



## MEAS HD DO-35 SERIES THERMISTOR 10K BETA <sup>25/85</sup> 3450

- High Stability DO-35 Thermistor
- Highly Density (HD) electroceramic thermistor
- Hermetically sealed elements, glass encapsulation
- Axial Leads for PCB mounting
- High temperature devices for applications up to +300°C
- RoHS Compliant
- Copper clad steel (CCS Wire)

### Features

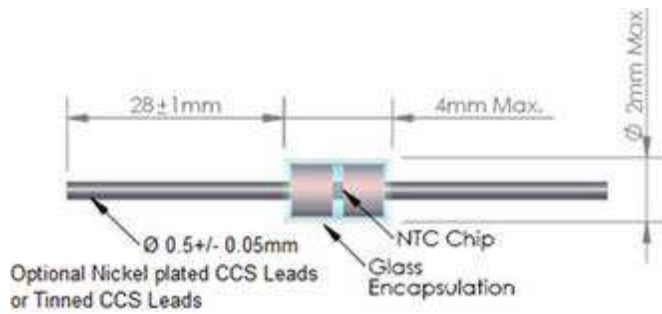
- Hermetically sealed glass package
- Proven Stability at elevated temperatures
- High temperature capability to +300°C
- 24 AWG Nickel Plated CCS Wire
- Cost effective for high volume applications
- Temp range (Nickel plated) -40°C to +300 °C
- Temp range (Tinned) -40 °C to +200 °C

### Applications

- HVAC and refrigeration probe assemblies
- High humidity due to glass protection
- Consumer electronics
- PCB temperature sensing
- Air conditioning

TE has recently developed new advanced ceramic processing techniques and proprietary formulations for the manufacture of high-stability electroceramic thermistor materials. These materials are now used in a select range of DO-35 thermistor sensor components. The newly developed high-density thermistor chip is hermetically sealed in a glass (DO-35 diode style) package to provide protection where high humidity is present and long-term performance is required.

## Dimensions



## Electrical Specifications

| PARAMETERS                                      | UNITS   | VALUE       |
|-------------------------------------------------|---------|-------------|
| Resistance @ +25°C                              | Ohms    | 10,000      |
| Resistance tolerance @ +25°C                    | %       | ± 1         |
| Beta Value 25/85                                | K       | 3450        |
| Tolerance on Beta Value 25/85                   | %       | ± 1         |
| Time response in liquid                         | Seconds | Approx.2    |
| Dissipation Constant in still air               | mW/°C   | 1.9         |
| Operating Temperature (Nickel plated CCS Leads) | °C      | -40 to +300 |
| Operating Temperature (Tinned CCS Leads)        | °C      | -40 to +200 |
| Max' Permissible Current (25°C, Still Air)      | A max   | 0.25mA      |
| Max' Power Rating (25°C, Still Air)             | P max   | 110 mW      |

## General Test

| TEST ITEM                           | PERFORMANCE REQUIREMENTS | TEST CONDITION                                            |
|-------------------------------------|--------------------------|-----------------------------------------------------------|
| A. Appearance                       | No Cracking              | Visual examination                                        |
| B. Dimension                        | Dimension tolerances     | Caliper, Micrometer                                       |
| C. Resistance (R25)                 | 10K±1%                   | At zero power, 25°C                                       |
| D. Beta Value                       | B25/85=3450K±1%          | B = $\frac{\ln R_{25} - \ln R_{85}}{1/298.15 - 1/358.15}$ |
|                                     |                          | R25=Resistance at 25.0±0.1°C                              |
|                                     |                          | R85=Resistance at 85.0±0.1°C                              |
| E. Thermal time constant (τ)        | Approx.2 sec             | Measured in stirred water                                 |
| F. Thermal Dissipation Constant (δ) | Approx.1.9m W/°C         | Measured in still air, normal temp                        |

