



Approval Sheet

Manufacturer:

Customer:

汎翊國際有限公司

Approved By:	Checked By:	Prepared By :

Approved By:	Examined By:	Tested By :

Company Stamp	
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Company Stamp	
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Approval No. : A616-055

Product : NTC THERMISTOR

Part No : ESTA4104F4100F-3005021SC

Specifications : R25 100,000 Ω $\pm$ 1 %

B25/85 4100 K $\pm$ 1 %

Date : 2018/12/11

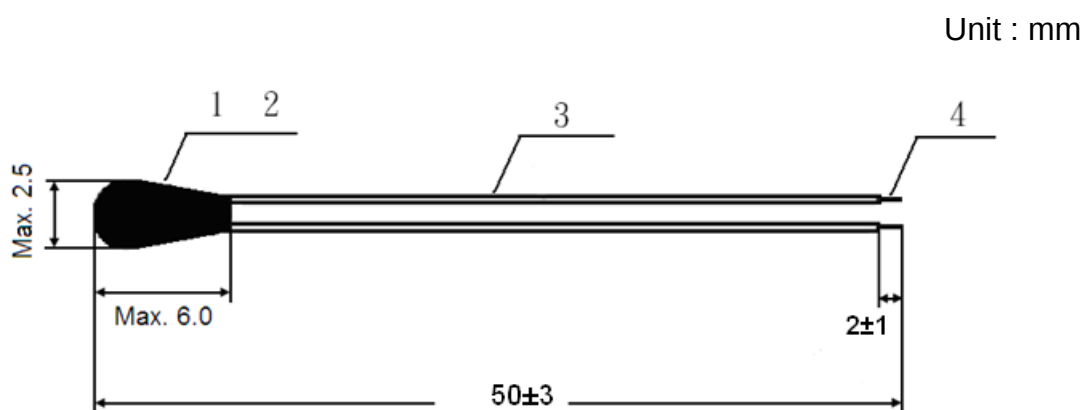
FLYiNG

◆ **PART NO. :** ESTA4104F4100F-3005021SC

◆ **FEATURES**

- Low cost
- High stability
- Small size and fast thermal response

◆ **SHAPE & DIMENSIONS**



No.	Part Name	Materials	Remark
1	NTC Thermistor	Metal Oxide	---
2	Coating	Epoxy	Color : Black
3	Lead Wire	HF Wire	UL3302 30AWG Color : Black
4	End	Soldered Terminal	---

◆ **ELECTRICAL CHARACTERISTICS**

Style	Symbol	Condition	Specification
Resistance at Ta	R	Ta = 25 °C	100 K Ω ± 1 %
B Constant	B	25 °C / 85 °C	4100 K ± 1 %
Thermal Time Constant	C	Ta = 25 °C	15 sec
Thermal Dissipation Constant	T	Ta = 25 °C	2.5 mW/°C
Operating Temp. Range	--	--	- 30 °C ~ 105 °C

◆ **RELIABILITY TEST**

Performance	Test Method	$\Delta R_{25} / R_{25}$
Resistance to Soldering Heat	Soldering $260 \pm 5^\circ\text{C}$ for 10 sec	Max. $\pm 3\%$
Humidity	$45 \pm 2^\circ\text{C}$, 95 % RH x 1000 hours	Max. $\pm 3\%$
Thermal shock	$(-30^\circ\text{C} \times 30\text{min} \rightarrow 100^\circ\text{C} \times 30\text{min}) \times 10$ times	Max. $\pm 3\%$
High temperature storage	$100 \pm 3^\circ\text{C} \times 1000$ hours	Max. $\pm 3\%$
Low temperature storage	$-30 \pm 3^\circ\text{C} \times 1000$ hours	Max. $\pm 3\%$

◆ **STORAGE CONDITIONS**

1. Storage Temperature : $-10^\circ\text{C} \sim +40^\circ\text{C}$.
2. Relative humidity : 30 ~ 75 % RH.
3. Thermistor must be kept away from sunshine and stored in a non-corrosive atmosphere.
4. Period of Storage : 1 year.

