



NTC RT Calculation | Vishay

Ordering Code = NTCS0402E3103JHT
B(25/85) [K] = 3950
B(0/100) [K] = 3936
B(25/50) [K] = 3944
B(25/75) [K] = undefined
B(25/100) [K] = 3950

R at 25 °C = 10000 Ω
R Tol at 25 °C = 5

T [°C]	R nom [Ω]	R min [Ω]	R max [Ω]	Δ R/R [±%]	Δ T [±°C]	α [%/K]
-55	1027883.93	817190.2	1238577.7	20.50	2.77	-7.39
-54	954854.70	761646.9	1148062.5	20.23	2.75	-7.35
-53	887403.40	710161.5	1064645.3	19.97	2.74	-7.30
-52	825078.97	662420.5	987737.5	19.71	2.72	-7.26
-51	767468.48	618135.8	916801.2	19.46	2.69	-7.22
-50	714193.82	577042.5	851345.1	19.20	2.68	-7.17
-49	664908.63	538896.8	790920.5	18.95	2.66	-7.13
-48	619295.59	503474.4	735116.8	18.70	2.64	-7.08
-47	577063.83	470568.9	683558.8	18.45	2.62	-7.04
-46	537946.70	439990.1	635903.3	18.21	2.60	-7.00
-45	501699.63	411563.2	591836.1	17.97	2.59	-6.95
-44	468098.27	385126.9	551069.7	17.73	2.57	-6.91
-43	436936.70	360532.7	513340.7	17.49	2.55	-6.87
-42	408025.90	337643.7	478408.1	17.25	2.53	-6.82
-41	381192.28	316333.8	446050.8	17.01	2.51	-6.78
-40	356276.38	296486.6	416066.2	16.78	2.49	-6.74
-39	333131.65	277994.9	388268.4	16.55	2.47	-6.70
-38	311623.37	260759.5	362487.2	16.32	2.45	-6.65
-37	291627.66	244689.3	338566.0	16.10	2.43	-6.61
-36	273030.54	229699.7	316361.4	15.87	2.42	-6.57
-35	255727.14	215712.9	295741.3	15.65	2.40	-6.53
-34	239620.90	202657.0	276584.8	15.43	2.38	-6.48
-33	224622.91	190465.4	258780.4	15.21	2.36	-6.44
-32	210651.26	179076.7	242225.8	14.99	2.34	-6.40
-31	197630.44	168434.0	226826.9	14.77	2.32	-6.36
-30	185490.87	158484.8	212497.0	14.56	2.30	-6.32
-29	174168.35	149180.4	199156.3	14.35	2.28	-6.28
-28	163603.67	140475.8	186731.5	14.14	2.27	-6.24
-27	153742.17	132329.4	175154.9	13.93	2.25	-6.20
-26	144533.39	124702.6	164364.2	13.72	2.23	-6.16
-25	135930.73	117559.5	154301.9	13.52	2.21	-6.12
-24	127891.12	110867.1	144915.1	13.31	2.19	-6.08
-23	120374.76	104594.6	136154.9	13.11	2.17	-6.04
-22	113344.85	98713.6	127976.1	12.91	2.15	-6.00
-21	106767.34	93197.6	120337.1	12.71	2.13	-5.96
-20	100610.74	88022.1	113199.4	12.51	2.11	-5.92

