



MATERIAL TYPE: C4.9

AVAILABLE PRODUCTS: UD

Data for material type : C4.9

Temp Range (°C)	Ratio	Beta
0 to 50	4.84	2785
0 to 70	8.03	2789
25 to 50	2.07	2805
25 to 85	4.83	2802
25 to 100	6.60	2800
25 to 125	10.63	2806
37.8 to 104.4	4.92	2804

To calculate Rt/R25 at temperatures other than those listed in the table, use the following equation:

$$Rt/R25 = \exp\{A + B/T + C/T^2 + D/T^3\}$$

where T = temperature in K

Temp Range (°C)	A	B	C	D
-50 to 0	-1.1405766 x 10 ⁰¹	4.1280579 x 10 ⁰³	-2.6662686 x 10 ⁰⁵	1.4593159 x 10 ⁰⁷
0 to 50	-1.0594171 x 10 ⁰¹	3.6780544 x 10 ⁰³	-1.9881101 x 10 ⁰⁵	1.3104114 x 10 ⁰⁷
50 to 100	-8.9686238 x 10 ⁰⁰	2.4516716 x 10 ⁰³	8.9687219 x 10 ⁰⁴	-6.9124316 x 10 ⁰⁶
100 to 150	-6.5085593 x 10 ⁰⁰	6.1800395 x 10 ⁰¹	8.1249183 x 10 ⁰⁵	-7.1678513 x 10 ⁰⁷

To calculate the actual thermistor temperature as a function of the thermistor resistance, use the following equation:

$$1/T = a + b(\ln Rt/R25) + c(\ln Rt/R25)^2 + d(\ln Rt/R25)^3$$

Rt/R25 range	a	b	c	d
34.91 to 2.721	3.3546465 x 10 ⁻⁰³	3.0130310 x 10 ⁻⁰⁴	4.8460415 x 10 ⁻⁰⁶	-1.1101738 x 10 ⁻⁰⁷
2.721 to 0.4180	3.3540179 x 10 ⁻⁰³	3.0187589 x 10 ⁻⁰⁴	4.9235531 x 10 ⁻⁰⁶	-1.3337654 x 10 ⁻⁰⁷
0.4180 to 0.10058	3.3535793 x 10 ⁻⁰³	2.9894603 x 10 ⁻⁰⁴	2.1404635 x 10 ⁻⁰⁶	-1.3398852 x 10 ⁻⁰⁷
0.10058 to 0.0327	3.3162517 x 10 ⁻⁰³	2.7499140 x 10 ⁻⁰⁴	-4.7793276 x 10 ⁻⁰⁷	-1.8609802 x 10 ⁻⁰⁷

†The deviation resulting from the tolerance on the material constant, Beta. The deviation must be added to the resistance tolerance of the part as specified at 25°C.

Temperature (°C)	Rt/R25 nominal	Temp Coef (%/°C)	β Deviation† (±%)
-50	21.160000	5.26	10.141194
-45	16.350000	5.06	9.2739508
-40	12.760000	4.87	8.4390717
-35	10.050000	4.69	7.6349492
-30	7.981000	4.53	6.8600744
-25	6.390000	4.37	6.11303
-20	5.155000	4.22	5.3924841
-15	4.189000	4.08	4.6971839
-10	3.427000	3.95	4.0259507
-5	2.822000	3.82	3.377674
0	2.338000	3.69	2.7513076
5	1.951000	3.56	2.2401127
10	1.637000	3.45	1.7081672
15	1.382000	3.34	1.1567408
20	1.173000	3.23	0.5869961
25	1.000000	3.14	0
30	0.857000	3.04	0.6032668
35	0.737800	2.95	1.2219013
40	0.638000	2.87	1.8550705
45	0.554000	2.78	2.5020049
50	0.483000	2.69	3.1619925
55	0.423100	2.61	3.5885937
60	0.372200	2.53	4.0535608
65	0.328600	2.45	4.5550269
70	0.291300	2.38	5.0912796
75	0.259100	2.31	5.660746
80	0.231300	2.24	6.2619791
85	0.207100	2.18	6.8936455
90	0.186000	2.11	7.5545146
95	0.167600	2.06	8.2434492
100	0.151500	2.06	8.959397
105	0.136900	2.00	9.7898237
110	0.124100	1.93	10.59646
115	0.112800	1.87	11.379969
120	0.102900	1.81	12.140995
125	0.094080	1.76	12.880166
130	0.086280	1.70	13.598091
135	0.079340	1.65	14.295365
140	0.073140	1.60	14.972564
145	0.067590	1.55	15.630246
150	0.062610	1.51	16.268958

Crown Industrial Estate, Priorswood Road
 Taunton, Somerset TA2 8QY UK
 Tel +44 (0) 1823 335200
 Fax +44 (0) 1823 332637

808 US Highway 1
 Edison, New Jersey 08817-4695 USA
 Tel +1 (732) 287 2870
 Fax +1 (732) 287 8847

967 Windfall Road
 St. Marys, Pennsylvania 15857-3397 USA
 Tel +1 (814) 834 9140
 Fax +1 (814) 781 7969