



MATERIAL TYPE: D5.9

AVAILABLE PRODUCTS: RL, CL

Data for material type : D5.9

Temp Range (°C)	Ratio	Beta
0 to 50	5.57	3033
0 to 70	9.76	3051
25 to 50	2.22	3069
25 to 85	5.69	3096
25 to 100	8.12	3106
25 to 125	14.06	3138
37.8 to 104.4	5.91	3129

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	-1.3027064 x 10 ⁰¹	4.9265152 x 10 ⁰³	-3.8133096 x 10 ⁰⁵	2.0871203 x 10 ⁰⁷
0 to 50	-1.2341583 x 10 ⁰¹	4.5769595 x 10 ⁰³	-3.4346480 x 10 ⁰⁵	2.2638593 x 10 ⁰⁷
50 to 100	-1.1826636 x 10 ⁰¹	4.2530885 x 10 ⁰³	-2.9221924 x 10 ⁰⁵	2.2522111 x 10 ⁰⁷
100 to 150	-8.8360901 x 10 ⁰⁰	1.3925042 x 10 ⁰³	5.4893887 x 10 ⁰⁵	-4.8427713 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
26.32 to 2.514	3.3560759 x 10 ⁻⁰³	3.2502715 x 10 ⁻⁰⁴	6.2802690 x 10 ⁻⁰⁶	-1.4149610 x 10 ⁻⁰⁷
2.514 to 0.4510	3.3540172 x 10 ⁻⁰³	3.2927261 x 10 ⁻⁰⁴	4.1188325 x 10 ⁻⁰⁶	-1.6472972 x 10 ⁻⁰⁷
0.4510 to 0.12319	3.3538006 x 10 ⁻⁰³	3.276567 x 10 ⁻⁰⁴	2.4256710 x 10 ⁻⁰⁶	-1.7140899 x 10 ⁻⁰⁷
0.12319 to 0.0442	3.3025878 x 10 ⁻⁰³	2.9366723 x 10 ⁻⁰⁴	-4.4370805 x 10 ⁻⁰⁶	6.3232038 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	26.320000	5.56	12.117882
-45	20.040000	5.36	11.160758
-40	15.410000	5.17	10.223131
-35	11.960000	4.99	9.3045451
-30	9.357000	4.82	8.4045406
-25	7.383000	4.66	7.5226559
-20	5.870000	4.51	6.6584311
-15	4.702000	4.37	5.8114104
-10	3.792000	4.24	4.9811438
-5	3.078000	4.11	4.1671882
0	2.514000	3.98	3.3691086
5	2.067000	3.86	2.6907581
10	1.709000	3.74	2.0140813
15	1.422000	3.63	1.3397043
20	1.189000	3.52	0.6681809
25	1.000000	3.42	0
30	0.845000	3.32	0.664408
35	0.717500	3.23	1.3246649
40	0.612000	3.14	1.9804393
45	0.524300	3.05	2.6314425
50	0.451000	2.96	3.2774231
55	0.389800	2.88	3.8040505
60	0.338200	2.80	4.3162316
65	0.294600	2.73	4.8146175
70	0.257500	2.65	5.2998198
75	0.225900	2.58	5.7724132
80	0.198900	2.52	6.2329383
85	0.175600	2.45	6.6819045
90	0.155600	2.39	7.1197916
95	0.138200	2.33	7.5470527
100	0.123200	2.36	7.9641155
105	0.109700	2.29	8.3644583
110	0.097940	2.23	8.7690747
115	0.087760	2.16	9.1774507
120	0.078890	2.10	9.5891079
125	0.071140	2.04	10.003601
130	0.064330	1.98	10.420513
135	0.058340	1.93	10.83946
140	0.053060	1.87	11.260081
145	0.048370	1.82	11.68204
150	0.044210	1.77	12.105027

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