◆ **ORDERING INFORMATION**

ES TA4 104 F 4100 F - 30 050 21 S C
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

1. E WAY Sensor.
2. TA4 series Thermistor.
3. Resistance at 25°C : $104 = 10 \times 10^4 = 100,000 (\Omega)$.
4. Tolerance of R : F: $\pm 1\%$; G: $\pm 2\%$; H: $\pm 3\%$; J: $\pm 5\%$; K: $\pm 10\%$.
5. B value (K).
6. Tolerance of B : F: $\pm 1\%$; G: $\pm 2\%$; H: $\pm 3\%$; J: $\pm 5\%$.
7. Wire Gauge : 30 = 30 AWG.
8. Length (All) : 050 = 50 mm.
9. Solder Length & Tolerance : 21 = 2 ± 1 mm.
10. Wire Type : S = Separate ; C = Connect ; D = Differ.
11. Wire UL Type : C = UL3302 HF.

Resistance-Temperature CharacteristicsPart No. : ESTA4104F4100F-3005021SC

R25 :	<u>100,000</u>	Ω	$\pm$	<u>1%</u>
B25/85 :	<u>4100</u>	K	$\pm$	<u>1%</u>

Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tol. (%)		Temp. Tol. (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-30	1910790	1988673	2069523	-6.54	-3.92	4.07	-0.62	0.60
-29	1791488	1863294	1937785	-6.49	-3.85	4.00	-0.62	0.59
-28	1680433	1746659	1815313	-6.44	-3.79	3.93	-0.61	0.59
-27	1577004	1638102	1701397	-6.39	-3.73	3.86	-0.60	0.58
-26	1480628	1537013	1595386	-6.35	-3.67	3.80	-0.60	0.58
-25	1390780	1442831	1496680	-6.30	-3.61	3.73	-0.59	0.57
-24	1306978	1355041	1404732	-6.25	-3.55	3.67	-0.59	0.57
-23	1228776	1273170	1319036	-6.21	-3.49	3.60	-0.58	0.56
-22	1155765	1196781	1239128	-6.17	-3.43	3.54	-0.57	0.56
-21	1087569	1125473	1164582	-6.12	-3.37	3.47	-0.57	0.55
-20	1023841	1058878	1095004	-6.08	-3.31	3.41	-0.56	0.54
-19	964260	996654	1030033	-6.03	-3.25	3.35	-0.55	0.54
-18	908531	938489	969337	-5.99	-3.19	3.29	-0.55	0.53
-17	856382	884092	912607	-5.95	-3.13	3.23	-0.54	0.53
-16	807561	833196	859560	-5.91	-3.08	3.16	-0.54	0.52
-15	761834	785556	809935	-5.87	-3.02	3.10	-0.53	0.51
-14	718989	740943	763491	-5.83	-2.96	3.04	-0.52	0.51
-13	678824	699146	720004	-5.79	-2.91	2.98	-0.52	0.50
-12	641158	659971	679269	-5.75	-2.85	2.92	-0.51	0.50
-11	605819	623239	641095	-5.71	-2.79	2.87	-0.50	0.49
-10	572650	588781	605305	-5.67	-2.74	2.81	-0.50	0.48
-9	541505	556444	571738	-5.63	-2.68	2.75	-0.49	0.48
-8	512248	526084	540241	-5.59	-2.63	2.69	-0.48	0.47
-7	484753	497570	510674	-5.55	-2.58	2.63	-0.47	0.46
-6	458905	470778	482909	-5.52	-2.52	2.58	-0.47	0.46
-5	434595	445594	456825	-5.48	-2.47	2.52	-0.46	0.45
-4	411722	421912	432310	-5.44	-2.42	2.46	-0.45	0.44
-3	390194	399634	409261	-5.41	-2.36	2.41	-0.45	0.44
-2	369923	378668	387581	-5.37	-2.31	2.35	-0.44	0.43
-1	350829	358930	367182	-5.34	-2.26	2.30	-0.43	0.42
0	332836	340341	347980	-5.30	-2.21	2.24	-0.42	0.42
1	315875	322827	329899	-5.27	-2.15	2.19	-0.42	0.41
2	299881	306320	312866	-5.23	-2.10	2.14	-0.41	0.40
3	284793	290756	296815	-5.20	-2.05	2.08	-0.40	0.39
4	270555	276077	281684	-5.16	-2.00	2.03	-0.39	0.39
5	257113	262226	267414	-5.13	-1.95	1.98	-0.39	0.38
6	244420	249153	253952	-5.10	-1.90	1.93	-0.38	0.37
7	232429	236809	241248	-5.06	-1.85	1.87	-0.37	0.37
8	221097	225150	229254	-5.03	-1.80	1.82	-0.36	0.36
9	210384	214133	217928	-5.00	-1.75	1.77	-0.35	0.35

