Material Type D12.2 – Available Products: RL, MS, NC

Data for material type: D12.2

Temp Range (°C)	Ratio	Beta
0 to 50	11.07	4244
0 to 70	24.44	4280
25 to 50	3.06	4312
25 to 85	11.62	4365
25 to 100	19.19	4383
25 to 125	41.30	4417
37.8 to 104.4	12.27	4416

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	-17.9032	6807.2315	-534786.0116	29243936.7753
0 to 50	-18.4129	7218.8125	-661700.0718	43587525.0237
50 to 100	-16.8748	6144.3277	-446701.5369	34413129.4755
100 to 150	-16.5310	5835.3271	-375889.3264	33149943.3428

To calculate the actual thermistor temperature as a function of the thermistor resistance, use the following equation:

$I/T=a+b(\text{Ln } Rt/R25)+c(\text{Ln } Rt/R25)^2+d(\text{Ln } Rt/R25)^3$

Rt/R25 range	a	b	c	d
89.49 to 3.615	0.003350539	0.00023721	3.45389E-06	-5.56669E-08
3.615 to 0.3266	0.003354016	0.000235234	2.89669E-06	-6.37989E-08
0.3266 to 0.05210	0.003352513	0.000232132	1.32555E-06	-6.35511E-08
0.05210 to 0.0122	0.003340135	0.000225903	6.45321E-07	-6.01247E-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.

Temp. (°C)	Rt/R25 nominal	Temp Coef ∝(%/°C)	β Deviation† (±%)
-50	89.487974	7.584477	3.104220
-45	61.677375	7.311903	2.948754
-40	43.074823	7.055488	2.779829
-35	30.459399	6.813939	2.598797
-30	21.792639	6.586090	2.406887
-25	15.765342	6.370891	2.205209
-20	11.524927	6.167389	1.994775
-15	8.508831	5.974724	1.776500
-10	6.341211	5.792111	1.551218
-5	4.767983	5.618839	1.319689
0	3.615448	5.531678	1.082602
5	2.753489	5.366898	0.863603
10	2.113935	5.210206	0.645768
15	1.635377	5.061065	0.429178
20	1.274393	4.918982	0.213902
25	1.000000	4.783504	0.000000
30	0.789894	4.654216	0.212476
35	0.627886	4.530734	0.423482
40	0.502125	4.412702	0.632982
45	0.403877	4.299795	0.840943
50	0.326651	4.183978	1.047340
55	0.265773	4.068904	1.206399
60	0.217460	3.958803	1.369181
65	0.178890	3.853387	1.535362
70	0.147922	3.752390	1.704639
75	0.122921	3.655564	1.876734
80	0.102631	3.562679	2.051386
85	0.086081	3.473521	2.228353
90	0.072515	3.387889	2.407411
95	0.061345	3.305597	2.588350
100	0.052104	3.257404	2.770975
105	0.044364	3.177374	2.943675
110	0.037922	3.100385	3.112593
115	0.032537	3.026284	3.277867
120	0.028019	2.954925	3.439630
125	0.024213	2.886174	3.598009
130	0.020995	2.819905	3.753124
135	0.018264	2.755996	3.905087
140	0.015938	2.694337	4.054009
145	0.013950	2.634822	4.199992
150	0.012246	2.577351	4.343134