## Reliability

| TEST ITEM                                                                                                                                                                                                                                                                                                                                   | TEST METHODS                                                                                                                                                             | CRITERIA                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>A. Low temperature storage</b>                                                                                                                                                                                                                                                                                                           | After placing a thermistor in $-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ for 1000 hours, keep it in normal temperature and humidity for one hour.                        | $\Delta R/R \leq 2\%$ $\Delta B/B \leq 1\%$ |
| <b>B. High temperature storage</b>                                                                                                                                                                                                                                                                                                          | Tinned Version: After placing a thermistor in $200^{\circ}\text{C}\pm 3^{\circ}\text{C}$ for 1000 hours, keep it in normal temperature and humidity for one hour.        | $\Delta R/R \leq 2\%$ $\Delta B/B \leq 1\%$ |
|                                                                                                                                                                                                                                                                                                                                             | Nickel Plated Version: After placing a thermistor in $300^{\circ}\text{C}\pm 3^{\circ}\text{C}$ for 1000 hours, keep it in normal temperature and humidity for one hour. | $\Delta R/R \leq 3\%$ $\Delta B/B \leq 2\%$ |
| <b>C. Thermal cycle test</b>                                                                                                                                                                                                                                                                                                                | After 100 cycles test under the conditions as shown below, keep the thermistor in normal temperature and humidity for one hour.                                          | $\Delta R/R \leq 2\%$ $\Delta B/B \leq 1\%$ |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <math>80^{\circ}\text{C}\pm 3^{\circ}\text{C}</math><br/>(in air)         </div> </div> <p>Normal temp<br/>(in air)</p> <p><math>-20^{\circ}\text{C}\pm 3^{\circ}\text{C}</math><br/>(in air)</p> <p>30min 15min 30min 15min</p> <p>1 Cycle 2 Cycle</p> |                                                                                                                                                                          |                                             |
| <b>D. Humidity test</b>                                                                                                                                                                                                                                                                                                                     | After placing a thermistor in $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , 90~95%RH, for 1000 hours, keep it in normal temperature and humidity for one hour.             | $\Delta R/R \leq 2\%$ $\Delta B/B \leq 1\%$ |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| -40.0      | 194.700      | 204.224      | 214.193      | -5.82       |
| -39.0      | 183.872      | 192.727      | 201.988      | -5.77       |
| -38.0      | 173.724      | 181.959      | 190.565      | -5.73       |
| -37.0      | 164.208      | 171.869      | 179.870      | -5.68       |
| -36.0      | 155.281      | 162.411      | 169.852      | -5.64       |
| -35.0      | 146.902      | 153.540      | 160.461      | -5.60       |
| -34.0      | 139.035      | 145.216      | 151.657      | -5.55       |
| -33.0      | 131.645      | 137.402      | 143.397      | -5.51       |
| -32.0      | 124.698      | 130.063      | 135.644      | -5.47       |
| -31.0      | 118.167      | 123.167      | 128.365      | -5.43       |
| -30.0      | 112.023      | 116.684      | 121.526      | -5.39       |
| -29.0      | 106.242      | 110.587      | 115.100      | -5.35       |
| -28.0      | 100.798      | 104.851      | 109.057      | -5.31       |
| -27.0      | 95.671       | 99.452       | 103.373      | -5.27       |
| -26.0      | 90.839       | 94.368       | 98.024       | -5.23       |
| -25.0      | 86.285       | 89.578       | 92.988       | -5.19       |
| -24.0      | 81.990       | 85.064       | 88.245       | -5.15       |
| -23.0      | 77.937       | 80.808       | 83.776       | -5.12       |
| -22.0      | 74.113       | 76.793       | 79.563       | -5.08       |
| -21.0      | 70.501       | 73.005       | 75.590       | -5.04       |
| -20.0      | 67.090       | 69.429       | 71.843       | -5.01       |
| -19.0      | 63.866       | 66.052       | 68.305       | -4.97       |
| -18.0      | 60.819       | 62.862       | 64.966       | -4.93       |
| -17.0      | 57.937       | 59.846       | 61.812       | -4.90       |
| -16.0      | 55.211       | 56.996       | 58.832       | -4.87       |
| -15.0      | 52.631       | 54.299       | 56.014       | -4.83       |
| -14.0      | 50.189       | 51.748       | 53.351       | -4.80       |
| -13.0      | 47.875       | 49.334       | 50.831       | -4.76       |
| -12.0      | 45.684       | 47.047       | 48.446       | -4.73       |
| -11.0      | 43.607       | 44.882       | 46.189       | -4.70       |
