



# MATERIAL TYPE: GE9.8

AVAILABLE PRODUCTS: GE, MELF

Data for material type : GE9.8

Temp Range (°C)	Ratio	Beta
0 to 50	8.87	3853
0 to 70	18.27	3890
25 to 50	2.76	3919
25 to 85	9.33	3974
25 to 100	14.73	3991
25 to 125	29.69	4025
37.8 to 104.4	9.82	4024

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	-1.7216050 x 10 <sup>01</sup>	6.6521646 x 10 <sup>03</sup>	-5.5720733 x 10 <sup>05</sup>	3.0497360 x 10 <sup>07</sup>
0 to 50	-1.6989044 x 10 <sup>01</sup>	6.7481462 x 10 <sup>03</sup>	-6.4414735 x 10 <sup>05</sup>	4.2457306 x 10 <sup>07</sup>
50 to 100	-1.5240237 x 10 <sup>01</sup>	5.4851612 x 10 <sup>03</sup>	-3.7721668 x 10 <sup>05</sup>	2.9073089 x 10 <sup>07</sup>
100 to 150	-1.5085926 x 10 <sup>01</sup>	5.3190919 x 10 <sup>03</sup>	-3.3894888 x 10 <sup>05</sup>	2.9899445 x 10 <sup>07</sup>
150 to 200	-1.4862806 x 10 <sup>01</sup>	5.1171612 x 10 <sup>03</sup>	-2.9116173 x 10 <sup>05</sup>	2.8929930 x 10 <sup>07</sup>
200 to 250	-1.5659947 x 10 <sup>01</sup>	6.0539638 x 10 <sup>03</sup>	-6.4556941 x 10 <sup>05</sup>	7.1331780 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
63.37 to 3.208	3.3598762 x 10 <sup>-03</sup>	2.5331093 x 10 <sup>-04</sup>	4.3624975 x 10 <sup>-06</sup>	-6.5218367 x 10 <sup>-08</sup>
3.208 to 0.3617	3.3540180 x 10 <sup>-03</sup>	2.5906474 x 10 <sup>-04</sup>	3.7590571 x 10 <sup>-06</sup>	-8.3564087 x 10 <sup>-08</sup>
0.3617 to 0.06787	3.3513696 x 10 <sup>-03</sup>	2.5412290 x 10 <sup>-04</sup>	1.4640197 x 10 <sup>-06</sup>	-7.9966960 x 10 <sup>-08</sup>
0.06787 to 0.01806	3.3371935 x 10 <sup>-03</sup>	2.4694595 x 10 <sup>-04</sup>	7.6080734 x 10 <sup>-07</sup>	-7.7811267 x 10 <sup>-08</sup>
0.01806 to 0.00625	3.3267162 x 10 <sup>-03</sup>	2.4219874 x 10 <sup>-04</sup>	2.3930960 x 10 <sup>-07</sup>	-7.5096557 x 10 <sup>-08</sup>
0.00625 to 0.002610	3.3440574 x 10 <sup>-03</sup>	2.4766783 x 10 <sup>-04</sup>	3.0055101 x 10 <sup>-07</sup>	-1.4270547 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	63.370000	7.02	8.9621801
-45	44.890000	6.78	8.1762247
-40	32.180000	6.54	7.4133024
-35	23.330000	6.32	6.6722521
-30	17.100000	6.12	5.9519946
-25	12.650000	5.92	5.2515254
-20	9.455000	5.74	4.5699908
-15	7.128000	5.57	3.9062679
-10	5.419000	5.40	3.2597878
5	4.154000	5.24	2.6297022
0	3.208000	5.01	2.0152938
5	2.507000	4.86	1.5746264
10	1.972000	4.72	1.1539316
15	1.563000	4.59	0.7519946
20	1.246000	4.46	0.3676955
25	1.000000	4.34	0
30	0.807200	4.23	0.3520485
35	0.655200	4.12	0.689336
40	0.534800	4.01	1.012684
45	0.438700	3.91	1.3228556
50	0.361700	3.82	1.6205602
55	0.299700	3.71	1.9330747
60	0.249500	3.61	2.227981
65	0.208800	3.51	2.5062746
70	0.175600	3.42	2.7688805
75	0.148300	3.33	3.0166591
80	0.125800	3.25	3.250412
85	0.107200	3.16	3.4708866
90	0.091700	3.09	3.6787806
95	0.078700	3.01	3.874746
100	0.067870	2.98	4.0593929
105	0.058590	2.91	4.1527077
110	0.050760	2.83	4.2475235
115	0.044130	2.77	4.3437222
120	0.038490	2.70	4.4411935
125	0.033680	2.64	4.5398341
130	0.029560	2.58	4.6395467
135	0.026030	2.52	4.7402407
140	0.022980	2.46	4.8418306
145	0.020340	2.41	4.9442364
150	0.018060	2.36	5.0473829
155	0.016070	2.31	5.1511996
160	0.014340	2.26	5.2556204
165	0.012820	2.21	5.3605828
170	0.011500	2.16	5.4660285
175	0.010330	2.12	5.5719024
180	0.009300	2.07	5.678153
185	0.008400	2.03	5.7847317
190	0.007590	1.99	5.8915928
195	0.006880	1.95	5.9986934
200	0.006250	1.91	6.1059931
205	0.005690	1.88	6.2134539
210	0.005180	1.84	6.3210402
215	0.004730	1.81	6.4287182
220	0.004324	1.77	6.5364565
225	0.003960	1.74	6.6442253
230	0.003632	1.71	6.7519966
235	0.003337	1.68	6.8597442
240	0.003070	1.65	6.9674432
245	0.002829	1.62	7.0750705
250	0.002610	1.60	7.1826042

Crown Industrial Estate, Priorswood Road  
Taunton, Somerset TA2 8QY UK  
Tel +44 (0) 1823 335200  
Fax +44 (0) 1823 332637

808 US Highway 1  
Edison, New Jersey 08817-4695 USA  
Tel +1 (732) 287 2870  
Fax +1 (732) 287 8847

967 Windfall Road  
St. Marys, Pennsylvania 15857-3397 USA  
Tel +1 (814) 834 9140  
Fax +1 (814) 781 7969