Resistance-Temperature CharacteristicsPart No. : ESTA4104F4100F-3005021SC

R25 :	<u>100,000</u>	Ω	$\pm$	<u>1%</u>
B25/85 :	<u>4100</u>	K	$\pm$	<u>1%</u>

Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tol. (%)		Temp. Tol. (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
10	200254	203721	207227	-4.97	-1.70	1.72	-0.35	0.34
11	190670	193876	197115	-4.94	-1.65	1.67	-0.34	0.33
12	181602	184564	187555	-4.91	-1.60	1.62	-0.33	0.33
13	173018	175754	178515	-4.88	-1.56	1.57	-0.32	0.32
14	164889	167415	169963	-4.85	-1.51	1.52	-0.31	0.31
15	157190	159521	161870	-4.82	-1.46	1.47	-0.31	0.30
16	149894	152044	154209	-4.79	-1.41	1.42	-0.30	0.30
17	142979	144961	146955	-4.76	-1.37	1.38	-0.29	0.29
18	136423	138248	140084	-4.73	-1.32	1.33	-0.28	0.28
19	130205	131885	133573	-4.70	-1.27	1.28	-0.27	0.27
20	124306	125851	127402	-4.67	-1.23	1.23	-0.26	0.26
21	118708	120127	121551	-4.64	-1.18	1.19	-0.26	0.25
22	113394	114696	116002	-4.61	-1.14	1.14	-0.25	0.25
23	108347	109542	110738	-4.58	-1.09	1.09	-0.24	0.24
24	103554	104648	105742	-4.56	-1.04	1.05	-0.23	0.23
25	99000	100000	101000	-4.53	-1.00	1.00	-0.22	0.22
26	94586	95585	96584	-4.50	-1.04	1.05	-0.23	0.23
27	90394	91389	92386	-4.48	-1.09	1.09	-0.24	0.24
28	86411	87401	88394	-4.45	-1.13	1.14	-0.26	0.25
29	82625	83609	84597	-4.42	-1.18	1.18	-0.27	0.27
30	79026	80003	80983	-4.40	-1.22	1.23	-0.28	0.28
31	75604	76572	77544	-4.37	-1.26	1.27	-0.29	0.29
32	72349	73307	74270	-4.34	-1.31	1.31	-0.30	0.30
33	69252	70199	71153	-4.32	-1.35	1.36	-0.31	0.31
34	66304	67240	68183	-4.29	-1.39	1.40	-0.33	0.32
35	63498	64422	65353	-4.27	-1.43	1.45	-0.34	0.34
36	60826	61738	62657	-4.24	-1.48	1.49	-0.35	0.35
37	58281	59180	60086	-4.22	-1.52	1.53	-0.36	0.36
38	55857	56741	57634	-4.20	-1.56	1.57	-0.38	0.37
39	53546	54417	55296	-4.17	-1.60	1.62	-0.39	0.38
40	51343	52200	53066	-4.15	-1.64	1.66	-0.40	0.40
41	49243	50085	50937	-4.12	-1.68	1.70	-0.41	0.41
42	47240	48068	48905	-4.10	-1.72	1.74	-0.43	0.42
43	45329	46142	46965	-4.08	-1.76	1.78	-0.44	0.43
44	43505	44304	45113	-4.05	-1.80	1.83	-0.45	0.44
45	41765	42549	43343	-4.03	-1.84	1.87	-0.46	0.46
46	40103	40872	41652	-4.01	-1.88	1.91	-0.48	0.47
47	38516	39271	40036	-3.99	-1.92	1.95	-0.49	0.48
48	37001	37740	38491	-3.96	-1.96	1.99	-0.50	0.49
49	35553	36278	37014	-3.94	-2.00	2.03	-0.51	0.51