| -10.0      | 41.637       | 42.830       | 44.052       | -4.67       |
| -9.0       | 39.770       | 40.885       | 42.027       | -4.63       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| -8.0       | 37.998       | 39.041       | 40.108       | -4.60       |
| -7.0       | 36.316       | 37.291       | 38.289       | -4.57       |
| -6.0       | 34.719       | 35.632       | 36.564       | -4.54       |
| -5.0       | 33.203       | 34.056       | 34.928       | -4.51       |
| -4.0       | 31.763       | 32.560       | 33.375       | -4.48       |
| -3.0       | 30.394       | 31.140       | 31.901       | -4.45       |
| -2.0       | 29.092       | 29.790       | 30.501       | -4.42       |
| -1.0       | 27.855       | 28.507       | 29.171       | -4.39       |
| 0.0        | 26.677       | 27.287       | 27.908       | -4.35       |
| 1.0        | 25.560       | 26.130       | 26.710       | -4.32       |
| 2.0        | 24.496       | 25.029       | 25.571       | -4.29       |
| 3.0        | 23.483       | 23.981       | 24.487       | -4.26       |
| 4.0        | 22.518       | 22.984       | 23.456       | -4.24       |
| 5.0        | 21.599       | 22.034       | 22.475       | -4.21       |
| 6.0        | 20.723       | 21.129       | 21.541       | -4.18       |
| 7.0        | 19.888       | 20.267       | 20.651       | -4.15       |
| 8.0        | 19.091       | 19.445       | 19.804       | -4.13       |
| 9.0        | 18.332       | 18.662       | 18.996       | -4.10       |
| 10.0       | 17.607       | 17.915       | 18.226       | -4.07       |
| 11.0       | 16.915       | 17.202       | 17.492       | -4.05       |
| 12.0       | 16.254       | 16.522       | 16.792       | -4.02       |
| 13.0       | 15.623       | 15.872       | 16.124       | -4.00       |
| 14.0       | 15.021       | 15.253       | 15.487       | -3.97       |
| 15.0       | 14.445       | 14.661       | 14.878       | -3.95       |
| 16.0       | 13.895       | 14.095       | 14.297       | -3.92       |
| 17.0       | 13.368       | 13.555       | 13.743       | -3.90       |
| 18.0       | 12.865       | 13.038       | 13.213       | -3.87       |
| 19.0       | 12.384       | 12.545       | 12.706       | -3.85       |
| 20.0       | 11.924       | 12.072       | 12.222       | -3.83       |
| 21.0       | 11.483       | 11.621       | 11.759       | -3.80       |
| 22.0       | 11.061       | 11.189       | 11.316       | -3.78       |
| 23.0       | 10.657       | 10.775       | 10.893       | -3.76       |
| 24.0       | 10.271       | 10.379       | 10.488       | -3.73       |
| 25.0       | 9.900        | 10.000       | 10.100       | -3.71       |
| 26.0       | 9.536        | 9.637        | 9.738        | -3.69       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 27.0       | 9.188        | 9.289        | 9.391        | -3.67       |
| 28.0       | 8.854        | 8.956        | 9.058        | -3.64       |
| 29.0       | 8.534        | 8.636        | 8.739        | -3.62       |
| 30.0       | 8.228        | 8.330        | 8.433        | -3.60       |
| 31.0       | 7.934        | 8.036        | 8.139        | -3.58       |
| 32.0       | 7.653        | 7.755        | 7.857        | -3.56       |
| 33.0       | 7.383        | 7.484        | 7.587        | -3.54       |
| 34.0       | 7.124        | 7.225        | 7.327        | -3.52       |
| 35.0       | 6.875        | 6.976        | 7.078        | -3.50       |
| 36.0       | 6.637        | 6.737        | 6.838        | -3.48       |
| 37.0       | 6.408        | 6.508        | 6.608        | -3.46       |
| 38.0       | 6.188        | 6.287        | 6.387        | -3.44       |
| 39.0       | 5.977        | 6.076        | 6.175        | -3.42       |
| 40.0       | 5.775        | 5.872        | 5.970        | -3.40       |
| 41.0       | 5.580        | 5.677        | 5.774        | -3.38       |
| 42.0       | 5.393        | 5.489        | 5.585        | -3.36       |
| 43.0       | 5.214        | 5.308        | 5.404        | -3.34       |
| 44.0       | 5.041        | 5.134        | 5.229        | -3.32       |
| 45.0       | 4.875        | 4.967        | 5.061        | -3.30       |
| 46.0       | 4.715        | 4.806        | 4.899        | -3.28       |
| 47.0       | 4.561        | 4.652        | 4.743        | -3.26       |
| 48.0       | 4.413        | 4.503        | 4.593        | -3.25       |
| 49.0       | 4.271        | 4.359        | 4.449        | -3.23       |
| 50.0       | 4.134        | 4.221        | 4.310        | -3.28       |
| 51.0       | 3.999        | 4.085        | 4.172        | -3.27       |
| 52.0       | 3.869        | 3.954        | 4.040        | -3.26       |
| 53.0       | 3.744        | 3.828        | 3.913        | -3.25       |
| 54.0       | 3.624        | 3.706        | 3.790        | -3.23       |
| 55.0       | 3.507        | 3.588        | 3.671        | -3.22       |
| 56.0       | 3.395        | 3.475        | 3.556        | -3.21       |
| 57.0       | 3.287        | 3.365        | 3.446        | -3.20       |
| 58.0       | 3.182        | 3.260        | 3.339        | -3.18       |
| 59.0       | 3.082        | 3.158        | 3.236        | -3.17       |
| 60.0       | 2.985        | 3.060        | 3.136        | -3.16       |
| 61.0       | 2.891        | 2.965        | 3.040        | -3.15       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 62.0       | 2.800        | 2.873        | 2.947        | -3.14       |
| 63.0       | 2.713        | 2.785        | 2.858        | -3.13       |
| 64.0       | 2.629        | 2.699        | 2.771        | -3.11       |
| 65.0       | 2.548        | 2.617        | 2.688        | -3.10       |
| 66.0       | 2.469        | 2.537        | 2.607        | -3.09       |
| 67.0       | 2.393        | 2.460        | 2.529        | -3.08       |
| 68.0       | 2.320        | 2.386        | 2.453        | -3.07       |
| 69.0       | 2.249        | 2.314        | 2.380        | -3.06       |
| 70.0       | 2.181        | 2.244        | 2.310        | -3.05       |
| 71.0       | 2.115        | 2.177        | 2.241        | -3.03       |
