



MATERIAL TYPE: D10.3

AVAILABLE PRODUCTS: RL, MS, SA, NC

Data for material type : D10.3

Temp Range (°C)	Ratio	Beta
0 to 50	9.59	3991
0 to 70	20.05	4015
25 to 50	2.85	4038
25 to 85	9.86	4073
25 to 100	15.70	4085
25 to 125	31.65	4101
37.8 to 104.4	10.29	4106

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	-1.7642468 x 10 ⁰¹	6.8080897 x 10 ⁰³	-5.6629170 x 10 ⁰⁵	3.0994570 x 10 ⁰⁷
0 to 50	-1.6297435 x 10 ⁰¹	6.0647292 x 10 ⁰³	-4.6148486 x 10 ⁰⁵	3.0417580 x 10 ⁰⁷
50 to 100	-1.5174585 x 10 ⁰¹	5.2798047 x 10 ⁰³	-3.0330666 x 10 ⁰⁵	2.3376648 x 10 ⁰⁷
100 to 150	-1.4556547 x 10 ⁰¹	4.7622671 x 10 ⁰³	-1.7495470 x 10 ⁰⁵	1.5434608 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
72.50 to 3.363	3.3564846 x 10 ⁻⁰³	2.4622340 x 10 ⁻⁰⁴	4.0776512 x 10 ⁻⁰⁶	-6.0295285 x 10 ⁻⁰⁸
3.363 to 0.3507	3.3540172 x 10 ⁻⁰³	2.5027462 x 10 ⁻⁰⁴	2.4300527 x 10 ⁻⁰⁶	-7.2909526 x 10 ⁻⁰⁸
0.3507 to 0.06370	3.3530496 x 10 ⁻⁰³	2.4792929 x 10 ⁻⁰⁴	1.0822040 x 10 ⁻⁰⁶	-6.4194339 x 10 ⁻⁰⁸
0.06370 to 0.0169	3.3467185 x 10 ⁻⁰³	2.4342924 x 10 ⁻⁰⁴	3.3465275 x 10 ⁻⁰⁷	-4.5415459 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	72.500000	7.23	5.6578956
-45	50.830000	6.98	5.191183
-40	36.090000	6.74	4.7347723
-35	25.920000	6.51	4.2882739
-30	18.820000	6.30	3.851318
-25	13.800000	6.10	3.4235534
-20	10.230000	5.91	3.0046466
-15	7.646000	5.73	2.5942806
-10	5.767000	5.56	2.1921538
-5	4.386000	5.39	1.7979793
0	3.363000	5.24	1.411484
5	2.599000	5.08	1.1225563
10	2.024000	4.92	0.8369682
15	1.589000	4.77	0.5546976
20	1.256000	4.63	0.2757182
25	1.000000	4.50	2.22E-14
30	0.801300	4.37	0.27249
35	0.646100	4.25	0.5417873
40	0.524100	4.13	0.8079297
45	0.427600	4.02	1.0709566
50	0.350700	3.90	1.3309087
55	0.289400	3.79	1.5667195
60	0.240000	3.69	1.7974035
65	0.200100	3.59	2.0231594
70	0.167700	3.49	2.2441751
75	0.141200	3.40	2.4606282
80	0.119400	3.31	2.6726873
85	0.101400	3.22	2.8805119
90	0.086520	3.14	3.0842534
95	0.074090	3.06	3.2840559
100	0.063700	2.99	3.4800558
105	0.054970	2.91	3.70001014
110	0.047610	2.84	3.8935709
115	0.041390	2.77	4.0618903
120	0.036100	2.70	4.2063853
125	0.031600	2.63	4.3282898
130	0.027740	2.57	4.4287536
135	0.024430	2.51	4.5088491
140	0.021580	2.45	4.5695782
145	0.019120	2.40	4.6118773
150	0.016980	2.34	4.636623

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