



MATERIAL TYPE: D8.7

AVAILABLE PRODUCTS: MS

Data for material type : D8.7

Temp Range (°C)	Ratio	Beta
0 to 50	8.14	3701
0 to 70	16.10	3721
25 to 50	2.64	3743
25 to 85	8.34	3775
25 to 100	12.87	3790
25 to 125	24.73	3808
37.8 to 104.4	8.70	3811

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	-1.5730366 x 10 ⁰¹	5.8928896 x 10 ⁰³	-4.4024166 x 10 ⁰⁵	2.4095534 x 10 ⁰⁷
0 to 50	-1.4998209 x 10 ⁰¹	5.5416556 x 10 ⁰³	-4.0953952 x 10 ⁰⁵	2.6993738 x 10 ⁰⁷
50 to 100	-1.4933035 x 10 ⁰¹	5.6076362 x 10 ⁰³	-4.6505048 x 10 ⁰⁵	3.5842673 x 10 ⁰⁷
100 to 150	-1.4661462 x 10 ⁰¹	5.4760877 x 10 ⁰³	-4.6848196 x 10 ⁰⁵	4.1329758 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
54.87 to 3.081	3.3565515 x 10 ⁻⁰³	2.6618072 x 10 ⁻⁰⁴	3.9701350 x 10 ⁻⁰⁶	-7.7284120 x 10 ⁻⁰⁸
3.081 to 0.3786	3.3540172 x 10 ⁻⁰³	2.6987348 x 10 ⁻⁰⁴	2.7040810 x 10 ⁻⁰⁶	-8.9868499 x 10 ⁻⁰⁸
0.3786 to 0.07767	3.3551874 x 10 ⁻⁰³	2.7060402 x 10 ⁻⁰⁴	2.1971300 x 10 ⁻⁰⁶	-1.0897057 x 10 ⁻⁰⁷
0.07767 to 0.0225	3.3561850 x 10 ⁻⁰³	2.6916079 x 10 ⁻⁰⁴	1.4411373 x 10 ⁻⁰⁶	-1.2399931 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	54.870000	6.83	9.6277428
-45	39.250000	6.58	8.6774616
-40	28.420000	6.34	7.7765901
-35	20.820000	6.12	6.9214403
-30	15.410000	5.91	6.1086792
-25	11.520000	5.72	5.3352872
-20	8.701000	5.53	4.5985226
-15	6.629000	5.35	3.8958904
-10	5.094000	5.19	3.2251151
-5	3.946000	5.03	2.5841178
0	3.081000	4.86	1.9709948
5	2.425000	4.71	1.5618156
10	1.924000	4.56	1.160373
15	1.536000	4.43	0.7664148
20	1.236000	4.29	0.3797005
25	1.000000	4.17	0
30	0.814300	4.05	0.3729067
35	0.667000	3.94	0.73923
40	0.549400	3.83	1.0991714
45	0.454900	3.72	1.4529238
50	0.378600	3.60	1.8006721
55	0.317000	3.50	2.1066525
60	0.266700	3.41	2.3907887
65	0.225400	3.32	2.6543632
70	0.191300	3.24	2.8985643
75	0.163100	3.15	3.1244943
80	0.139600	3.08	3.3331772
85	0.119900	3.00	3.5255656
90	0.103400	2.93	3.7025463
95	0.089460	2.86	3.8649461
100	0.077670	2.77	4.0135365
105	0.067740	2.70	4.2688619
110	0.059270	2.64	4.4920077
115	0.052020	2.58	4.6847307
120	0.045800	2.52	4.8486593
125	0.040430	2.46	4.9853045
130	0.035800	2.41	5.0960705
135	0.031780	2.36	5.1822635
140	0.028280	2.31	5.2451001
145	0.025230	2.26	5.2857149
150	0.022570	2.21	5.3051669

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