T [°C]	R nom [Ω]	R min [Ω]	R max [Ω]	Δ R/R [±%]	Δ T [±°C]	α [%/K]
-19	94845.89	83164.3	106527.5	12.32	2.09	-5.88
-18	89445.79	78603.1	100288.5	12.12	2.08	-5.84
-17	84385.44	74318.8	94452.0	11.93	2.06	-5.80
-16	79641.64	70293.3	88990.0	11.74	2.03	-5.77
-15	75192.93	66509.5	83876.4	11.55	2.02	-5.73
-14	71019.37	62951.7	79087.1	11.36	2.00	-5.69
-13	67102.49	59605.1	74599.8	11.17	1.98	-5.65
-12	63425.12	56456.3	70394.0	10.99	1.96	-5.62
-11	59971.35	53492.4	66450.3	10.80	1.94	-5.58
-10	56726.39	50701.6	62751.2	10.62	1.92	-5.54
-9	53676.49	48072.9	59280.1	10.44	1.89	-5.51
-8	50808.90	45596.1	56021.7	10.26	1.88	-5.47
-7	48111.72	43261.5	52961.9	10.08	1.85	-5.44
-6	45573.94	41060.3	50087.5	9.90	1.83	-5.40
-5	43185.27	38984.2	47386.3	9.73	1.81	-5.37
-4	40936.15	37025.3	44847.0	9.55	1.79	-5.33
-3	38817.68	35176.5	42458.8	9.38	1.77	-5.30
-2	36821.58	33431.0	40212.2	9.21	1.75	-5.26
-1	34940.11	31782.4	38097.8	9.04	1.73	-5.23
0	33166.09	30225.0	36107.2	8.87	1.71	-5.19
1	31492.79	28753.0	34232.5	8.70	1.69	-5.16
2	29913.97	27361.5	32466.4	8.53	1.66	-5.13
3	28423.77	26045.6	30801.9	8.37	1.64	-5.09
4	27016.76	24800.8	29232.7	8.20	1.62	-5.06
5	25687.83	23622.9	27752.8	8.04	1.60	-5.03
6	24432.25	22507.9	26356.6	7.88	1.58	-5.00
7	23245.56	21452.1	25039.0	7.72	1.56	-4.96
8	22123.62	20452.1	23795.1	7.56	1.53	-4.93
9	21062.54	19504.7	22620.4	7.40	1.51	-4.90
10	20058.71	18606.7	21510.7	7.24	1.49	-4.87
11	19108.73	17755.4	20462.0	7.08	1.46	-4.84
12	18209.41	16948.1	19470.7	6.93	1.44	-4.81
13	17357.80	16182.3	18533.3	6.77	1.42	-4.77
14	16551.09	15455.6	17646.6	6.62	1.40	-4.74
15	15786.69	14765.8	16807.6	6.47	1.37	-4.71
16	15062.15	14110.9	16013.4	6.32	1.35	-4.68
17	14375.18	13488.9	15261.4	6.17	1.33	-4.65
18	13723.63	12898.0	14549.3	6.02	1.30	-4.62
19	13105.49	12336.5	13874.5	5.87	1.28	-4.59
20	12518.86	11802.7	13235.0	5.72	1.25	-4.56
21	11961.97	11295.1	12628.8	5.57	1.23	-4.54
22	11433.16	10812.4	12053.9	5.43	1.20	-4.51
23	10930.86	10353.1	11508.6	5.29	1.18	-4.48
24	10453.60	9916.1	10991.1	5.14	1.16	-4.45

