



MATERIAL TYPE: GE13.8

AVAILABLE PRODUCTS: GE, MELF

Data for material type : GE13.8

Temp Range (°C)	Ratio	Beta
0 to 50	12.32	4433
0 to 70	28.28	4475
25 to 50	3.21	4495
25 to 85	13.01	4567
25 to 100	22.07	4590
25 to 125	49.35	4628
37.8 to 104.4	13.85	4629

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	-2.0002778 X 10 ⁰¹	7.9229687 X 10 ⁰³	-7.1456195 X 10 ⁰⁵	3.9109774 X 10 ⁰⁷
0 to 50	-1.8664289 X 10 ⁰¹	7.1354666 X 10 ⁰³	-6.0121836 X 10 ⁰⁵	3.9627752 X 10 ⁰⁷
50 to 100	-1.8095550 X 10 ⁰¹	6.7717935 X 10 ⁰³	-5.5214888 X 10 ⁰⁵	4.2555577 X 10 ⁰⁷
100 to 150	-1.7769778 X 10 ⁰¹	6.5199396 X 10 ⁰³	-5.1010720 X 10 ⁰⁵	4.5009720 X 10 ⁰⁷
150 to 200	-1.8484383 X 10 ⁰¹	7.3366133 X 10 ⁰³	-8.1203507 X 10 ⁰⁵	8.0684086 X 10 ⁰⁷
200 to 250	-2.0632006 X 10 ⁰¹	1.0098506 X 10 ⁰⁴	-1.9146315 X 10 ⁰⁶	2.1155599 X 10 ⁰⁸

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
106.93 to 3.838	3.3524799 X 10 ⁻⁰³	2.2418142 X 10 ⁻⁰⁴	3.9189675 X 10 ⁻⁰⁶	-4.0628387 X 10 ⁻⁰⁸
3.838 to 0.3115	3.3540175 X 10 ⁻⁰³	2.2523349 X 10 ⁻⁰⁴	2.3067055 X 10 ⁻⁰⁶	-5.5423595 X 10 ⁻⁰⁸
0.3115 to 0.04531	3.3515290 X 10 ⁻⁰³	2.2210032 X 10 ⁻⁰⁴	1.4446035 X 10 ⁻⁰⁶	-5.9746101 X 10 ⁻⁰⁸
0.04531 to 0.00989	3.3419987 X 10 ⁻⁰³	2.1708651 X 10 ⁻⁰⁴	8.1361630 X 10 ⁻⁰⁷	-6.1692679 X 10 ⁻⁰⁸
0.00989 to 0.00290	3.3515507 X 10 ⁻⁰³	2.2014409 X 10 ⁻⁰⁴	9.1101962 X 10 ⁻⁰⁷	-8.6974030 X 10 ⁻⁰⁸
0.002897 to 0.001063	3.4792744 X 10 ⁻⁰³	2.5815133 X 10 ⁻⁰⁴	3.7287422 X 10 ⁻⁰⁶	-7.7750262 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	106.930000	7.78	8.1151896
-45	72.950000	7.52	8.3427408
-40	50.410000	7.27	8.3569317
-35	35.250000	7.04	8.1754076
-30	24.935000	6.82	7.8149318
-25	17.827000	6.61	7.2913589
-20	12.875000	6.41	6.6196256
-15	9.388000	6.23	5.8137552
-10	6.908000	6.05	4.8868734
5	5.128000	5.88	3.8512321
0	3.838000	5.80	2.7182389
5	2.885000	5.62	1.9469513
10	2.187000	5.45	1.2984029
15	1.672000	5.29	0.7631925
20	1.288000	5.14	0.03329074
25	1.000000	5.00	0
30	0.781700	4.86	0.2423182
35	0.615300	4.72	0.4001677
40	0.487400	4.60	0.4790792
45	0.388500	4.48	0.4840616
50	0.311500	4.38	0.4196609
55	0.250900	4.27	0.7749405
60	0.203300	4.15	1.1730984
65	0.165700	4.04	1.6110175
70	0.135700	3.94	2.085762
75	0.111700	3.84	2.5945681
80	0.092400	3.74	3.1348349
85	0.076800	3.65	3.7041158
90	0.064200	3.56	4.3001105
95	0.053800	3.48	4.9206566
100	0.045300	3.42	5.5637222
105	0.038300	3.33	5.9372268
110	0.032500	3.25	6.284765
115	0.027640	3.18	6.6076926
120	0.023620	3.11	6.9072757
125	0.020260	3.03	7.1846988
130	0.017440	2.97	7.4410702
135	0.015060	2.90	7.6774288
140	0.013050	2.84	7.8947487
145	0.011340	2.78	8.0939446
150	0.009890	2.71	8.2758759
155	0.008650	2.65	8.4178805
160	0.007580	2.60	8.5433818
165	0.006670	2.55	8.653136
170	0.005880	2.50	8.7478554
175	0.005190	2.45	8.8282117
180	0.004600	2.40	8.8948389
185	0.004080	2.36	8.9483358
190	0.003630	2.31	8.9892685
195	0.003240	2.27	9.0181723
200	0.002900	2.16	9.0355539
205	0.002600	2.13	9.0399726
210	0.002340	2.10	9.0323862
215	0.002110	2.06	9.0132834
220	0.001910	2.03	8.9831279
225	0.001720	2.00	8.9423597
230	0.001560	1.97	8.8913964
235	0.001410	1.94	8.830635
240	0.001280	1.92	8.7604528
245	0.001170	1.89	8.6812086
250	0.001060	1.86	8.593244

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