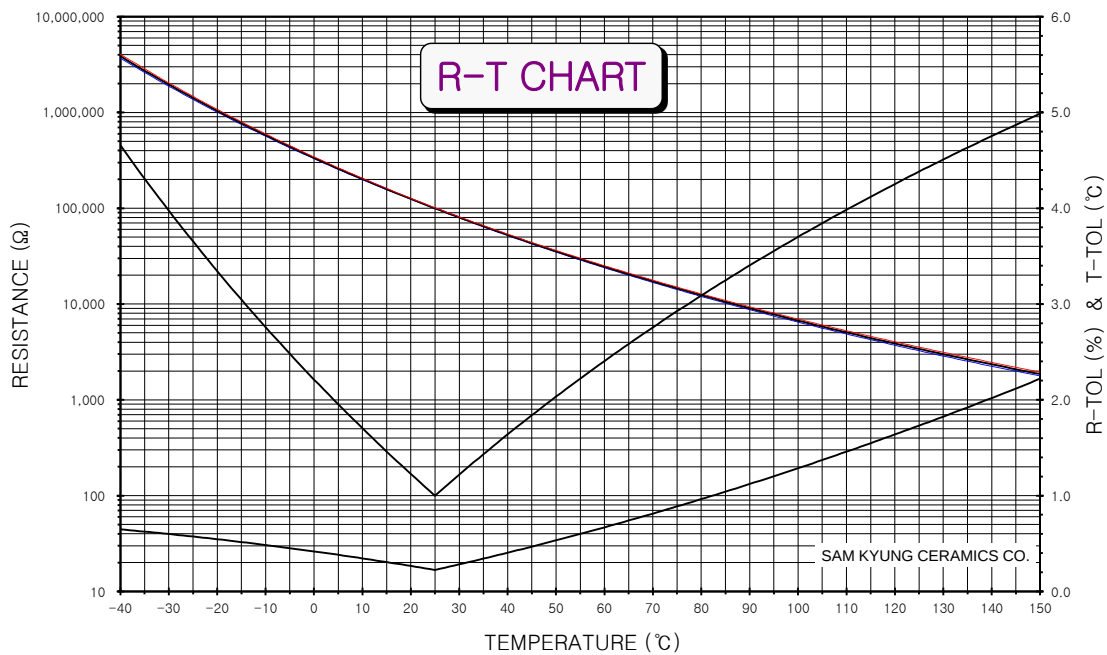


R-T Characteristics & Tolerance

Part Name **NTC THERMISTOR**
 Customer
 Part No. **NTC-104F400F**
 Usage / Remark
 Recorder **M.J KIM**

Center-Temp / R-Value **25.0°C/100.00kΩ**
 R-Tolerance of Center-Temp **1.00%**
 Test Conditon **Un Loaded**
 β -Range **25/85**
 β -Value **4000K**
 β -Tolerance **1.00%**



L : 0.0°C=336,177.00Ω
 M : 25.0°C=100,000.00Ω
 H : 85.0°C=10,567.00Ω

TEMP. (°C)	RESISTANCE (Ω)			RESIST.-TOL. (%)		TEMP.-TOL. (°C)	
	MIN	CENTER	MAX	MAX	MIN	MAX	MIN
-40	3687973.38	3863872.71	4047756.8	4.76	4.55	0.66	0.63
-39	3439653.62	3601172.75	3769899.5	4.69	4.49	0.66	0.63
-38	3209797.85	3358176.53	3513062.9	4.61	4.42	0.65	0.62
-37	2996912.44	3133277.42	3275519.7	4.54	4.35	0.65	0.62
-36	2799633.80	2925009.67	3055694.6	4.47	4.29	0.64	0.62
-35	2616716.28	2732035.29	2852151.2	4.40	4.22	0.64	0.61
-34	2447021.32	2553132.13	2663577.9	4.33	4.16	0.63	0.61
-33	2289507.56	2387183.18	2488777.0	4.26	4.09	0.63	0.60
-32	2143222.04	2233166.91	2326653.8	4.19	4.03	0.62	0.60
-31	2007292.13	2090148.58	2176207.5	4.12	3.96	0.62	0.59
-30	1880918.32	1957272.32	2036522.2	4.05	3.90	0.61	0.59
-29	1763367.65	1833754.05	1906759.3	3.98	3.84	0.61	0.58
-28	1653967.83	1718875.05	1786150.8	3.91	3.78	0.60	0.58
-27	1552101.82	1611976.11	1673992.7	3.85	3.71	0.59	0.57
-26	1457203.01	1512452.28	1569639.3	3.78	3.65	0.59	0.57
-25	1368750.77	1419748.09	1472498.2	3.72	3.59	0.58	0.56
-24	1286266.50	1333353.23	1382025.5	3.65	3.53	0.58	0.56
-23	1209309.99	1252798.60	1297721.3	3.59	3.47	0.57	0.55
-22	1137476.09	1177652.76	1219126.6	3.52	3.41	0.57	0.55
-21	1070391.75	1107518.70	1145818.8	3.46	3.35	0.56	0.54
-20	1007713.30	1042030.91	1077409.5	3.40	3.29	0.55	0.54
-19	949123.95	980852.66	1013540.7	3.33	3.23	0.55	0.53

TEMP. (°C)	RESISTANCE (Ω)			RESIST.-TOL. (%)		TEMP.-TOL. (°C)	
	MIN	CENTER	MAX	MAX	MIN	MAX	MIN
-18	894331.54	923673.62	953883.0	3.27	3.18	0.54	0.53
-17	843066.51	870207.60	898132.6	3.21	3.12	0.54	0.52
-16	795080.01	820190.60	846009.6	3.15	3.06	0.53	0.51
-15	750142.17	773378.89	797255.7	3.09	3.00	0.52	0.51
