Resistance - Temperature Tables

NTC (Negative Temperature Coefficient) is the negative percent resistance change per degree C. To determine the resistance tolerance of a precision thermistor at any temperature point, multiply the temperature tolerance times the NTC.

As an example,a Curve A thermistor with a temperature tolerance of ±1°C over the temperature range 0° to 70°C would have the following resistance tolerance:
0°C=±5.1%;25°C=±4.4%;70°C=±3.4%

R_T/R_{25} Ratio is the resistance at temperature divided by the resistance at 25°C. To determine the resistance at other temperature points, multiply the coefficient by the R_{25} value.

Ratio TOL (Tolerance) is the resistance tolerance at a temperature point due to slope variance from the nominal R-T Curve. This tolerance applies to thermistors point-matched to a single temperature point. The ratio tolerance is added to the percent resistance tolerance at the point-matched temperature.

	CURVE A			CURVE B			CURVE C			CURVE D		
B 25/85	3975K			3942K			3695K			4262K		
Temp°C	Typical R_{25}=1K to 100K R_T/R_{25} RATIO			Typical R_{25}=10K to 100K R_T/R_{25} RATIO			Typical R_{25}=5K to 20K R_T/R_{25} RATIO			Typical R_{25}=25K to 100K R_T/R_{25} RATIO		
	RATIO	TOL	NTC	RATIO	TOL	NTC	RATIO	TOL	NTC	RATIO	TOL	NTC
-50	67.13	3.5	7.1	56.39	3.5	6.7	44.13	3.5	6.3	82.36	3.5	7.4
-45	47.26		6.9	40.56		6.5	32.36		6.1	57.30		7.1
-40	33.69	3.0	6.7	29.48	3.0	6.3	23.97	3.0	5.9	40.34	3.0	6.9
-35	24.29		6.4	21.64		6.1	17.92		5.3	28.72		6.7
-30	17.71	2.4	6.2	16.03	2.4	5.9	13.52	2.4	5.6	20.67	2.4	6.5
-25	13.05		6.0	11.99		5.7	10.29		5.4	15.02		6.3
-20	9.711	1.9	5.8	9.040	1.9	5.6	7.891	1.9	5.2	11.03	1.9	6.1
-15	7.297		5.6	6.875		5.4	6.102		5.1	8.174		5.9
-10	5.534	1.4	5.4	5.270	1.4	5.2	4.754	1.4	4.9	6.113	1.4	5.7
-5	4.234		5.3	4.071		5.1	3.731		4.8	4.611		5.6
0	3.266	1.0	5.1	3.168	1.0	4.9	2.949	1.0	4.6	3.507	1.0	5.4
5	2.540		5.0	2.483		4.8	2.346		4.5	2.689		5.2
10	1.991	0.5	4.8	1.959	0.5	4.7	1.879	0.5	4.4	2.077	0.5	5.1
15	1.572		4.7	1.556		4.5	1.514		4.3	1.617		4.9
20	1.249	0.1	4.5	1.244	0.1	4.4	1.227	0.1	4.1	1.267	0.1	4.8
25	1.000	0.0	4.4	1.000	0.0	4.3	1.000	0.0	4.0	1.000	0.0	4.7
30	0.8056	0.2	4.3	0.8088	0.2	4.2	0.8196	0.2	3.9	0.7943	0.2	4.5
35	0.6530		4.1	0.6579		4.1	0.6754		3.8	0.6349		4.4
37	0.6014		4.1	0.6066		4.0	0.6260		3.8	0.5815		4.4
40	0.5325	0.6	4.0	0.5380	0.6	4.0	0.5594	0.6	3.7	0.5106	0.6	4.3
45	0.4367		3.9	0.4423		3.9	0.4655		3.6	0.4130		4.2
50	0.3601	1.0	3.8	0.3654	1.0	3.8	0.3893	1.0	3.5	0.3359	1.0	4.1
55	0.2985		3.7	0.3034		3.7	0.3270		3.4	0.2747		4.0
60	0.2487	1.2	3.6	0.2531	1.2	3.6	0.2760	1.2	3.4	0.2259	1.2	3.9
65	0.2082		3.5	0.2121		3.5	0.2338		3.3	0.1866		3.8
70	0.1752	1.6	3.4	0.1785	1.6	3.4	0.1990	1.6	3.2	0.1549	1.6	3.7
75	0.1480		3.3	0.1508		3.3	0.1700		3.1	0.1293		3.6
80	0.1256	1.9	3.2	0.1280	1.9	3.2	0.1457	1.9	3.0	0.1083	1.9	3.5
85	0.1071		3.2	0.1091		3.2	0.1254		3.0	0.09115		3.4
90	0.09161	2.1	3.1	0.09327	2.1	3.1	0.1084	2.1	2.9	0.07704	2.1	3.3
95	0.07870		3.0	0.08006		3.0	0.09392	2.4	2.8	0.06538		3.2
100	0.06786	2.4	2.9	0.06897	2.4	2.9	0.08168	2.4	2.8	0.05570	2.4	3.2
105	0.05873		2.9	0.05962		2.9	0.07127		2.7	0.04764		3.1
110	0.05100	2.6	2.8	0.05171	2.6	2.8	0.06237	2.6	2.6	0.04089	2.6	3.0
115	0.04444		2.7	0.04500		2.8	0.05476		2.6	0.03522		2.9
120	0.03885	2.9	2.7	0.03928	2.9	2.7	0.04821	2.9	2.5	0.03045	2.9	2.9
125	0.03408	3.0	2.6	0.03439	3.0	2.6	0.04257		2.5	0.02641		2.8
130	0.02997	3.1	2.5	0.03020	3.1	2.6	0.03769	3.1	2.4	0.02298	3.1	2.8
135	0.02645		2.5	0.02660		2.5	0.03346		2.4	0.02006		2.7
140	0.02340	3.4	2.4	0.02349	3.4	2.5	0.02979	3.4	2.3	0.01756	3.4	2.6
145	0.02076		2.4	0.02080		2.4	0.02658		2.3	0.01542		2.6
150	0.01847	3.5	2.3	0.01846	3.5	2.4	0.02377	3.5	2.2	0.01358	3.5	2.5

