



# MATERIAL TYPE: GE14.5

## AVAILABLE PRODUCTS: GE, MELF

Data for material type : GE14.5

Temp Range (°C)	Ratio	Beta
0 to 50	12.76	4496
0 to 70	29.88	4549
25 to 50	3.28	4572
25 to 85	13.72	4661
25 to 100	23.54	4686
25 to 125	53.54	4725
37.8 to 104.4	14.68	4731

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

where K = °C + 273.15

Temp Range (°C)	A	B	C	D
-50 to 0	-2.2177988 x 10 <sup>01</sup>	9.1575573 x 10 <sup>03</sup>	-9.3191899 x 10 <sup>05</sup>	-1.3880345 x 10 <sup>07</sup>
0 to 50	-1.9805892 x 10 <sup>01</sup>	7.8621859 x 10 <sup>03</sup>	-7.4910117 x 10 <sup>05</sup>	-5.2664526 x 10 <sup>07</sup>
50 to 100	-1.8339252 x 10 <sup>01</sup>	6.7884079 x 10 <sup>03</sup>	-5.2852854 x 10 <sup>05</sup>	-5.3949863 x 10 <sup>07</sup>
100 to 150	-1.8977964 x 10 <sup>01</sup>	7.4369478 x 10 <sup>03</sup>	-7.4948347 x 10 <sup>05</sup>	-6.9222727 x 10 <sup>07</sup>
150 to 200	-1.7925826 x 10 <sup>01</sup>	6.4619012 x 10 <sup>03</sup>	-4.8243223 x 10 <sup>05</sup>	-5.9100648 x 10 <sup>07</sup>
200 to 250	-1.5768620 x 10 <sup>01</sup>	3.8838275 x 10 <sup>03</sup>	4.6414982 x 10 <sup>05</sup>	8.7712773 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
113.88 to 3.897	3.3592719 x 10 <sup>-03</sup>	2.1564885 x 10 <sup>-04</sup>	4.5656157 x 10 <sup>-06</sup>	-1.3880345 x 10 <sup>-08</sup>
3.897 to 0.3053	3.3540179 x 10 <sup>-03</sup>	2.2204920 x 10 <sup>-04</sup>	2.7527009 x 10 <sup>-06</sup>	-5.2664526 x 10 <sup>-08</sup>
0.3053 to 0.04247	3.3496256 x 10 <sup>-03</sup>	2.1660258 x 10 <sup>-04</sup>	1.2808777 x 10 <sup>-06</sup>	-5.3949863 x 10 <sup>-08</sup>
0.04247 to 0.00895	3.3492548 x 10 <sup>-03</sup>	2.1663634 x 10 <sup>-04</sup>	1.2804732 x 10 <sup>-06</sup>	-6.9222727 x 10 <sup>-08</sup>
0.00895 to 0.00255	3.3289141 x 10 <sup>-03</sup>	2.0756436 x 10 <sup>-04</sup>	3.1913746 x 10 <sup>-07</sup>	-5.9100648 x 10 <sup>-08</sup>
0.002552 to 0.000906	3.2537031 x 10 <sup>-03</sup>	1.9118407 x 10 <sup>-04</sup>	5.6198639 x 10 <sup>-07</sup>	8.7712773 x 10 <sup>-08</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	113.877970	7.791223	8.5856354
-45	77.620000	7.55	8.8263779
-40	53.530000	7.32	8.8413915
-35	37.330000	7.11	8.6493443
-30	26.300000	6.90	8.2679714
-25	18.720000	6.71	7.7140464
-20	13.440000	6.53	7.003372
-15	9.743000	6.36	6.1507845
-10	7.121000	6.19	5.1701704
5	5.247000	6.03	4.074492
0	3.897000	5.85	2.875818
5	2.922000	5.68	2.059818
10	2.209000	5.51	1.3736727
15	1.683000	5.36	0.8074356
20	1.293000	5.21	0.3522064
25	1.000000	5.07	0
30	0.779000	4.93	0.2563657
35	0.610700	4.80	0.4233659
40	0.481800	4.68	0.5068519
45	0.382400	4.56	0.5121232
50	0.305300	4.49	0.4439891
55	0.244700	4.37	0.8198646
60	0.197300	4.25	1.2411041
65	0.160000	4.14	1.7044098
70	0.130400	4.03	2.2066757
75	0.106900	3.93	2.7449778
80	0.088100	3.83	3.3165644
85	0.072900	3.73	3.9188472
90	0.060600	3.64	4.5493923
95	0.050600	3.56	5.2059121
100	0.042500	3.48	5.8862569
105	0.035770	3.40	6.2814138
110	0.030240	3.32	6.6490992
115	0.025660	3.25	6.9907472
120	0.021850	3.17	7.3076975
125	0.018680	3.11	7.6012031
130	0.016020	3.04	7.8724366
135	0.013780	2.97	8.1224971
140	0.011900	2.91	8.3524153
145	0.010300	2.85	8.5631588
150	0.008950	2.78	8.7556369
155	0.007800	2.72	8.9058736
160	0.006810	2.67	9.0386504
165	0.005970	2.61	9.1547671
170	0.005250	2.56	9.2549774
175	0.004620	2.50	9.3339992
180	0.004090	2.45	9.4104817
185	0.003620	2.40	9.46708
190	0.003210	2.35	9.5103856
195	0.002860	2.31	9.5409649
200	0.002550	2.30	9.5593541
205	0.002280	2.25	9.564029
210	0.002040	2.20	9.5560027
215	0.001830	2.16	9.5357926
220	0.001640	2.11	9.5038889
225	0.001479	2.07	9.4607573
230	0.001335	2.02	9.4068397
235	0.001208	1.98	9.3425559
240	0.001095	1.94	9.2683051
245	0.000995	1.90	9.184467
250	0.000906	1.86	9.091403

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