-14	708040.61	729547.38	751632.3	3.03	2.95	0.52	0.50
-13	668578.93	688488.13	708919.3	2.97	2.89	0.51	0.50
-12	631575.50	650008.85	668913.3	2.91	2.84	0.50	0.49
-11	596862.21	613931.74	631426.3	2.85	2.78	0.50	0.48
-10	564283.42	580092.26	596284.4	2.79	2.73	0.49	0.48
-9	533694.97	548338.07	563326.6	2.73	2.67	0.48	0.47
-8	504963.23	518528.08	532404.1	2.68	2.62	0.48	0.47
-7	477964.32	490531.56	503378.9	2.62	2.56	0.47	0.46
-6	452583.33	464227.29	476123.2	2.56	2.51	0.46	0.45
-5	428713.62	439502.86	450518.6	2.51	2.45	0.46	0.45
-4	406256.17	416253.94	426455.1	2.45	2.40	0.45	0.44
-3	385119.02	394383.71	403830.9	2.40	2.35	0.44	0.43
-2	365216.70	373802.20	382551.3	2.34	2.30	0.44	0.43
-1	346469.77	354425.86	362528.4	2.29	2.24	0.43	0.42
0	328804.32	336177.00	343680.6	2.23	2.19	0.42	0.41
1	312151.59	318983.37	325932.1	2.18	2.14	0.41	0.41
2	296447.58	302777.75	309212.2	2.13	2.09	0.41	0.40
3	281632.69	287497.59	293455.3	2.07	2.04	0.40	0.39
4	267651.37	273084.62	278600.3	2.02	1.99	0.39	0.39
5	254451.87	259484.59	264590.4	1.97	1.94	0.39	0.38
6	241985.94	246646.92	251372.5	1.92	1.89	0.38	0.37
7	230208.54	234524.45	238897.4	1.86	1.84	0.37	0.37
8	219077.68	223073.21	227118.9	1.81	1.79	0.36	0.36
9	208554.14	212252.17	215994.2	1.76	1.74	0.35	0.35
10	198601.28	202023.02	205483.2	1.71	1.69	0.35	0.34
11	189184.90	192350.00	195548.5	1.66	1.65	0.34	0.34
12	180273.00	183199.69	186155.3	1.61	1.60	0.33	0.33
13	171835.69	174540.87	177270.9	1.56	1.55	0.32	0.32
14	163844.99	166344.35	168864.9	1.52	1.50	0.32	0.31
15	156274.74	158582.82	160908.9	1.47	1.46	0.31	0.31
16	149100.43	151230.74	153376.2	1.42	1.41	0.30	0.30
17	142299.12	144264.21	146241.8	1.37	1.36	0.29	0.29
18	135849.32	137660.83	139482.5	1.32	1.32	0.28	0.28
19	129730.89	131399.63	133076.5	1.28	1.27	0.27	0.27
20	123924.97	125460.99	127003.3	1.23	1.22	0.27	0.27
21	118413.83	119826.47	121243.8	1.18	1.18	0.26	0.26
22	113180.88	114478.81	115780.1	1.14	1.13	0.25	0.25
23	108210.53	109401.83	110595.2	1.09	1.09	0.24	0.24
24	103488.15	104580.31	105673.4	1.05	1.04	0.23	0.23
25	99000.00	100000.00	101000.0	1.00	1.00	0.22	0.22
