



# MATERIAL TYPE: C5.7

## AVAILABLE PRODUCTS: NC

Data for material type : C5.7

Temp Range (°C)	Ratio	Beta
0 to 50	5.62	3047
0 to 70	9.78	3053
25 to 50	2.21	3048
25 to 85	5.57	3058
25 to 100	7.85	3056
25 to 125	13.28	3070
37.8 to 104.4	5.69	3064

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	-1.1627802 x 10 <sup>01</sup>	3.9904064 x 10 <sup>03</sup>	-1.9091905 x 10 <sup>05</sup>	1.0449480 x 10 <sup>07</sup>
0 to 50	-1.0307436 x 10 <sup>01</sup>	3.1097967 x 10 <sup>03</sup>	-1.4022545 x 10 <sup>04</sup>	9.2425978 x 10 <sup>05</sup>
50 to 100	-9.6660960 x 10 <sup>00</sup>	2.5614402 x 10 <sup>03</sup>	1.3009453 x 10 <sup>05</sup>	-1.0026730 x 10 <sup>07</sup>
100 to 150	-8.8936352 x 10 <sup>00</sup>	1.6865838 x 10 <sup>03</sup>	4.2185371 x 10 <sup>05</sup>	-3.7216186 x 10 <sup>07</sup>

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
28.81 to 2.547	3.3532173 x 10 <sup>-03</sup>	3.2639468 x 10 <sup>-04</sup>	3.0960252 x 10 <sup>-06</sup>	-1.0052753 x 10 <sup>-07</sup>
2.547 to 0.4534	3.3540164 x 10 <sup>-03</sup>	3.2819973 x 10 <sup>-04</sup>	1.6696922 x 10 <sup>-07</sup>	-1.0597078 x 10 <sup>-08</sup>
0.4534 to 0.12740	3.3507339 x 10 <sup>-03</sup>	3.2307254 x 10 <sup>-04</sup>	-9.5844469 x 10 <sup>-07</sup>	1.282681 x 10 <sup>-07</sup>
0.12740 to 0.0476	3.3230437 x 10 <sup>-03</sup>	3.0870430 x 10 <sup>-04</sup>	-5.6092402 x 10 <sup>-07</sup>	5.4002720 x 10 <sup>-07</sup>

†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	28.810000	5.84	8.1061211
-45	21.640000	5.61	7.5301468
-40	16.440000	5.39	6.956206
-35	12.620000	5.18	6.3843721
-30	9.788000	4.99	5.8147061
-25	7.662000	4.81	5.2472587
-20	6.051000	4.64	4.6820708
-15	4.818000	4.48	4.1191756
-10	3.867000	4.32	3.5585989
-5	3.127000	4.18	3.0003605
0	2.547000	4.08	2.4444745
5	2.085000	3.94	1.9651901
10	1.718000	3.80	1.4807377
15	1.426000	3.67	0.9914951
20	1.190000	3.55	0.4978094
25	1.000000	3.43	0
30	0.844900	3.32	0.5016389
35	0.717700	3.21	1.0068358
40	0.612800	3.11	1.5153399
45	0.525900	3.01	2.0269191
50	0.453400	2.95	2.5413584
55	0.392200	2.86	2.9658607
60	0.340800	2.77	3.3832004
65	0.297400	2.68	3.793611
70	0.260600	2.60	4.197315
75	0.229200	2.53	4.5945248
80	0.202400	2.45	4.9854434
85	0.179400	2.38	5.3702643
90	0.159500	2.31	5.7491728
95	0.142300	2.25	6.1223462
100	0.127400	2.26	6.489954
105	0.114000	2.19	6.8459723
110	0.102300	2.13	7.2089656
115	0.092110	2.07	7.5786114
120	0.083170	2.01	7.9546068
125	0.075310	1.96	8.3366673
130	0.068390	1.90	8.7245255
135	0.062260	1.85	9.1179295
140	0.056830	1.80	9.5166422
145	0.052000	1.75	9.9204399
150	0.047690	1.71	10.329112

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