



MATERIAL TYPE: D4.1

AVAILABLE PRODUCTS: UD

Data for material type : D4.1

Temp Range (°C)	Ratio	Beta
0 to 50	3.76	2336
0 to 70	5.92	2382
25 to 50	1.87	2412
25 to 85	4.05	2489
25 to 100	5.46	2518
25 to 125	8.65	2561
37.8 to 104.4	4.28	2561

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	-1.3627884 x 10 ⁰¹	6.1924692 x 10 ⁰³	-7.7868359 x 10 ⁰⁵	4.2619313 x 10 ⁰⁷
0 to 50	-1.2539366 x 10 ⁰¹	5.6858472 x 10 ⁰³	-7.4534091 x 10 ⁰⁵	4.9127218 x 10 ⁰⁷
50 to 100	-1.2156863 x 10 ⁰¹	5.5365657 x 10 ⁰³	-7.6824846 x 10 ⁰⁵	5.9210944 x 10 ⁰⁷
100 to 150	-1.2578619 x 10 ⁰¹	6.0543284 x 10 ⁰³	-9.7442113 x 10 ⁰⁵	8.5964012 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
10.18 to 2.008	3.3584858 x 10 ⁻⁰³	4.1494281 x 10 ⁻⁰⁴	2.5907150 x 10 ⁻⁰⁵	1.6433853 x 10 ⁻⁰⁶
2.008 to 0.5347	3.3540200 x 10 ⁻⁰³	4.2661661 x 10 ⁻⁰⁴	1.9408413 x 10 ⁻⁰⁵	1.2586424 x 10 ⁻⁰⁷
0.5347 to 0.18318	3.3523304 x 10 ⁻⁰³	4.2075382 x 10 ⁻⁰⁴	1.4158206 x 10 ⁻⁰⁵	-1.8756492 x 10 ⁻⁰⁷
0.18318 to 0.07590	3.3542891 x 10 ⁻⁰³	4.2155447 x 10 ⁻⁰⁴	1.3985434 x 10 ⁻⁰⁵	-1.6682697 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	10.180000	3.58	19.740862
-45	8.528000	3.50	18.198347
-40	7.171000	3.43	16.680658
-35	6.051000	3.36	15.188756
-30	5.123000	3.30	13.723359
-25	4.351000	3.24	12.284972
-20	3.706000	3.18	10.873925
-15	3.167000	3.12	9.4903947
-10	2.713000	3.06	8.1344299
-5	2.331000	3.01	6.8059724
0	2.008000	2.95	5.5048725
5	1.736000	2.88	4.1192255
10	1.505000	2.82	2.8898441
15	1.309000	2.76	1.8018923
20	1.143000	2.70	0.8424019
25	1.000000	2.64	1.665E-14
30	0.877700	2.58	0.7353199
35	0.772500	2.53	1.3723886
40	0.681600	2.48	1.9190217
45	0.603000	2.43	2.3821556
50	0.534700	2.38	2.7679623
55	0.475400	2.33	3.242275
60	0.423800	2.28	3.7022064
65	0.378700	2.23	4.1484489
70	0.339200	2.18	4.581165
75	0.304500	2.14	5.0024166
80	0.273900	2.09	5.4113178
85	0.247000	2.05	5.8088877
90	0.223100	2.01	6.1956284
95	0.202000	1.97	6.5720121
100	0.183200	1.93	6.9384835
105	0.166500	1.89	7.2011942
110	0.151600	1.86	7.4766638
115	0.138300	1.82	7.7639345
120	0.126400	1.79	8.0621022
125	0.115600	1.76	8.3703144
130	0.106000	1.73	8.6877669
135	0.097290	1.70	9.0137015
140	0.089440	1.67	9.33474038
145	0.082340	1.64	9.6882006
150	0.075900	1.61	10.035458

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