26	94648.90	95647.50	96647.0	1.04	1.04	0.24	0.24
27	90514.79	91510.24	92507.4	1.09	1.09	0.25	0.25
28	86585.68	87576.38	88569.6	1.13	1.13	0.26	0.26
29	82850.27	83834.83	84822.6	1.18	1.17	0.27	0.27
30	79297.95	80275.12	81256.2	1.22	1.22	0.28	0.28
31	75918.78	76887.45	77860.7	1.27	1.26	0.29	0.29
32	72703.35	73662.56	74626.9	1.31	1.30	0.31	0.31
33	69642.87	70591.74	71546.4	1.35	1.34	0.32	0.32
34	66729.02	67666.82	68610.9	1.40	1.39	0.33	0.33
35	63953.99	64880.08	65813.0	1.44	1.43	0.34	0.34
36	61310.43	62224.24	63145.4	1.48	1.47	0.36	0.35
37	58791.41	59692.46	60601.3	1.52	1.51	0.37	0.37
38	56390.39	57278.29	58174.3	1.56	1.55	0.38	0.38
39	54101.22	54975.63	55858.6	1.61	1.59	0.39	0.39
40	51918.10	52778.74	53648.3	1.65	1.63	0.41	0.40
41	49835.56	50682.21	51538.1	1.69	1.67	0.42	0.41
42	47848.42	48680.93	49523.0	1.73	1.71	0.43	0.43
43	45951.82	46770.05	47598.1	1.77	1.75	0.44	0.44
44	44141.16	44945.04	45759.0	1.81	1.79	0.46	0.45
45	42412.09	43201.57	44001.3	1.85	1.83	0.47	0.46
46	40760.52	41535.58	42321.1	1.89	1.87	0.48	0.48
47	39182.56	39943.23	40714.6	1.93	1.90	0.50	0.49
48	37674.55	38420.87	39178.1	1.97	1.94	0.51	0.50
49	36233.03	36965.07	37708.1	2.01	1.98	0.52	0.52
50	34854.73	35572.58	36301.6	2.05	2.02	0.54	0.53
51	33536.54	34240.31	34955.4	2.09	2.06	0.55	0.54
52	32275.54	32965.35	33666.5	2.13	2.09	0.56	0.56

TEMP. (℃)	RESISTANCE (Ω)			RESIST.-TOL. (%)		TEMP.-TOL. (℃)	
	MIN	CENTER	MAX	MAX	MIN	MAX	MIN
53	31068.95	31744.95	32432.4	2.17	2.13	0.58	0.57
54	29914.15	30576.49	31250.4	2.20	2.17	0.59	0.58
55	28808.65	29457.49	30117.9	2.24	2.20	0.61	0.60
56	27750.09	28385.61	29032.8	2.28	2.24	0.62	0.61
57	26736.24	27358.62	27992.7	2.32	2.27	0.63	0.62
58	25765.00	26374.43	26995.6	2.36	2.31	0.65	0.64
59	24834.35	25431.03	26039.4	2.39	2.35	0.66	0.65
60	23942.39	24526.52	25122.4	2.43	2.38	0.68	0.66
61	23087.32	23659.11	24242.6	2.47	2.42	0.69	0.68
62	22267.43	22827.08	23398.5	2.50	2.45	0.70	0.69
63	21481.10	22028.83	22588.3	2.54	2.49	0.72	0.70
64	20726.78	21262.80	21810.5	2.58	2.52	0.73	0.72
65	20003.02	20527.54	21063.7	2.61	2.56	0.75	0.73
66	19308.42	19821.67	20346.5	2.65	2.59	0.76	0.75
