



MATERIAL TYPE: S11.1

AVAILABLE PRODUCTS: UD

Data for material type : S11.1

Temp Range (°C)	Ratio	Beta
0 to 50	10.64	4174
0 to 70	22.81	4187
25 to 50	2.98	4205
25 to 85	10.73	4223
25 to 100	17.33	4231
25 to 125	35.54	4239
37.8 to 104.4	11.12	4243

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	-1.8010356 x 10 ⁰¹	6.7683622 x 10 ⁰³	-5.1272722 x 10 ⁰⁵	2.8062852 x 10 ⁰⁷
0 to 50	-1.5866931 x 10 ⁰¹	5.5033836 x 10 ⁰³	-2.9574941 x 10 ⁰⁵	1.9493557 x 10 ⁰⁷
50 to 100	-1.5366608 x 10 ⁰¹	5.1924158 x 10 ⁰³	-2.4581020 x 10 ⁰⁵	1.8945243 x 10 ⁰⁷
100 to 150	-1.4997245 x 10 ⁰¹	4.9270260 x 10 ⁰³	-1.9308986 x 10 ⁰⁵	1.7034503 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
94.59 to 3.573	3.3584600 x 10 ⁻⁰³	2.3365646 x 10 ⁻⁰⁴	3.1277274 x 10 ⁻⁰⁶	-5.2409093 x 10 ⁻⁰⁸
3.573 to 0.3359	3.3540168 x 10 ⁻⁰³	2.3938569 x 10 ⁻⁰⁴	1.3639909 x 10 ⁻⁰⁶	-4.8779055 x 10 ⁻⁰⁸
0.3359 to 0.05771	3.3544058 x 10 ⁻⁰³	2.3910451 x 10 ⁻⁰⁴	7.7977021 x 10 ⁻⁰⁷	-4.8455338 x 10 ⁻⁰⁸
0.05771 to 0.0148	3.3544523 x 10 ⁻⁰³	2.3784814 x 10 ⁻⁰⁴	3.4338360 x 10 ⁻⁰⁷	-4.5015955 x 10 ⁻⁰⁸

†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	94.590000	7.76	7.8314899
-45	64.630000	7.48	7.1886795
-40	44.780000	7.21	6.57181
-35	31.420000	6.96	5.9792145
-30	22.320000	6.73	5.4093689
-25	16.040000	6.50	4.8608769
-20	11.650000	6.29	4.3324564
-15	8.549000	6.09	3.8229283
-10	6.334000	5.90	3.3312062
-5	4.737000	5.72	2.8562874
0	3.573000	5.53	2.3972447
5	2.724000	5.34	1.8923744
10	2.094000	5.17	1.4008111
15	1.624000	5.01	0.921939
20	1.270000	4.85	0.4551818
25	1.000000	4.70	0
30	0.793400	4.56	0.4441124
35	0.633900	4.42	0.8776306
40	0.509800	4.30	1.301001
45	0.412600	4.17	1.7146439
50	0.335900	4.04	2.1189549
55	0.275300	3.92	2.5230366
60	0.226900	3.81	2.9173675
65	0.188100	3.71	3.3023521
70	0.156700	3.60	3.6783716
75	0.131200	3.51	4.0457857
80	0.110300	3.41	4.4049343
85	0.093230	3.32	4.7561386
90	0.079130	3.24	5.0997026
95	0.067440	3.16	5.4359142
100	0.057710	3.06	5.7650462
105	0.049630	2.98	6.1198331
110	0.042830	2.91	6.462138
115	0.037110	2.84	6.7925271
120	0.032260	2.77	7.1115338
125	0.028140	2.70	7.4196609
130	0.024630	2.64	7.7173828
135	0.021620	2.57	8.0051476
140	0.019040	2.51	8.2833784
145	0.016810	2.46	8.5524756
150	0.014890	2.40	8.8128179

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