-VALUE(25/50℃) | 3400 K | B-TOLERANCE(±) | 3 % |

| T(℃) | Rmin(Ω) | Rnom(Ω) | Rmax(Ω) |
|---|---|---|---|
| -40 | 3.909E+004 | 4.526E+004 | 5.228E+004 |
| -39 | 3.688E+004 | 4.262E+004 | 4.914E+004 |
| -38 | 3.481E+004 | 4.016E+004 | 4.621E+004 |
| -37 | 3.287E+004 | 3.785E+004 | 4.348E+004 |
| -36 | 3.105E+004 | 3.569E+004 | 4.093E+004 |
| -35 | 2.935E+004 | 3.368E+004 | 3.854E+004 |
| -34 | 2.775E+004 | 3.179E+004 | 3.631E+004 |
| -33 | 2.625E+004 | 3.002E+004 | 3.423E+004 |
| -32 | 2.485E+004 | 2.836E+004 | 3.228E+004 |
| -31 | 2.352E+004 | 2.680E+004 | 3.046E+004 |
| -30 | 2.228E+004 | 2.534E+004 | 2.875E+004 |
| -29 | 2.111E+004 | 2.397E+004 | 2.715E+004 |
| -28 | 2.002E+004 | 2.269E+004 | 2.565E+004 |
| -27 | 1.898E+004 | 2.148E+004 | 2.424E+004 |
| -26 | 1.801E+004 | 2.034E+004 | 2.292E+004 |
| -25 | 1.709E+004 | 1.928E+004 | 2.168E+004 |
| -24 | 1.623E+004 | 1.827E+004 | 2.052E+004 |
| -23 | 1.541E+004 | 1.733E+004 | 1.943E+004 |
| -22 | 1.465E+004 | 1.644E+004 | 1.840E+004 |
| -21 | 1.392E+004 | 1.560E+004 | 1.743E+004 |
| -20 | 1.324E+004 | 1.481E+004 | 1.652E+004 |
| -19 | 1.259E+004 | 1.406E+004 | 1.567E+004 |
| -18 | 1.198E+004 | 1.336E+004 | 1.486E+004 |
| -17 | 1.141E+004 | 1.270E+004 | 1.410E+004 |
| -16 | 1.086E+004 | 1.207E+004 | 1.339E+004 |
| -15 | 1.035E+004 | 1.148E+004 | 1.271E+004 |
| -14 | 9.859E+003 | 1.093E+004 | 1.208E+004 |
| -13 | 9.398E+003 | 1.040E+004 | 1.148E+004 |
| -12 | 8.962E+003 | 9.902E+003 | 1.091E+004 |
| -11 | 8.548E+003 | 9.431E+003 | 1.038E+004 |
| -10 | 8.156E+003 | 8.985E+003 | 9.874E+003 |
| -9 | 7.786E+003 | 8.564E+003 | 9.397E+003 |
| -8 | 7.434E+003 | 8.165E+003 | 8.947E+003 |
| -7 | 7.100E+003 | 7.788E+003 | 8.521E+003 |
| -6 | 6.784E+003 | 7.430E+003 | 8.117E+003 |
| -5 | 6.483E+003 | 7.091E+003 | 7.736E+003 |
| -4 | 6.198E+003 | 6.769E+003 | 7.374E+003 |
| -3 | 5.927E+003 | 6.464E+003 | 7.032E+003 |
| -2 | 5.670E+003 | 6.175E+003 | 6.708E+003 |
| -1 | 5.425E+003 | 5.900E+003 | 6.401E+003 |
| 0 | 5.192E+003 | 5.640E+003 | 6.110E+003 |