67	18641.67	19143.85	19657.6	2.68	2.62	0.78	0.76
68	18001.51	18492.85	18995.7	2.72	2.66	0.79	0.77
69	17386.75	17867.45	18359.6	2.75	2.69	0.81	0.79
70	16796.26	17266.54	17748.2	2.79	2.72	0.82	0.80
71	16228.96	16689.04	17160.4	2.82	2.76	0.84	0.82
72	15683.83	16133.91	16595.2	2.86	2.79	0.85	0.83
73	15159.89	15600.18	16051.7	2.89	2.82	0.87	0.85
74	14656.22	15086.93	15528.7	2.93	2.85	0.88	0.86
75	14171.94	14593.27	15025.6	2.96	2.89	0.90	0.88
76	13706.20	14118.35	14541.44	3.00	2.92	0.91	0.89
77	13258.20	13661.38	14075.40	3.03	2.95	0.93	0.91
78	12827.19	13221.58	13626.74	3.06	2.98	0.95	0.92
79	12412.44	12798.24	13194.72	3.10	3.01	0.96	0.94
80	12013.25	12390.66	12778.65	3.13	3.05	0.98	0.95
81	11628.98	11998.17	12377.85	3.16	3.08	0.99	0.97
82	11258.98	11620.15	11991.71	3.20	3.11	1.01	0.98
83	10902.67	11255.99	11619.61	3.23	3.14	1.02	1.00
84	10559.47	10905.13	11260.97	3.26	3.17	1.04	1.01
85	10228.84	10567.00	10915.25	3.30	3.20	1.06	1.03
86	9910.26	10241.09	10581.91	3.33	3.23	1.07	1.04
87	9603.23	9926.91	10260.47	3.36	3.26	1.09	1.06
88	9307.28	9623.96	9950.43	3.39	3.29	1.11	1.07
89	9021.95	9331.81	9651.34	3.42	3.32	1.12	1.09
90	8746.83	9050.01	9362.76	3.46	3.35	1.14	1.10
91	8481.49	8778.14	9084.27	3.49	3.38	1.16	1.12
92	8225.54	8515.83	8815.48	3.52	3.41	1.17	1.14
93	7978.60	8262.67	8556.00	3.55	3.44	1.19	1.15
94	7740.32	8018.32	8305.46	3.58	3.47	1.21	1.17
95	7510.36	7782.41	8063.52	3.61	3.50	1.22	1.18
96	7288.38	7554.64	7829.84	3.64	3.52	1.24	1.20
97	7074.07	7334.67	7604.10	3.67	3.55	1.26	1.22
98	6867.13	7122.20	7386.00	3.70	3.58	1.27	1.23
99	6667.28	6916.94	7175.24	3.73	3.61	1.29	1.25
100	6474.23	6718.62	6971.54	3.76	3.64	1.31	1.26
101	6287.73	6526.97	6774.64	3.79	3.67	1.33	1.28
102	6107.53	6341.74	6584.27	3.82	3.69	1.34	1.30
103	5933.38	6162.67	6400.19	3.85	3.72	1.36	1.31
104	5765.05	5989.54	6222.16	3.88	3.75	1.38	1.33
105	5602.32	5822.13	6049.96	3.91	3.78	1.40	1.35
106	5444.99	5660.22	5883.37	3.94	3.80	1.41	1.36
107	5292.84	5503.60	5722.18	3.97	3.83	1.43	1.38
108	5145.68	5352.08	5566.20	4.00	3.86	1.45	1.40
109	5003.34	5205.47	5415.23	4.03	3.88	1.47	1.41