| 72.0       | 2.051        | 2.112        | 2.175        | -3.02       |
| 73.0       | 1.989        | 2.050        | 2.111        | -3.01       |
| 74.0       | 1.930        | 1.989        | 2.050        | -3.00       |
| 75.0       | 1.872        | 1.930        | 1.990        | -2.99       |
| 76.0       | 1.816        | 1.874        | 1.932        | -2.98       |
| 77.0       | 1.763        | 1.819        | 1.876        | -2.97       |
| 78.0       | 1.710        | 1.766        | 1.822        | -2.96       |
| 79.0       | 1.660        | 1.714        | 1.770        | -2.95       |
| 80.0       | 1.611        | 1.665        | 1.719        | -2.94       |
| 81.0       | 1.564        | 1.617        | 1.670        | -2.93       |
| 82.0       | 1.519        | 1.570        | 1.623        | -2.92       |
| 83.0       | 1.475        | 1.525        | 1.577        | -2.91       |
| 84.0       | 1.432        | 1.481        | 1.532        | -2.90       |
| 85.0       | 1.391        | 1.439        | 1.489        | -2.89       |
| 86.0       | 1.351        | 1.398        | 1.447        | -2.88       |
| 87.0       | 1.312        | 1.359        | 1.407        | -2.87       |
| 88.0       | 1.275        | 1.320        | 1.368        | -2.86       |
| 89.0       | 1.238        | 1.283        | 1.330        | -2.85       |
| 90.0       | 1.203        | 1.247        | 1.293        | -2.84       |
| 91.0       | 1.169        | 1.213        | 1.257        | -2.83       |
| 92.0       | 1.136        | 1.179        | 1.223        | -2.82       |
| 93.0       | 1.104        | 1.146        | 1.189        | -2.81       |
| 94.0       | 1.073        | 1.114        | 1.157        | -2.80       |
| 95.0       | 1.044        | 1.084        | 1.125        | -2.79       |
| 96.0       | 1.015        | 1.054        | 1.095        | -2.78       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 97.0       | 0.986        | 1.025        | 1.065        | -2.77       |
| 98.0       | 0.959        | 0.997        | 1.037        | -2.76       |
| 99.0       | 0.933        | 0.970        | 1.009        | -2.75       |
| 100.0      | 0.907        | 0.944        | 0.982        | -2.66       |
| 101.0      | 0.883        | 0.919        | 0.956        | -2.65       |
| 102.0      | 0.860        | 0.895        | 0.932        | -2.64       |
| 103.0      | 0.837        | 0.872        | 0.908        | -2.63       |
| 104.0      | 0.815        | 0.849        | 0.885        | -2.62       |
| 105.0      | 0.794        | 0.827        | 0.862        | -2.61       |
| 106.0      | 0.773        | 0.806        | 0.840        | -2.60       |
| 107.0      | 0.753        | 0.785        | 0.819        | -2.60       |
| 108.0      | 0.734        | 0.765        | 0.798        | -2.59       |
| 109.0      | 0.715        | 0.746        | 0.778        | -2.58       |
| 110.0      | 0.696        | 0.727        | 0.759        | -2.57       |
| 111.0      | 0.679        | 0.708        | 0.740        | -2.56       |
| 112.0      | 0.661        | 0.691        | 0.721        | -2.55       |
| 113.0      | 0.644        | 0.673        | 0.703        | -2.54       |
| 114.0      | 0.628        | 0.656        | 0.686        | -2.53       |
| 115.0      | 0.612        | 0.640        | 0.669        | -2.52       |
| 116.0      | 0.597        | 0.624        | 0.653        | -2.51       |
| 117.0      | 0.582        | 0.609        | 0.637        | -2.50       |
| 118.0      | 0.567        | 0.594        | 0.621        | -2.50       |
| 119.0      | 0.553        | 0.579        | 0.606        | -2.49       |
| 120.0      | 0.540        | 0.565        | 0.591        | -2.48       |
| 121.0      | 0.526        | 0.551        | 0.577        | -2.47       |
| 122.0      | 0.513        | 0.538        | 0.563        | -2.46       |
| 123.0      | 0.501        | 0.525        | 0.550        | -2.45       |
| 124.0      | 0.488        | 0.512        | 0.537        | -2.44       |
| 125.0      | 0.477        | 0.500        | 0.524        | -2.44       |
| 126.0      | 0.465        | 0.488        | 0.512        | -2.43       |
| 127.0      | 0.454        | 0.476        | 0.499        | -2.42       |
| 128.0      | 0.443        | 0.465        | 0.488        | -2.41       |
| 129.0      | 0.432        | 0.454        | 0.476        | -2.40       |
| 130.0      | 0.422        | 0.443        | 0.465        | -2.39       |
| 131.0      | 0.412        | 0.432        | 0.454        | -2.39       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 132.0      | 0.402        | 0.422        | 0.444        | -2.38       |
| 133.0      | 0.392        | 0.412        | 0.433        | -2.37       |
| 134.0      | 0.383        | 0.403        | 0.423        | -2.36       |
| 135.0      | 0.374        | 0.393        | 0.414        | -2.35       |
| 136.0      | 0.365        | 0.384        | 0.404        | -2.35       |
| 137.0      | 0.357        | 0.375        | 0.395        | -2.34       |
| 138.0      | 0.348        | 0.367        | 0.386        | -2.33       |
| 139.0      | 0.340        | 0.358        | 0.377        | -2.32       |
| 140.0      | 0.332        | 0.350        | 0.369        | -2.31       |
| 141.0      | 0.325        | 0.342        | 0.360        | -2.31       |
| 142.0      | 0.317        | 0.334        | 0.352        | -2.30       |
| 143.0      | 0.310        | 0.327        | 0.344        | -2.29       |
| 144.0      | 0.303        | 0.319        | 0.337        | -2.28       |
| 145.0      | 0.296        | 0.312        | 0.329        | -2.28       |
| 146.0      | 0.289        | 0.305        | 0.322        | -2.27       |
| 147.0      | 0.283        | 0.298        | 0.315        | -2.26       |
| 148.0      | 0.276        | 0.292        | 0.308        | -2.26       |
| 149.0      | 0.270        | 0.285        | 0.301        | -2.25       |
| 150.0      | 0.264        | 0.279        | 0.294        | -2.20       |
| 151.0      | 0.258        | 0.273        | 0.288        | -2.19       |
| 152.0      | 0.252        | 0.267        | 0.282        | -2.18       |
| 153.0      | 0.247        | 0.261        | 0.276        | -2.17       |
| 154.0      | 0.242        | 0.255        | 0.270        | -2.16       |