Resistance - Temperature Tables

	CURVE E			CURVE F			CURVE			CURVE H		
B 25/85	4434K			3435K			4390K			4847K		
Temp°C	Typical R_{25}=1K to 200K R_T/R_{25} RATIO			Typical R_{25}=10K R_T/R_{25} RATIO			Typical R_{25}=10K R_T/R_{25} RATIO			Typical R_{25}=1MEG R_T/R_{25} RATIO		
	RATIO	TOL	NTC	RATIO	TOL	NTC	RATIO	TOL	NTC	RATIO	TOL	NTC
-50	89.69	5.0	7.4	32.95		6.2	95.84		8.1			
-45	62.25		7.2	24.77		6.0	65.66		7.8			
-40	43.69	4.2	7.0	18.85		5.8	45.72		7.5			
-35	30.98		6.8	14.41		5.6	32.06		7.2			
-30	22.20	2.9	6.6	11.13		5.4	22.82		7.0			
-25	16.06		6.4	8.643		5.2	16.37		6.7			
-20	11.73	2.7	6.2	6.777		5.0	11.91		6.5	14.65	13.7	6.1
-15	8.644		6.0	5.341		4.8	8.727		6.3	10.51		6.6
-10	6.425	2.1	5.8	4.247		4.7	6.472		6.0	7.607		6.4
-5	4.816		5.7	3.39		4.5	4.834		5.8	5.556	11.7	6.2
0	3.638	1.4	5.5	2.728		4.4	3.65		5.7	4.093		6.0
5	2.770		5.4	2.205		4.2	2.772		5.5	3.041	9.9	5.9
10	2.125	0.9	5.2	1.796		4.1	2.125		5.3	2.277		5.7
15	1.642		5.1	1.469		4.0	1.64		5.1	1.718	8.2	5.6
20	1.277	0.2	5.0	1.209		3.9	1.277		5.0	1.306		5.4
25	1.000	0.0	4.8	1.00		3.7	1.00		4.8	1.00	6.6	5.3
30	0.7881	0.4	4.7	0.8313		3.6	0.7888		4.7	0.7710		5.1
35	0.6250		4.6	0.694		3.5	0.6259		4.5	0.5984	5.2	5.0
37	0.5706		4.5							0.5417		5.0
40	0.4986	0.9	4.5	0.5827		3.4	0.5003		4.4	0.4675		4.9
45	0.4001		4.3	0.4912		3.3	0.402		4.3	0.3675	3.7	4.8
50	0.3228	1.5	4.2	0.4161		3.2	0.3251		4.1	0.2907		4.6
55	0.2619		4.1	0.3536		3.1	0.2642		4.0	0.2312	2.4	4.5
60	0.2136	1.9	4.0	0.302		3.1	0.2161		3.9	0.1850		4.4
65	0.1750		3.9	0.2588		3.0	0.1775		3.8	0.1488	1.1	4.3
70	0.1441	2.4	3.8	0.2228		2.9	0.1466		3.7	0.1204		4.2
75	0.1193		3.7	0.1924		2.8	0.1215		3.6	0.09784	0.0	4.1
80	0.09915	2.7	3.7	0.1668		2.7	0.1013		3.5	0.07993		4.0
85	0.08278		3.6	0.1451		2.7	0.08483		3.4	0.06561	1.0	3.9
90	0.06941	3.2	3.5	0.1266		2.6	0.07135		3.3	0.05411		3.8
95	0.05844		3.4	0.1108		3.0	0.06025		3.3	0.04483	2.1	3.7
100	0.04940	3.6	3.3	0.09731		2.5	0.05111		3.2	0.03730		3.6
105	0.04192		3.2	0.08572		2.4	0.04351		3.1	0.03117	3.1	3.6
110	0.03571	4.0	3.2	0.07576		2.4	0.0372		3.0	0.02615		3.5
115	0.03053		3.1				0.0319		2.9	0.02203	4.0	3.4
120	0.02619	4.4	3.0				0.02746		2.9	0.01863		3.3
125	0.02254	4.5	3.0				0.02371		2.8	0.01581	4.9	3.2
130	0.01947	4.7	2.9							0.01347	5.3	3.2
135	0.01687		2.8							0.01152	5.8	3.1
140	0.01467	5.0	2.8							0.00988	6.6	3.0
145	0.01279		2.7							0.00850		3.0
150	0.01118	5.4	2.7							0.00734	7.3	2.9