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Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tol. (%)		Temp. Tol. (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
50	34169	34880	35601	-3.92	-2.04	2.07	-0.53	0.52
51	32846	33543	34250	-3.90	-2.08	2.11	-0.54	0.53
52	31582	32264	32957	-3.88	-2.11	2.15	-0.55	0.55
53	30373	31040	31720	-3.86	-2.15	2.19	-0.57	0.56
54	29216	29870	30535	-3.83	-2.19	2.23	-0.58	0.57
55	28109	28749	29401	-3.81	-2.23	2.27	-0.59	0.58
56	27050	27677	28315	-3.79	-2.26	2.31	-0.61	0.60
57	26036	26649	27274	-3.77	-2.30	2.34	-0.62	0.61
58	25066	25666	26277	-3.75	-2.34	2.38	-0.64	0.62
59	24136	24723	25322	-3.73	-2.37	2.42	-0.65	0.64
60	23246	23820	24406	-3.71	-2.41	2.46	-0.66	0.65
61	22393	22955	23528	-3.69	-2.45	2.50	-0.68	0.66
62	21576	22125	22686	-3.67	-2.48	2.54	-0.69	0.68
63	20793	21330	21879	-3.65	-2.52	2.57	-0.70	0.69
64	20042	20567	21104	-3.63	-2.55	2.61	-0.72	0.70
65	19322	19836	20361	-3.61	-2.59	2.65	-0.73	0.72
66	18632	19134	19647	-3.59	-2.62	2.68	-0.75	0.73
67	17969	18460	18962	-3.57	-2.66	2.72	-0.76	0.74
68	17334	17814	18305	-3.56	-2.69	2.76	-0.78	0.76
69	16724	17193	17673	-3.54	-2.73	2.79	-0.79	0.77
70	16139	16597	17067	-3.52	-2.76	2.83	-0.80	0.79
71	15577	16025	16484	-3.50	-2.80	2.87	-0.82	0.80
72	15037	15475	15924	-3.48	-2.83	2.90	-0.83	0.81
73	14519	14947	15386	-3.46	-2.86	2.94	-0.85	0.83
74	14021	14439	14869	-3.45	-2.90	2.97	-0.86	0.84
75	13542	13951	14371	-3.43	-2.93	3.01	-0.88	0.85
76	13083	13482	13893	-3.41	-2.96	3.04	-0.89	0.87
77	12641	13032	13433	-3.39	-3.00	3.08	-0.91	0.88
78	12216	12598	12990	-3.38	-3.03	3.11	-0.92	0.90
79	11808	12181	12564	-3.36	-3.06	3.15	-0.94	0.91
80	11415	11780	12155	-3.34	-3.09	3.18	-0.95	0.93
81	11037	11393	11760	-3.32	-3.13	3.22	-0.97	0.94
82	10674	11022	11380	-3.31	-3.16	3.25	-0.98	0.96
83	10324	10664	11015	-3.29	-3.19	3.29	-1.00	0.97
84	9987	10320	10663	-3.27	-3.22	3.32	-1.01	0.98
85	9663	9988	10323	-3.26	-3.25	3.35	-1.03	1.00
86	9351	9669	9997	-3.24	-3.29	3.39	-1.05	1.01
87	9051	9361	9682	-3.22	-3.32	3.42	-1.06	1.03
88	8762	9065	9378	-3.21	-3.35	3.45	-1.08	1.04
89	8483	8780	9086	-3.19	-3.38	3.49	-1.09	1.06

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Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tol. (%)		Temp. Tol. (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
90	8214	8504	8804	-3.18	-3.41	3.52	-1.11	1.07
91	7956	8239	8532	-3.16	-3.44	3.55	-1.12	1.09
92	7706	7983	8270	-3.15	-3.47	3.59	-1.14	1.10
93	7466	7737	8017	-3.13	-3.50	3.62	-1.16	1.12
94	7234	7499	7773	-3.11	-3.53	3.65	-1.17	1.13
95	7010	7269	7537	-3.10	-3.56	3.68	-1.19	1.15
96	6795	7048	7310	-3.08	-3.59	3.71	-1.20	1.16
97	6587	6835	7091	-3.07	-3.62	3.75	-1.22	1.18
98	6386	6628	6879	-3.05	-3.65	3.78	-1.24	1.20
99	6193	6429	6674	-3.04	-3.68	3.81	-1.25	1.21
100	6006	6237	6477	-3.02	-3.71	3.84	-1.27	1.23
101	5826	6052	6286	-3.01	-3.74	3.87	-1.29	1.24
102	5652	5873	6102	-3.00	-3.77	3.90	-1.30	1.26
103	5484	5700	5924	-2.98	-3.80	3.94	-1.32	1.27
104	5321	5533	5752	-2.97	-3.82	3.97	-1.34	1.29
105	5165	5372	5586	-2.95	-3.85	4.00	-1.35	1.30