| 155.0      | 0.236        | 0.250        | 0.264        | -2.15       |
| 156.0      | 0.231        | 0.245        | 0.259        | -2.14       |
| 157.0      | 0.226        | 0.240        | 0.253        | -2.14       |
| 158.0      | 0.222        | 0.234        | 0.248        | -2.13       |
| 159.0      | 0.217        | 0.230        | 0.243        | -2.12       |
| 160.0      | 0.212        | 0.225        | 0.238        | -2.11       |
| 161.0      | 0.208        | 0.220        | 0.233        | -2.10       |
| 162.0      | 0.203        | 0.216        | 0.228        | -2.09       |
| 163.0      | 0.199        | 0.211        | 0.224        | -2.08       |
| 164.0      | 0.195        | 0.207        | 0.219        | -2.07       |
| 165.0      | 0.191        | 0.203        | 0.215        | -2.06       |
| 166.0      | 0.187        | 0.198        | 0.210        | -2.05       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 167.0      | 0.183        | 0.194        | 0.206        | -2.04       |
| 168.0      | 0.179        | 0.190        | 0.202        | -2.03       |
| 169.0      | 0.176        | 0.187        | 0.198        | -2.03       |
| 170.0      | 0.172        | 0.183        | 0.194        | -2.02       |
| 171.0      | 0.169        | 0.179        | 0.190        | -2.01       |
| 172.0      | 0.165        | 0.176        | 0.187        | -2.00       |
| 173.0      | 0.162        | 0.172        | 0.183        | -1.99       |
| 174.0      | 0.159        | 0.169        | 0.179        | -1.98       |
| 175.0      | 0.156        | 0.166        | 0.176        | -1.97       |
| 176.0      | 0.153        | 0.162        | 0.173        | -1.97       |
| 177.0      | 0.150        | 0.159        | 0.169        | -1.96       |
| 178.0      | 0.147        | 0.156        | 0.166        | -1.95       |
| 179.0      | 0.144        | 0.153        | 0.163        | -1.94       |
| 180.0      | 0.141        | 0.150        | 0.160        | -1.93       |
| 181.0      | 0.138        | 0.147        | 0.157        | -1.92       |
| 182.0      | 0.136        | 0.144        | 0.154        | -1.92       |
| 183.0      | 0.133        | 0.142        | 0.151        | -1.91       |
| 184.0      | 0.131        | 0.139        | 0.148        | -1.90       |
| 185.0      | 0.128        | 0.136        | 0.145        | -1.89       |
| 186.0      | 0.126        | 0.134        | 0.143        | -1.88       |
| 187.0      | 0.123        | 0.131        | 0.140        | -1.88       |
| 188.0      | 0.121        | 0.129        | 0.138        | -1.87       |
| 189.0      | 0.119        | 0.127        | 0.135        | -1.86       |
| 190.0      | 0.116        | 0.124        | 0.133        | -1.85       |
| 191.0      | 0.114        | 0.122        | 0.130        | -1.85       |
| 192.0      | 0.112        | 0.120        | 0.128        | -1.84       |
| 193.0      | 0.110        | 0.118        | 0.126        | -1.83       |
| 194.0      | 0.108        | 0.115        | 0.123        | -1.82       |
| 195.0      | 0.106        | 0.113        | 0.121        | -1.82       |
| 196.0      | 0.104        | 0.111        | 0.119        | -1.81       |
| 197.0      | 0.102        | 0.109        | 0.117        | -1.80       |
| 198.0      | 0.100        | 0.107        | 0.115        | -1.79       |
| 199.0      | 0.099        | 0.105        | 0.113        | -1.79       |
| 200.0      | 0.097        | 0.104        | 0.111        | -1.78       |
| 201.0      | 0.095        | 0.102        | 0.109        | -1.77       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 202.0      | 0.093        | 0.100        | 0.107        | -1.76       |
| 203.0      | 0.092        | 0.098        | 0.105        | -1.76       |
| 204.0      | 0.090        | 0.097        | 0.103        | -1.75       |
| 205.0      | 0.089        | 0.095        | 0.102        | -1.74       |
| 206.0      | 0.087        | 0.093        | 0.100        | -1.74       |
| 207.0      | 0.086        | 0.092        | 0.098        | -1.73       |
| 208.0      | 0.084        | 0.090        | 0.096        | -1.72       |
| 209.0      | 0.083        | 0.089        | 0.095        | -1.72       |
| 210.0      | 0.081        | 0.087        | 0.093        | -1.71       |
| 211.0      | 0.080        | 0.086        | 0.092        | -1.70       |
| 212.0      | 0.078        | 0.084        | 0.090        | -1.69       |
| 213.0      | 0.077        | 0.083        | 0.089        | -1.69       |
| 214.0      | 0.076        | 0.081        | 0.087        | -1.68       |
| 215.0      | 0.075        | 0.080        | 0.086        | -1.67       |
| 216.0      | 0.073        | 0.079        | 0.084        | -1.67       |
| 217.0      | 0.072        | 0.077        | 0.083        | -1.66       |
| 218.0      | 0.071        | 0.076        | 0.082        | -1.65       |
| 219.0      | 0.070        | 0.075        | 0.080        | -1.65       |
| 220.0      | 0.069        | 0.074        | 0.079        | -1.64       |
| 221.0      | 0.067        | 0.072        | 0.078        | -1.64       |
| 222.0      | 0.066        | 0.071        | 0.077        | -1.63       |
| 223.0      | 0.065        | 0.070        | 0.075        | -1.62       |
| 224.0      | 0.064        | 0.069        | 0.074        | -1.62       |
| 225.0      | 0.063        | 0.068        | 0.073        | -1.61       |
| 226.0      | 0.062        | 0.067        | 0.072        | -1.60       |
| 227.0      | 0.061        | 0.066        | 0.071        | -1.60       |
| 228.0      | 0.060        | 0.065        | 0.070        | -1.59       |
| 229.0      | 0.059        | 0.064        | 0.069        | -1.59       |
| 230.0      | 0.058        | 0.063        | 0.067        | -1.58       |
| 231.0      | 0.057        | 0.062        | 0.066        | -1.57       |
| 232.0      | 0.056        | 0.061        | 0.065        | -1.57       |
| 233.0      | 0.056        | 0.060        | 0.064        | -1.56       |
| 234.0      | 0.055        | 0.059        | 0.063        | -1.56       |
| 235.0      | 0.054        | 0.058        | 0.062        | -1.55       |
| 236.0      | 0.053        | 0.057        | 0.061        | -1.54       |