Resistance - Temperature Tables

	CURVE J			CURVE K			CURVE P		
B 25/85	5757K			3485K			4144K		
Temp°C	Typical R_{25}=10 to 40MEG R_T/R_{25} RATIO			Typical R_{25}=200 to 2K R_T/R_{25} RATIO			Typical R_{25}=100K R_T/R_{25} RATIO		
	PATIO	TOL	NTC	PATIO	TOL	NTC	PATIO	TOL	NTC
-50				39.18	8.9	6.2			
-45				28.88		6.0			
-40				21.50	6.8	5.8	33.58		6.5
-35				16.18		5.6	24.41		6.3
-30				12.28	5.6	5.4	17.91		6.3
-25				9.415		5.2	13.26		5.9
-20	23.38		7.9	7.278	4.4	5.1	9.898		5.8
-15	15.87		7.7	5.673		4.9	7.452		5.6
-10	10.88		7.8	4.457	3.3	4.7	5.655		5.4
-5	7.530		7.5	3.528		4.6	4.325		5.3
0	5.262		7.1	2.813	2.3	4.5	3.331		5.1
5	3.711	13.2	6.9	2.259		4.3	2.585		5.0
10	2.640		6.7	1.826	1.2	4.2	2.019		4.9
15	1.895	10.9	6.6	1.485		4.1	1.587		4.7
20	1.371		6.4	1.215	0.3	4.0	1.256		4.6
25	1.00	8.7	6.2	1.00	0.0	3.8	1.00		4.5
30	0.7352		6.1	0.8277	0.6	3.7	0.8008		4.4
35	0.5446	6.8	5.9	0.6887		3.6	0.6450		4.3
37	0.4840		5.9	0.6408		3.6	0.5924		4.2
40	0.4064		5.8	0.5760	1.4	3.5	0.5224		4.2
45	0.3054	4.9	5.6	0.4842		3.4	0.4253		4.1
50	0.2311		5.5	0.4089	2.2	3.3	0.3480		4.0
55	0.1761	3.2	5.4	0.3469		3.2	0.2862		3.9
60	0.1351		5.2	0.2956	3.0	3.2	0.2365		3.8
65	0.1042	1.5	5.1	0.2530		3.1	0.1964		3.4
70	0.08094		5.0	0.2174	3.6	3.0	0.1638		3.6
75	0.06323	0.0	4.9	0.1875		2.9	0.1372		3.5
80	0.04968		4.8	0.1623	4.3	2.8	0.1154		3.4
85	0.03926	1.4	4.7	0.1411		2.8	0.09742		3.3
90	0.03119		4.5	0.1230	4.9	2.7	0.08260		3.3
95	0.02491	2.8	4.4	0.1076		2.6	0.07030		3.2
100	0.02		4.3	0.09450	5.5	2.6	0.06005		3.1
105	0.01614	4.1	4.2	0.08322		2.5	0.05148		3.0
110	0.01309		4.1	0.07351	6.1	2.5	0.04429		3.0
115	0.01066	5.2	4.1	0.06512		2.4	0.03823		2.9
120	0.00872		4.0	0.05786	6.7	2.3	0.03310		2.8
125	0.00717	6.4	3.9	0.05154	7.4	2.3	0.02876		2.8
130	0.00592	7.0	3.8				0.02506		2.7
135	0.00491	7.6	3.7				0.02190		2.7
140	0.00409	8.6	3.6				0.01920		2.6
145	0.00342		3.5				0.0168		2.6
150	0.00287	9.6	3.5				0.01487		2.5