T [°C]	R nom [Ω]	R min [Ω]	R max [Ω]	Δ R/R [±%]	Δ T [±°C]	α [%/K]
25	10000.00	9500.0	10500.0	5.00	1.13	-4.42
26	9568.76	9076.8	10060.7	5.14	1.17	-4.39
27	9158.67	8674.9	9642.4	5.28	1.21	-4.37
28	8768.57	8293.2	9243.9	5.42	1.25	-4.34
29	8397.38	7930.5	8864.2	5.56	1.29	-4.31
30	8044.09	7585.8	8502.4	5.70	1.33	-4.28
31	7707.74	7258.1	8157.4	5.83	1.37	-4.26
32	7387.43	6946.4	7828.4	5.97	1.41	-4.23
33	7082.31	6650.0	7514.6	6.10	1.45	-4.20
34	6791.58	6367.9	7215.3	6.24	1.49	-4.18
35	6514.48	6099.4	6929.5	6.37	1.54	-4.15
36	6250.31	5843.8	6656.8	6.50	1.57	-4.13
37	5998.39	5600.4	6396.4	6.64	1.62	-4.10
38	5758.09	5368.5	6147.7	6.77	1.66	-4.08
39	5528.82	5147.6	5910.1	6.90	1.70	-4.05
40	5310.01	4937.0	5683.0	7.02	1.74	-4.03
41	5101.13	4736.3	5466.0	7.15	1.79	-4.00
42	4901.68	4544.9	5258.5	7.28	1.83	-3.98
43	4711.19	4362.3	5060.1	7.41	1.87	-3.95
44	4529.19	4188.1	4870.3	7.53	1.92	-3.93
45	4355.28	4021.8	4688.7	7.66	1.96	-3.90
46	4189.06	3863.1	4515.0	7.78	2.01	-3.88
47	4030.13	3711.6	4348.7	7.90	2.05	-3.86
48	3878.15	3566.9	4189.4	8.03	2.10	-3.83
49	3732.77	3428.6	4036.9	8.15	2.14	-3.81
50	3593.67	3296.5	3890.8	8.27	2.18	-3.79
51	3460.56	3170.2	3750.9	8.39	2.23	-3.76
52	3333.14	3049.5	3616.8	8.51	2.28	-3.74
53	3211.13	2934.1	3488.2	8.63	2.32	-3.72
54	3094.29	2823.7	3364.9	8.75	2.36	-3.70
55	2982.37	2718.0	3246.7	8.86	2.42	-3.67
56	2875.13	2616.9	3133.3	8.98	2.46	-3.65
57	2772.36	2520.2	3024.5	9.10	2.51	-3.63
58	2673.84	2427.5	2920.1	9.21	2.55	-3.61
59	2579.38	2338.8	2819.9	9.33	2.60	-3.59
60	2488.79	2253.9	2723.7	9.44	2.65	-3.56
61	2401.90	2172.4	2631.4	9.55	2.70	-3.54
62	2318.53	2094.4	2542.6	9.67	2.75	-3.52
63	2238.52	2019.7	2457.4	9.78	2.79	-3.50
64	2161.72	1948.0	2375.5	9.89	2.84	-3.48
65	2087.99	1879.2	2296.8	10.00	2.89	-3.46
66	2017.19	1813.3	2221.1	10.11	2.94	-3.44
67	1949.18	1750.0	2148.3	10.22	2.99	-3.42
68	1883.85	1689.3	2078.4	10.33	3.04	-3.40

T [°C]	R nom [Ω]	R min [Ω]	R max [Ω]	Δ R/R [±%]	Δ T [±°C]	α [%/K]
69	1821.07	1631.0	2011.1	10.43	3.09	-3.38
70	1760.73	1575.1	1946.3	10.54	3.14	-3.36
71	1702.73	1521.4	1884.0	10.65	3.19	-3.34
72	1646.95	1469.8	1824.1	10.75	3.24	-3.32
73	1593.32	1420.3	1766.4	10.86	3.29	-3.30
74	1541.73	1372.7	1710.8	10.97	3.34	-3.28
75	1492.09	1326.9	1657.3	11.07	3.40	-3.26
76	1444.33	1283.0	1605.7	11.17	3.45	-3.24
77	1398.36	1240.7	1556.0	11.28	3.49	-3.23
78	1354.10	1200.0	1508.2	11.38	3.54	-3.21
79	1311.49	1160.9	1462.1	11.48	3.60	-3.19
80	1270.45	1123.3	1417.6	11.58	3.65	-3.17
81	1230.92	1087.1	1374.7	11.68	3.71	-3.15
82	1192.83	1052.3	1333.4	11.78	3.76	-3.13
83	1156.14	1018.8	1293.5	11.88	3.81	-3.12
84	1120.77	986.5	1255.1	11.98	3.86	-3.10
85	1086.67	955.4	1217.9	12.08	3.92	-3.08
86	1053.80	925.5	1182.1	12.18	3.98	-3.06
87	1022.10	896.6	1147.6	12.28	4.02	-3.05
88	991.52	868.8	1114.2	12.37	4.08	-3.03
89	962.03	842.1	1082.0	12.47	4.14	-3.01
90	933.57	816.3	1050.9	12.56	4.20	-2.99
91	906.10	791.4	1020.8	12.66	4.25	-2.98
92	879.59	767.4	991.8	12.75	4.31	-2.96
93	854.00	744.3	963.7	12.85	4.37	-2.94
94	829.29	722.0	936.6	12.94	4.42	-2.93
95	805.43	700.4	910.4	13.04	4.48	-2.91
96	782.38	679.7	885.1	13.13	4.53	-2.90
97	760.11	659.6	860.6	13.22	4.59	-2.88
98	738.60	640.3	836.9	13.31	4.65	-2.86
99	717.81	621.6	814.0	13.40	4.70	-2.85
100	697.71	603.6	791.9	13.49	4.77	-2.83
101	678.28	586.1	770.4	13.58	4.82	-2.82
102	659.50	569.3	749.7	13.67	4.88	-2.80
103	641.33	553.1	729.6	13.76	4.93	-2.79
104	623.77	537.4	710.2	13.85	5.00	-2.77
105	606.77	522.2	691.4	13.94	5.07	-2.75
106	590.33	507.5	673.1	14.03	5.12	-2.74
107	574.42	493.3	655.5	14.12	5.19	-2.72
108	559.02	479.6	638.4	14.20	5.24	-2.71
109	544.11	466.4	621.9	14.29	5.29	-2.70
110	529.68	453.5	605.8	14.38	5.36	-2.68
111	515.71	441.1	590.3	14.46	5.42	-2.67
112	502.17	429.1	575.2	14.55	5.49	-2.65