## Resistance vs. Temperature Table

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 237.0      | 0.052        | 0.056        | 0.061        | -1.54       |
| 238.0      | 0.051        | 0.055        | 0.060        | -1.53       |
| 239.0      | 0.051        | 0.054        | 0.059        | -1.53       |
| 240.0      | 0.050        | 0.054        | 0.058        | -1.52       |
| 241.0      | 0.049        | 0.053        | 0.057        | -1.51       |
| 242.0      | 0.048        | 0.052        | 0.056        | -1.51       |
| 243.0      | 0.048        | 0.051        | 0.055        | -1.50       |
| 244.0      | 0.047        | 0.051        | 0.055        | -1.50       |
| 245.0      | 0.046        | 0.050        | 0.054        | -1.49       |
| 246.0      | 0.045        | 0.049        | 0.053        | -1.49       |
| 247.0      | 0.045        | 0.048        | 0.052        | -1.48       |
| 248.0      | 0.044        | 0.048        | 0.051        | -1.48       |
| 249.0      | 0.043        | 0.047        | 0.051        | -1.47       |
| 250.0      | 0.043        | 0.046        | 0.050        | -1.46       |
| 251.0      | 0.042        | 0.046        | 0.049        | -1.46       |
| 252.0      | 0.042        | 0.045        | 0.049        | -1.45       |
| 253.0      | 0.041        | 0.044        | 0.048        | -1.45       |
| 254.0      | 0.040        | 0.044        | 0.047        | -1.44       |
| 255.0      | 0.040        | 0.043        | 0.046        | -1.44       |
| 256.0      | 0.039        | 0.042        | 0.046        | -1.43       |
| 257.0      | 0.039        | 0.042        | 0.045        | -1.43       |
| 258.0      | 0.038        | 0.041        | 0.045        | -1.42       |
| 259.0      | 0.038        | 0.041        | 0.044        | -1.42       |
| 260.0      | 0.037        | 0.040        | 0.043        | -1.41       |
| 261.0      | 0.036        | 0.039        | 0.043        | -1.41       |
| 262.0      | 0.036        | 0.039        | 0.042        | -1.40       |
| 263.0      | 0.035        | 0.038        | 0.042        | -1.40       |
| 264.0      | 0.035        | 0.038        | 0.041        | -1.39       |
| 265.0      | 0.034        | 0.037        | 0.040        | -1.39       |
| 266.0      | 0.034        | 0.037        | 0.040        | -1.38       |
| 267.0      | 0.034        | 0.036        | 0.039        | -1.38       |
| 268.0      | 0.033        | 0.036        | 0.039        | -1.37       |
| 269.0      | 0.033        | 0.035        | 0.038        | -1.37       |
| 270.0      | 0.032        | 0.035        | 0.038        | -1.36       |
| 271.0      | 0.032        | 0.034        | 0.037        | -1.36       |

