

MATERIAL TYPE: D7.7A

AVAILABLE PRODUCTS: UD

Data for material type : D7.7A

Temp Range (°C)	Ratio	Beta
0 to 50	7.29	3507
0 to 70	13.98	3532
25 to 50	2.51	3550
25 to 85	7.52	3592
25 to 100	11.38	3607
25 to 125	21.29	3630
37.8 to 104.4	7.86	3632

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	-1.5206375 x 10 ⁰¹	5.7889976 x 10 ⁰³	-4.5924941 x 10 ⁰⁵	2.5135876 x 10 ⁰⁷
0 to 50	-1.4449340 x 10 ⁰¹	5.4205262 x 10 ⁰³	-4.2581331 x 10 ⁰⁵	2.8066382 x 10 ⁰⁷
50 to 100	-1.4162863 x 10 ⁰¹	5.2865655 x 10 ⁰³	-4.2756250 x 10 ⁰⁵	3.2953375 x 10 ⁰⁷
100 to 150	-1.3952475 x 10 ⁰¹	5.1674237 x 10 ⁰³	-4.2443312 x 10 ⁰⁵	3.7443742 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
43.61 to 2.901	3.3564432 x 10 ⁻⁰³	2.8080731 x 10 ⁻⁰⁴	4.8861133 x 10 ⁻⁰⁶	-9.1110730 x 10 ⁻⁰⁸
2.901 to 0.3980	3.3540173 x 10 ⁻⁰³	2.8479115 x 10 ⁻⁰⁴	3.3033936 x 10 ⁻⁰⁶	-1.0917215 x 10 ⁻⁰⁷
0.3980 to 0.8787	3.3535396 x 10 ⁻⁰³	2.8337474 x 10 ⁻⁰⁴	2.3188232 x 10 ⁻⁰⁶	-1.2348750 x 10 ⁻⁰⁷
0.8787 to 0.0268	3.3498379 x 10 ⁻⁰³	2.7983854 x 10 ⁻⁰⁴	1.4594691 x 10 ⁻⁰⁶	-1.3611407 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	43.610000	6.40	12.527052
-45	31.850000	6.17	11.258603
-40	23.520000	5.96	10.082867
-35	17.560000	5.75	8.9914772
-30	13.230000	5.56	7.9770147
-25	10.070000	5.38	7.0328816
-20	7.726000	5.21	6.1531916
-15	5.979000	5.05	5.3326784
-10	4.664000	4.89	4.5666176
-5	3.666000	4.75	3.85076
0	2.901000	4.60	3.1812742
5	2.314000	4.46	2.4653978
10	1.858000	4.32	1.7922619
15	1.502000	4.19	1.1588008
20	1.222000	4.07	0.562227
25	1.000000	3.95	0
30	0.823100	3.84	0.5301994
35	0.681200	3.73	1.0304926
40	0.566700	3.63	1.5028233
45	0.473800	3.53	1.9489758
50	0.398000	3.44	2.3705903
55	0.336000	3.34	2.7488877
60	0.284900	3.25	3.1148424
65	0.242700	3.17	3.4690669
70	0.207600	3.09	3.8121339
75	0.178200	3.01	4.1445789
80	0.153600	2.93	4.4669039
85	0.132900	2.86	4.7795795
90	0.115400	2.79	5.0830472
95	0.100500	2.73	5.3777223
100	0.087870	2.66	5.6639949
105	0.077060	2.59	5.8774388
110	0.067800	2.53	6.0870284
115	0.059820	2.47	6.2928877
120	0.052940	2.42	6.4951354
125	0.046980	2.36	6.6938844
130	0.041800	2.31	6.8892429
135	0.037290	2.26	7.0813143
140	0.033350	2.21	7.2701974
145	0.029900	2.16	7.4559868
150	0.026870	2.12	7.6387733