T [°C]	R nom [Ω]	R min [Ω]	R max [Ω]	Δ R/R [±%]	Δ T [±°C]	α [%/K]
113	489.07	417.5	560.6	14.63	5.54	-2.64
114	476.37	406.3	546.5	14.72	5.62	-2.62
115	464.07	395.4	532.7	14.80	5.67	-2.61
116	452.15	384.9	519.4	14.88	5.72	-2.60
117	440.59	374.7	506.5	14.97	5.80	-2.58
118	429.39	364.8	494.0	15.05	5.86	-2.57
119	418.54	355.2	481.9	15.13	5.93	-2.55
120	408.01	345.9	470.1	15.21	5.99	-2.54
121	397.80	337.0	458.6	15.29	6.04	-2.53
122	387.90	328.3	447.5	15.37	6.13	-2.51
123	378.29	319.8	436.8	15.45	6.18	-2.50
124	368.98	311.7	426.3	15.53	6.24	-2.49
125	359.94	303.7	416.1	15.61	6.32	-2.47
126	351.16	296.1	406.3	15.69	6.38	-2.46
127	342.65	288.6	396.7	15.77	6.44	-2.45
128	334.38	281.4	387.4	15.85	6.50	-2.44
129	326.36	274.4	378.3	15.93	6.58	-2.42
130	318.56	267.6	369.6	16.01	6.64	-2.41
131	311.00	261.0	361.0	16.08	6.70	-2.40
132	303.65	254.6	352.7	16.16	6.76	-2.39
133	296.51	248.4	344.7	16.24	6.85	-2.37
134	289.57	242.3	336.8	16.31	6.91	-2.36
135	282.83	236.5	329.2	16.39	6.97	-2.35
136	276.29	230.8	321.8	16.47	7.04	-2.34
137	269.92	225.3	314.6	16.54	7.13	-2.32
138	263.74	219.9	307.6	16.61	7.19	-2.31
139	257.72	214.7	300.7	16.69	7.26	-2.30
140	251.88	209.7	294.1	16.76	7.32	-2.29
141	246.19	204.7	287.6	16.84	7.38	-2.28
142	240.66	200.0	281.4	16.91	7.45	-2.27
143	235.28	195.3	275.2	16.98	7.55	-2.25
144	230.05	190.8	269.3	17.06	7.61	-2.24
145	224.96	186.4	263.5	17.13	7.68	-2.23
146	220.01	182.2	257.9	17.20	7.75	-2.22
147	215.19	178.0	252.4	17.27	7.82	-2.21
148	210.50	174.0	247.0	17.34	7.88	-2.20
149	205.94	170.1	241.8	17.41	7.95	-2.19
150	201.49	166.3	236.7	17.48	8.02	-2.18

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