| T(℃) | Rmin(Ω) | Rnom(Ω) | Rmax(Ω) |
|---|---|---|---|
| 0 | 5.192E+003 | 5.640E+003 | 6.110E+003 |
| 1 | 4.971E+003 | 5.392E+003 | 5.834E+003 |
| 2 | 4.761E+003 | 5.157E+003 | 5.572E+003 |
| 3 | 4.561E+003 | 4.933E+003 | 5.323E+003 |
| 4 | 4.370E+003 | 4.721E+003 | 5.087E+003 |
| 5 | 4.189E+003 | 4.519E+003 | 4.863E+003 |
| 6 | 4.016E+003 | 4.327E+003 | 4.651E+003 |
| 7 | 3.852E+003 | 4.145E+003 | 4.449E+003 |
| 8 | 3.695E+003 | 3.971E+003 | 4.257E+003 |
| 9 | 3.546E+003 | 3.806E+003 | 4.074E+003 |
| 10 | 3.404E+003 | 3.648E+003 | 3.901E+003 |
| 11 | 3.268E+003 | 3.498E+003 | 3.736E+003 |
| 12 | 3.138E+003 | 3.355E+003 | 3.579E+003 |
| 13 | 3.015E+003 | 3.219E+003 | 3.429E+003 |
| 14 | 2.897E+003 | 3.090E+003 | 3.287E+003 |
| 15 | 2.784E+003 | 2.966E+003 | 3.151E+003 |
| 16 | 2.677E+003 | 2.848E+003 | 3.022E+003 |
| 17 | 2.574E+003 | 2.736E+003 | 2.900E+003 |
| 18 | 2.476E+003 | 2.628E+003 | 2.782E+003 |
| 19 | 2.383E+003 | 2.526E+003 | 2.671E+003 |
| 20 | 2.293E+003 | 2.428E+003 | 2.564E+003 |
| 21 | 2.207E+003 | 2.334E+003 | 2.462E+003 |
| 22 | 2.125E+003 | 2.245E+003 | 2.365E+003 |
| 23 | 2.047E+003 | 2.160E+003 | 2.273E+003 |
| 24 | 1.972E+003 | 2.078E+003 | 2.184E+003 |
| 25 | 1.900E+003 | 2.000E+003 | 2.100E+003 |
| 26 | 1.827E+003 | 1.925E+003 | 2.024E+003 |
| 27 | 1.757E+003 | 1.854E+003 | 1.951E+003 |
| 28 | 1.691E+003 | 1.786E+003 | 1.881E+003 |
| 29 | 1.627E+003 | 1.720E+003 | 1.815E+003 |
| 30 | 1.566E+003 | 1.658E+003 | 1.750E+003 |
| 31 | 1.508E+003 | 1.598E+003 | 1.689E+003 |
| 32 | 1.452E+003 | 1.540E+003 | 1.630E+003 |
| 33 | 1.399E+003 | 1.485E+003 | 1.574E+003 |
| 34 | 1.347E+003 | 1.433E+003 | 1.519E+003 |
| 35 | 1.299E+003 | 1.382E+003 | 1.467E+003 |
| 36 | 1.252E+003 | 1.334E+003 | 1.417E+003 |
| 37 | 1.207E+003 | 1.287E+003 | 1.370E+003 |
| 38 | 1.164E+003 | 1.243E+003 | 1.324E+003 |
| 39 | 1.122E+003 | 1.200E+003 | 1.279E+003 |
| 40 | 1.083E+003 | 1.159E+003 | 1.237E+003 |

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|---|---|

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| B-VALUE(25/50℃) | 3400 K | B-TOLERANCE(±) | 3 % |

| T(℃) | Rmin(Ω) | Rnom(Ω) | Rmax(Ω) |
|---|---|---|---|
| 40 | 1.083E+003 | 1.159E+003 | 1.237E+003 |
| 41 | 1.045E+003 | 1.119E+003 | 1.196E+003 |
| 42 | 1.009E+003 | 1.082E+003 | 1.157E+003 |
| 43 | 9.738E+002 | 1.045E+003 | 1.119E+003 |
| 44 | 9.403E+002 | 1.010E+003 | 1.083E+003 |
| 45 | 9.082E+002 | 9.768E+002 | 1.048E+003 |
| 46 | 8.774E+002 | 9.446E+002 | 1.014E+003 |
| 47 | 8.478E+002 | 9.136E+002 | 9.821E+002 |
| 48 | 8.193E+002 | 8.839E+002 | 9.511E+002 |
| 49 | 7.920E+002 | 8.552E+002 | 9.212E+002 |
| 50 | 7.658E+002 | 8.277E+002 | 8.924E+002 |
| 51 | 7.406E+002 | 8.012E+002 | 8.647E+002 |
| 52 | 7.163E+002 | 7.758E+002 | 8.380E+002 |
| 53 | 6.930E+002 | 7.513E+002 | 8.123E+002 |
| 54 | 6.706E+002 | 7.277E+002 | 7.876E+002 |
| 55 | 6.491E+002 | 7.050E+002 | 7.637E+002 |
| 56 | 6.284E+002 | 6.831E+002 | 7.407E+002 |
| 57 | 6.084E+002 | 6.620E+002 | 7.186E+002 |
| 58 | 5.892E+002 | 6.417E+002 | 6.972E+002 |
| 59 | 5.707E+002 | 6.222E+002 | 6.766E+002 |
| 60 | 5.530E+002 | 6.034E+002 | 6.567E+002 |
| 61 | 5.358E+002 | 5.852E+002 | 6.376E+002 |
| 62 | 5.194E+002 | 5.677E+002 | 6.191E+002 |
| 63 | 5.035E+002 | 5.509E+002 | 6.012E+002 |
| 64 | 4.882E+002 | 5.346E+002 | 5.840E+002 |
| 65 | 4.734E+002 | 5.189E+002 | 5.674E+002 |
| 66 | 4.592E+002 | 5.038E+002 | 5.513E+002 |
| 67 | 4.455E+002 | 4.892E+002 | 5.358E+002 |
| 68 | 4.323E+002 | 4.751E+002 | 5.208E+002 |
| 69 | 4.195E+002 | 4.614E+002 | 5.063E+002 |
| 70 | 4.072E+002 | 4.483E+002 | 4.923E+002 |
| 71 | 3.953E+002 | 4.356E+002 | 4.788E+002 |
| 72 | 3.839E+002 | 4.233E+002 | 4.657E+002 |
| 73 | 3.728E+002 | 4.115E+002 | 4.530E+002 |
| 74 | 3.621E+002 | 4.000E+002 | 4.408E+002 |
| 75 | 3.518E+002 | 3.890E+002 | 4.290E+002 |
| 76 | 3.418E+002 | 3.782E+002 | 4.175E+002 |
| 77 | 3.322E+002 | 3.679E+002 | 4.064E+002 |
| 78 | 3.229E+002 | 3.579E+002 | 3.957E+002 |
| 79 | 3.139E+002 | 3.482E+002 | 3.853E+002 |
| 80 | 3.052E+002 | 3.388E+002 | 3.752E+002 |