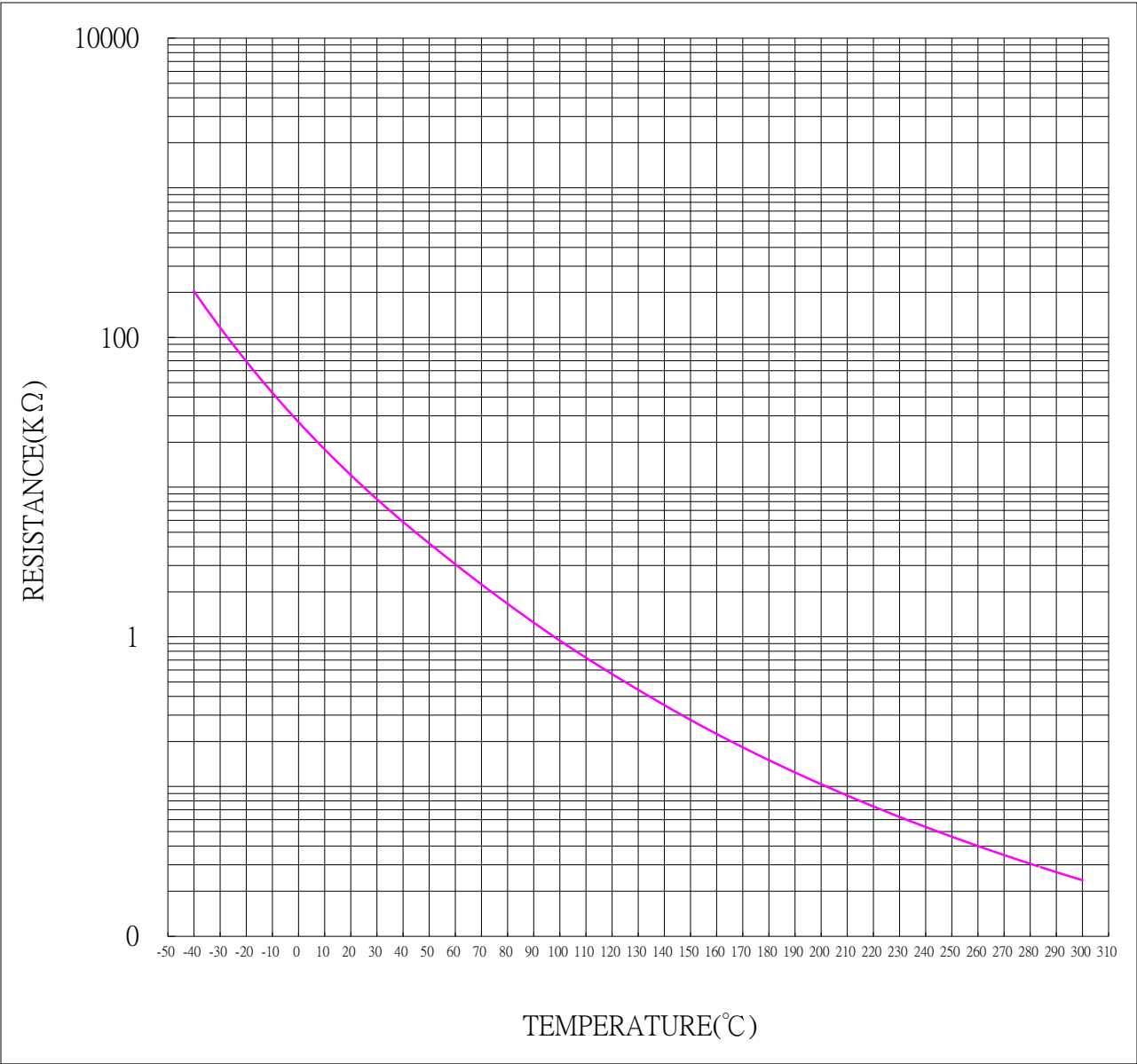
**Resistance vs. Temperature Table**

R25=10KΩ±1% B25/85=3450K±1%

| TEMP. (°C) | MINIMUM (KΩ) | NOMINAL (KΩ) | MAXIMUM (KΩ) | ALPHA(%/°C) |
|------------|--------------|--------------|--------------|-------------|
| 272.0      | 0.031        | 0.034        | 0.037        | -1.35       |
| 273.0      | 0.031        | 0.033        | 0.036        | -1.35       |
| 274.0      | 0.030        | 0.033        | 0.036        | -1.34       |
| 275.0      | 0.030        | 0.033        | 0.035        | -1.34       |
| 276.0      | 0.030        | 0.032        | 0.035        | -1.33       |
| 277.0      | 0.029        | 0.032        | 0.034        | -1.33       |
| 278.0      | 0.029        | 0.031        | 0.034        | -1.32       |
| 279.0      | 0.028        | 0.031        | 0.034        | -1.32       |
| 280.0      | 0.028        | 0.030        | 0.033        | -1.31       |
| 281.0      | 0.028        | 0.030        | 0.033        | -1.31       |
| 282.0      | 0.027        | 0.030        | 0.032        | -1.30       |
| 283.0      | 0.027        | 0.029        | 0.032        | -1.30       |
| 284.0      | 0.027        | 0.029        | 0.031        | -1.30       |
| 285.0      | 0.026        | 0.029        | 0.031        | -1.29       |
| 286.0      | 0.026        | 0.028        | 0.031        | -1.29       |
| 287.0      | 0.026        | 0.028        | 0.030        | -1.28       |
| 288.0      | 0.025        | 0.027        | 0.030        | -1.28       |
| 289.0      | 0.025        | 0.027        | 0.030        | -1.27       |
| 290.0      | 0.025        | 0.027        | 0.029        | -1.27       |
| 291.0      | 0.024        | 0.026        | 0.029        | -1.26       |
| 292.0      | 0.024        | 0.026        | 0.028        | -1.26       |
| 293.0      | 0.024        | 0.026        | 0.028        | -1.26       |
| 294.0      | 0.023        | 0.025        | 0.028        | -1.25       |
| 295.0      | 0.023        | 0.025        | 0.027        | -1.25       |
| 296.0      | 0.023        | 0.025        | 0.027        | -1.24       |
| 297.0      | 0.023        | 0.025        | 0.027        | -1.24       |
| 298.0      | 0.022        | 0.024        | 0.026        | -1.23       |
| 299.0      | 0.022        | 0.024        | 0.026        | -1.23       |
| 300.0      | 0.022        | 0.024        | 0.026        | -1.23       |