110	4865.62	5063.59	5269.08	4.06	3.91	1.49	1.43
111	4732.36	4926.26	5127.59	4.09	3.94	1.50	1.45
112	4603.39	4793.32	4990.59	4.12	3.96	1.52	1.47
113	4478.56	4664.61	4857.90	4.14	3.99	1.54	1.48
114	4357.72	4539.98	4729.38	4.17	4.01	1.56	1.50
115	4240.72	4419.27	4604.88	4.20	4.04	1.58	1.52
116	4127.42	4302.35	4484.26	4.23	4.07	1.60	1.54
117	4017.69	4189.09	4367.37	4.26	4.09	1.61	1.55
118	3911.39	4079.35	4254.08	4.28	4.12	1.63	1.57
119	3808.42	3973.00	4144.28	4.31	4.14	1.65	1.59
120	3708.65	3869.93	4037.83	4.34	4.17	1.67	1.61
121	3611.96	3770.03	3934.62	4.37	4.19	1.69	1.62
122	3518.26	3673.18	3834.53	4.39	4.22	1.71	1.64
123	3427.42	3579.27	3737.47	4.42	4.24	1.73	1.66

TEMP. (°C)	RESISTANCE (Ω)			RESIST.-TOL. (%)		TEMP.-TOL. (°C)	
	MIN	CENTER	MAX	MAX	MIN	MAX	MIN
124	3339.36	3488.20	3643.32	4.45	4.27	1.75	1.68
125	3253.97	3399.88	3551.98	4.47	4.29	1.77	1.69
126	3171.17	3314.21	3463.36	4.50	4.32	1.79	1.71
127	3090.86	3231.10	3377.37	4.53	4.34	1.81	1.73
128	3012.96	3150.47	3293.92	4.55	4.36	1.82	1.75
129	2937.39	3072.22	3212.91	4.58	4.39	1.84	1.77
130	2864.06	2996.28	3134.28	4.61	4.41	1.86	1.79
131	2792.91	2922.56	3057.93	4.63	4.44	1.88	1.80
132	2723.85	2851.01	2983.80	4.66	4.46	1.90	1.82
133	2656.82	2781.53	2911.81	4.68	4.48	1.92	1.84
134	2591.74	2714.07	2841.88	4.71	4.51	1.94	1.86
135	2528.56	2648.55	2773.96	4.73	4.53	1.96	1.88
136	2467.21	2584.92	2707.97	4.76	4.55	1.98	1.90
137	2407.63	2523.11	2643.86	4.79	4.58	2.00	1.92
138	2349.76	2463.05	2581.55	4.81	4.60	2.02	1.94
139	2293.55	2404.71	2521.00	4.84	4.62	2.04	1.95
140	2238.93	2348.00	2462.14	4.86	4.65	2.06	1.97
141	2185.87	2292.90	2404.93	4.89	4.67	2.09	1.99
142	2134.30	2239.33	2349.30	4.91	4.69	2.11	2.01
143	2084.18	2187.26	2295.22	4.94	4.71	2.13	2.03
144	2035.47	2136.64	2242.62	4.96	4.74	2.15	2.05
145	1988.11	2087.41	2191.46	4.98	4.76	2.17	2.07
146	1942.07	2039.55	2141.70	5.01	4.78	2.19	2.09
147	1897.30	1992.99	2093.30	5.03	4.80	2.21	2.11
148	1853.76	1947.70	2046.20	5.06	4.82	2.23	2.13
149	1811.41	1903.65	2000.38	5.08	4.85	2.25	2.15
150	1770.22	1860.79	1955.78	5.11	4.87	2.27	2.17