| T(℃) | Rmin(Ω) | Rnom(Ω) | Rmax(Ω) |
|---|---|---|---|
| 80 | 3.052E+002 | 3.388E+002 | 3.752E+002 |
| 81 | 2.967E+002 | 3.297E+002 | 3.654E+002 |
| 82 | 2.886E+002 | 3.209E+002 | 3.560E+002 |
| 83 | 2.807E+002 | 3.124E+002 | 3.468E+002 |
| 84 | 2.731E+002 | 3.042E+002 | 3.379E+002 |
| 85 | 2.657E+002 | 2.962E+002 | 3.293E+002 |
| 86 | 2.586E+002 | 2.885E+002 | 3.210E+002 |
| 87 | 2.517E+002 | 2.810E+002 | 3.129E+002 |
| 88 | 2.450E+002 | 2.737E+002 | 3.051E+002 |
| 89 | 2.385E+002 | 2.667E+002 | 2.975E+002 |
| 90 | 2.323E+002 | 2.599E+002 | 2.901E+002 |
| 91 | 2.262E+002 | 2.533E+002 | 2.830E+002 |
| 92 | 2.203E+002 | 2.470E+002 | 2.761E+002 |
| 93 | 2.147E+002 | 2.408E+002 | 2.694E+002 |
| 94 | 2.092E+002 | 2.348E+002 | 2.629E+002 |
| 95 | 2.038E+002 | 2.290E+002 | 2.566E+002 |
| 96 | 1.987E+002 | 2.233E+002 | 2.505E+002 |
| 97 | 1.936E+002 | 2.179E+002 | 2.445E+002 |
| 98 | 1.888E+002 | 2.126E+002 | 2.387E+002 |
| 99 | 1.841E+002 | 2.074E+002 | 2.331E+002 |
| 100 | 1.795E+002 | 2.024E+002 | 2.276E+002 |
| 101 | 1.751E+002 | 1.975E+002 | 2.223E+002 |
| 102 | 1.707E+002 | 1.928E+002 | 2.172E+002 |
| 103 | 1.666E+002 | 1.882E+002 | 2.122E+002 |
| 104 | 1.625E+002 | 1.838E+002 | 2.073E+002 |
| 105 | 1.586E+002 | 1.794E+002 | 2.025E+002 |
| 106 | 1.547E+002 | 1.752E+002 | 1.979E+002 |
| 107 | 1.510E+002 | 1.711E+002 | 1.935E+002 |
| 108 | 1.474E+002 | 1.672E+002 | 1.891E+002 |
| 109 | 1.439E+002 | 1.633E+002 | 1.849E+002 |
| 110 | 1.405E+002 | 1.596E+002 | 1.808E+002 |
| 111 | 1.372E+002 | 1.559E+002 | 1.768E+002 |
| 112 | 1.340E+002 | 1.524E+002 | 1.729E+002 |
| 113 | 1.309E+002 | 1.490E+002 | 1.691E+002 |
| 114 | 1.279E+002 | 1.456E+002 | 1.654E+002 |
| 115 | 1.249E+002 | 1.424E+002 | 1.618E+002 |
| 116 | 1.221E+002 | 1.392E+002 | 1.583E+002 |
| 117 | 1.193E+002 | 1.361E+002 | 1.549E+002 |
| 118 | 1.166E+002 | 1.331E+002 | 1.516E+002 |
| 119 | 1.139E+002 | 1.302E+002 | 1.484E+002 |
| 120 | 1.114E+002 | 1.274E+002 | 1.452E+002 |
| 121 | 1.089E+002 | 1.246E+002 | 1.422E+002 |
| 122 | 1.065E+002 | 1.219E+002 | 1.392E+002 |
| 123 | 1.041E+002 | 1.193E+002 | 1.363E+002 |
| 124 | 1.018E+002 | 1.167E+002 | 1.335E+002 |
| 125 | 9.960E+001 | 1.143E+002 | 1.307E+002 |