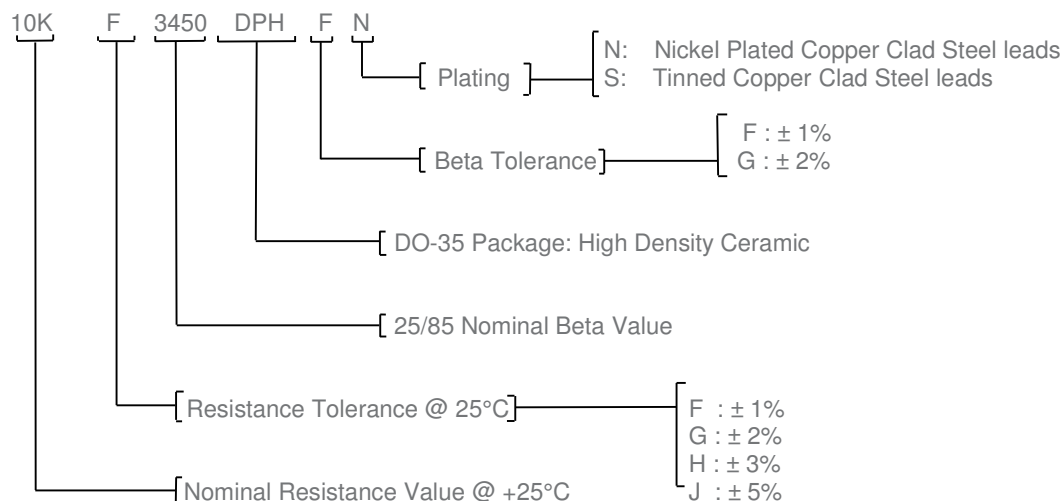
Resistance vs. Temperature Table

R<sub>25</sub>=10KΩ±1% B<sub>25/85</sub>=3450K±1%



## Ordering Information

| PART NUMBER   | DESCRIPTION                                          | NOM. $\Omega$<br>@25°C | RES.<br>TOLERANCE | PACKAGING |
|---------------|------------------------------------------------------|------------------------|-------------------|-----------|
| 10KF3450DPHFN | DO-35 Series Thermistor (+300°C)" for Nickel version | 10,000                 | ± 1%              | Bulk      |
| 10KF3450DPHFS | DO-35 Series Thermistor (+200°C)" for Tinned version | 10,000                 | ± 1%              | Bulk      |



| MEAS PART NUMBER | RESISTANCE [ $\Omega$ ] @ +25°C | TOLERANCE @ +25°C | BETA VALUE 25/85 | BETA TOLERANCE | OPERATING TEMPERATURE |
|------------------|---------------------------------|-------------------|------------------|----------------|-----------------------|
| 5KF3950DPHFN     | 5000                            | ± 1%              | 3950             | ± 1%           | -40° to +300°C        |
| 5KF3950DPHFS     | 5000                            | ± 1%              | 3950             | ± 1%           | -40° to +200°C        |
| 10KF3977DPHFN    | 10000                           | ± 1%              | 3977             | ± 1%           | -40° to +300°C        |
| 10KF3977DPHFS    | 10000                           | ± 1%              | 3977             | ± 1%           | -40° to +200°C        |
| 50KF4050DPHFN    | 50000                           | ± 1%              | 4050             | ± 1%           | -40° to +300°C        |
| 50KF4050DPHFS    | 50000                           | ± 1%              | 4050             | ± 1%           | -40° to +200°C        |

### NORTH AMERICA

Measurement Specialties, Inc.,  
a TE Connectivity Company  
910 Turnpike Road  
Shrewsbury, MA 01545  
Tel : 1-508-842-0516  
Fax : 1-508-842-0342  
Email: customercare.ando@te.com

### EUROPE

Measurement Specialties (Europe), Ltd.,  
a TE Connectivity Company  
Ballybrit Business Park  
Galway Ireland  
Tel : +353-91-753238  
Fax : +353-91-770789  
Email: customercare.glwy@te.com

### ASIA

Measurement Specialties (China), Ltd.,  
a TE Connectivity Company  
No. 368 Wulian 1st Road  
Gongxing Town  
Shuangliu, Chengdu  
Sichuan, 610200  
China  
Tel: +86 (0) 28 8573 9088  
Fax: +86 (0) 28 8573 9070  
Email: customercare.chdu@te.com

### te.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

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**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331