Specification For Approval

Customer name : _____

Product name : NTC Thermistor

Customer PN : _____

MFG PN : CWFD0103FB-240CP

MFG			Customer Confirmation		
Make	Check	Approval	Test	Check	Approval

(Company name)

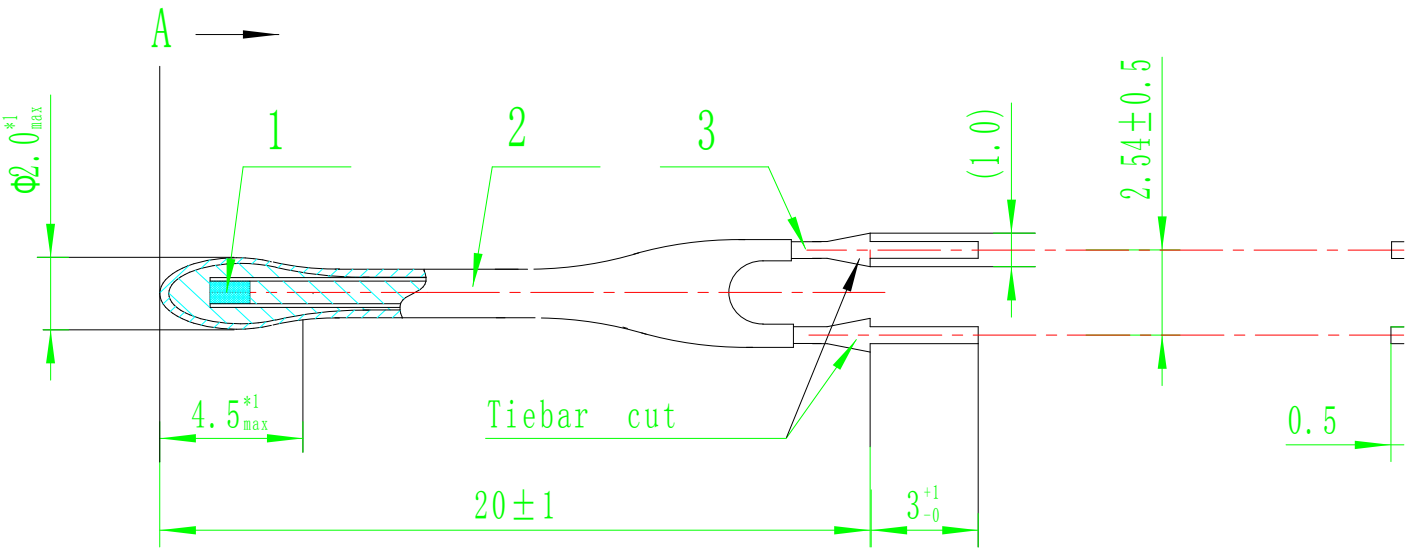
_____

Confirm got the spec and accept as our company's warehouse accept standard。

Version	Revise content	Forwarder	Date
A/0	Just made	Cheng	2016-05-18

1、Overall Dimension

（Unit：mm）



2、Material explanation

NO	Material Name	Item/PN
2-1.	Element	R25=10KΩ±1%　B25/50=3470K±1% DC
2-2.	Coating	Resin (Black)
2-3.	Lead Wire	Stents

3、Part Number：

×××　-　××　×××　×　×　××××　×

1　　2　3　　4　　5　6　　7　　8

(1) NTC Thermistor Mark;

(2) Head shape sign (B:Housing Type,　D:Dip-Coating,　M:Molding);

(3) Series Type (0:Epoxy coating structure, 1:Epoxy coating structure(high temp)) ;

(4) Nominal resistor is value at 25degree,unit is Ohm，previous two digital representation significant digitsofresistance，third digital representation the number of zero;

(5) Resistance tolerance（%）;

(6) B Value constant sign　In general, it is value of 25/50Deg，other conditions will remark and explain;

(7) Length Sign，unit is mm ;

(8) Special code ;

4、Electrical Performance:

NO	Item	Sign	Test Conditions	Min.	Normal value	Max.	Unit
4-1.	Resistance at 25℃	R25	Ta=25±0.05℃ P_T≦0.1mw	9.9	10.0	10.1	kΩ
4-2.	B Value	B25/50	$B=LN\frac{R_{TI}}{R_{T2}}/(\frac{1}{T1}-\frac{1}{T2})$	3435.3	3470	3504.7	k
4-3.	Dissipation factor	σ	Ta=25±0.5℃	≧0.9			mW/℃
4-4.	Time constant	τ	Ta=25±0.5℃	≦15			sec
4-5.	Maximum rated power	P	/	≦25			mW
4-6.	Operating temp.range	/	/	-40	/	+125	℃

