

## Temperature sensing element NTC 10k; $B_{25/85} = 3977$

### Basic technical parameters

Sensing element	Bead NTC thermistor
Working temperature range	-40 to 125 °C *
Resistance at 25 °C	10 kΩ
Coefficient $\beta_{25/85}$	$3977 \pm 1\%$
Coefficient $\beta_{25/100}$	$3994 \pm 1\%$
Long-term resistance stability	$\leq 3\%$ after 1000 h at 85 °C **
Recommended / maximum DC input	0.5 mW / 2 mW
Sensor tolerance	$\pm 0.5\text{ °C}$ for $t = 25\text{ °C}$ ** $\pm 1.0\text{ °C}$ for $t = 0\text{ to }70\text{ °C}$ **

\* The real range of working temperature of the sensor is given by the design and technology.

\*\* These parameters depend on the specific type and design of the thermistor.

### Dependence of resistance in kΩ on temperature

°C	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
-40	<b>334.202</b>									
-30	<b>177.797</b>	189.085	201.158	214.077	227.905	<b>242.710</b>	258.566	275.554	293.759	313.275
-20	<b>97.923</b>	103.781	110.026	116.687	123.795	<b>131.380</b>	139.479	148.128	157.368	167.242
-10	<b>55.805</b>	58.944	62.280	65.827	69.599	<b>73.612</b>	77.883	82.430	87.271	92.428
0	<b>32.869</b>	34.605	36.445	38.396	40.463	<b>42.655</b>	44.981	47.449	50.069	52.850

°C	0	1	2	3	4	5	6	7	8	9
0	<b>32.869</b>	31.229	29.680	28.217	26.834	<b>25.527</b>	24.291	23.122	22.015	20.968
10	<b>19.977</b>	19.038	18.149	17.306	16.507	<b>15.750</b>	15.032	14.350	13.703	13.090
20	<b>12.507</b>	11.953	11.427	10.927	10.452	<b>10.000</b>	9.570	9.161	8.772	8.402
30	<b>8.049</b>	7.713	7.393	7.088	6.798	<b>6.521</b>	6.256	6.004	5.764	5.534
40	<b>5.315</b>	5.106	4.906	4.715	4.533	<b>4.358</b>	4.191	4.032	3.879	3.733
50	<b>3.594</b>	3.460	3.332	3.210	3.092	<b>2.980</b>	2.872	2.768	2.669	2.574
60	<b>2.483</b>	2.396	2.312	2.231	2.154	<b>2.080</b>	2.009	1.940	1.874	1.811
70	<b>1.750</b>	1.692	1.636	1.582	1.530	<b>1.480</b>	1.431	1.385	1.340	1.298
80	<b>1.256</b>	1.216	1.178	1.141	1.105	<b>1.071</b>	1.038	1.006	0.975	0.945
90	<b>0.916</b>	0.889	0.862	0.836	0.811	<b>0.787</b>	0.764	0.741	0.720	0.699
100	<b>0.678</b>	0.659	0.640	0.622	0.604	<b>0.587</b>	0.570	0.554	0.539	0.524
110	<b>0.509</b>	0.495	0.481	0.468	0.455	<b>0.443</b>	0.431	0.419	0.408	0.397
120	<b>0.386</b>	0.376	0.366	0.357	0.347	<b>0.338</b>				

Note: The resistance values in bold are taken from the table of the manufacturer of the bead thermistor, the other values are calculated by linear interpolation, with the error caused by calculation being one order of magnitude lower than the tolerance specified by the manufacturer.