5、Reliability Test

NO	Item	Technical requirements	Test conditions and method
5-1.	Weldability	Solder coating area is over 95%	Temperature: 260℃±5℃, Time: ≤Sec
5-2.	Resistance To Soldering Heat	R25 △R/R≤±3%	Tin stove temperature: ≤260±5℃, Immersion depth is ≥9mm distance far away with body, Time: ≤3Sec
5-3	Steady State Temperatur	R25 △R/R≤±3%	Temperature:40±3℃; Humidity:90-98%, Time:300H
5-4	Temp. cycle test	R25 △R/R≤±3%	–20±3℃×30min ⟺ 120±3℃×30min×50 cycles
5-5.	High temperature storage	R25 △R/R≤±3%	Temperature:120±3℃; Time:300H
5-6	Low temperature storage	R25 △R/R≤±3%	Temperature:-20℃; Time:300H
5-7	Drop test	No visible damage	Free fall into concrete floor from height 1M ， 5 cycle。
5-8	Bending test		Bend 90°binding site wire and epoxy resin。Back and forth 3 times
5-9	Tensile tests		Fixed resistors at both ends ,Pull: 10±1N, Time: 10±1 Sec

6、Storage Method

6.1 In the process of storage and transportation, per stack height is not more than 4 CTN products.

6.2 Available with all transport method, but avoid the rain, snow of direct or indirect leaching and mechanical damage.

6.3 Products should be stored in the temperature of environment - 10 ℃ / + 40 ℃, relative humidity is not more than 80%, environment should not have acid, alkali and corrosion gas or radioactive source.

7、R—T Conversion Table.

R－T CONVERSION TABLE

R_{25}=10KΩ±1% $B_{25/50}$=3470K±1%

T(℃)	R↓(%)	Rmin (KΩ)	Rcen (KΩ)	Rmax (KΩ)	R↑(%)
-40	-4.094	222.2558	231.7438	241.4607	4.193
-39	-4.037	209.6808	218.502	227.5311	4.132
-38	-3.98	197.8985	206.1023	214.4948	4.072
-37	-3.924	186.8541	194.4861	202.2894	4.012
-36	-3.868	176.4971	183.5991	190.8566	3.953
-35	-3.813	166.7797	173.3905	180.1424	3.894
-34	-3.757	157.6592	163.8144	170.0977	3.836
-33	-3.703	149.095	154.8275	160.6763	3.778
-32	-3.648	141.0496	146.3899	151.8356	3.72
-31	-3.594	133.4886	138.4647	143.5365	3.663
-30	-3.54	126.38	131.018	135.7427	3.606
-29	-3.487	119.7408	124.0667	128.4713	3.55
-28	-3.434	113.4893	117.5251	121.6322	3.495
-27	-3.381	107.601	111.3668	115.1973	3.44
-26	-3.329	102.0526	105.5671	109.1403	3.385
-25	-3.277	96.8223	100.103	103.4368	3.33
-24	-3.226	91.8904	94.9533	98.0643	3.276
-23	-3.174	87.2381	90.0981	93.0017	3.223
-22	-3.123	82.8478	85.5188	88.2292	3.169
-21	-3.073	78.7034	81.1982	83.7287	3.116
-20	-3.022	74.7897	77.1203	79.4831	3.064
-19	-2.972	71.1028	73.2807	75.4877	3.012
-18	-2.922	67.6179	69.6533	71.715	2.96
-17	-2.873	64.3226	66.2251	68.1512	2.908
-16	-2.823	61.2056	62.9839	64.7836	2.857
-15	-2.774	58.2566	59.919	61.6006	2.807
-14	-2.726	55.4655	57.0197	58.5912	2.756
-13	-2.677	52.823	54.2761	55.7447	2.706
-12	-2.629	50.3202	51.6789	53.0515	2.656
-11	-2.581	47.9494	49.2198	50.5027	2.606
-10	-2.533	45.7026	46.8905	48.0896	2.557
-9	-2.486	43.5956	44.7072	45.8288	2.509
-8	-2.44	41.5952	42.6353	43.6844	2.461
-7	-2.393	39.6958	40.669	41.6502	2.413
-6	-2.347	37.8917	38.8023	39.72	2.365
-5	-2.301	36.1776	37.0295	37.8877	2.318
-4	-2.255	34.5487	35.3456	36.1482	2.271
-3	-2.209	33.0004	33.7458	34.4962	2.224
-2	-2.163	31.5283	32.2254	32.927	2.177
-1	-2.118	30.1284	30.7803	31.4361	2.131
0	-2.073	28.7965	29.406	30.019	2.084
1	-2.026	27.4865	28.055	28.6265	2.037
2	-1.98	26.2452	26.7754	27.3082	1.99

R－T CONVERSION TABLE

		R_{25}=10KΩ±1%	$B_{25/50}$=3470K±1%		
3	-1.934	25.0685	25.5629	26.0596	1.943
4	-1.889	23.9528	24.4139	24.8769	1.897
5	-1.843	22.8945	23.3245	23.7561	1.851
6	-1.798	21.8901	22.291	22.6933	1.805
7	-1.754	20.9368	21.3105	21.6855	1.759
8	-1.709	20.0314	20.3798	20.7292	1.714
9	-1.665	19.1715	19.4962	19.8218	1.67
10	-1.622	18.3541	18.6567	18.96	1.626
11	-1.578	17.5774	17.8593	18.1418	1.582
12	-1.535	16.8387	17.1012	17.3642	1.538
13	-1.492	16.1362	16.3806	16.6254	1.495
14	-1.45	15.4675	15.695	15.9229	1.452
15	-1.407	14.8311	15.0428	15.2548	1.409
16	-1.366	14.2252	14.4221	14.6192	1.367
17	-1.324	13.6478	13.8309	14.0141	1.325
18	-1.282	13.0981	13.2682	13.4385	1.283
19	-1.241	12.574	12.732	12.8901	1.242
20	-1.2	12.0743	12.221	12.3677	1.201
21	-1.16	11.5977	11.7338	11.8699	1.16
22	-1.119	11.1432	11.2694	11.3956	1.12
23	-1.079	10.7094	10.8263	10.9432	1.079
24	-1.04	10.2954	10.4035	10.5117	1.04
25	-1	9.9	10	10.1	1
26	-1.039	9.5149	9.6148	9.7147	1.039
27	-1.078	9.1481	9.2478	9.3475	1.078
28	-1.117	8.7978	8.8972	8.9966	1.117
29	-1.155	8.4631	8.562	8.6609	1.155
30	-1.193	8.1435	8.2418	8.3402	1.194
31	-1.231	7.8375	7.9352	8.0329	1.232
32	-1.269	7.5453	7.6422	7.7392	1.269
33	-1.306	7.2655	7.3616	7.4578	1.307
34	-1.343	6.998	7.0933	7.1886	1.344
35	-1.38	6.742	6.8363	6.9307	1.381
36	-1.416	6.4966	6.5899	6.6833	1.418
37	-1.452	6.262	6.3543	6.4467	1.454
38	-1.488	6.0371	6.1283	6.2197	1.491
39	-1.524	5.8217	5.9118	6.0021	1.527
40	-1.56	5.6151	5.7041	5.7933	1.563
41	-1.595	5.4173	5.5051	5.5931	1.599
42	-1.63	5.2276	5.3142	5.401	1.634
43	-1.665	5.0457	5.1311	5.2168	1.669
44	-1.7	4.8711	4.9553	5.0398	1.705
45	-1.734	4.7037	4.7867	4.87	1.739
46	-1.768	4.543	4.6248	4.7069	1.774

R－T CONVERSION TABLE					
		R_{25}=10KΩ±1%	$B_{25/50}$=3470K±1%		
47	-1.802	4.3888	4.4693	4.5501	1.809
48	-1.836	4.2407	4.32	4.3996	1.843
49	-1.869	4.0983	4.1764	4.2548	1.877
50	-1.903	3.9619	4.0387	4.1159	1.911
51	-1.936	3.8279	3.9035	3.9794	1.945
52	-1.97	3.6991	3.7734	3.8481	1.979
53	-2.003	3.5752	3.6483	3.7218	2.013
54	-2.036	3.4561	3.5279	3.6001	2.047
55	-2.07	3.3413	3.4119	3.4829	2.081
56	-2.102	3.2309	3.3003	3.3701	2.115
57	-2.135	3.1245	3.1927	3.2613	2.148
58	-2.168	3.0222	3.0892	3.1566	2.182
59	-2.2	2.9237	2.9895	3.0557	2.215
60	-2.232	2.8289	2.8935	2.9585	2.248
61	-2.265	2.7374	2.8008	2.8647	2.281
62	-2.297	2.6493	2.7116	2.7743	2.314
63	-2.328	2.5645	2.6256	2.6872	2.346
64	-2.36	2.4826	2.5426	2.6031	2.379
65	-2.392	2.4037	2.4626	2.522	2.411
66	-2.423	2.3277	2.3855	2.4438	2.443
67	-2.454	2.2543	2.311	2.3682	2.476
68	-2.485	2.1836	2.2393	2.2955	2.508
69	-2.516	2.1154	2.17	2.2251	2.54
70	-2.547	2.0495	2.1031	2.1572	2.571
71	-2.578	1.9861	2.0387	2.0918	2.603
72	-2.608	1.9249	1.9764	2.0285	2.635
73	-2.639	1.8656	1.9162	1.9673	2.666
74	-2.669	1.8086	1.8582	1.9083	2.697
75	-2.699	1.7536	1.8022	1.8514	2.728
76	-2.729	1.7003	1.748	1.7962	2.759
77	-2.759	1.6489	1.6957	1.743	2.79
78	-2.789	1.5992	1.6451	1.6915	2.821
79	-2.818	1.5514	1.5964	1.6419	2.852
80	-2.848	1.5051	1.5492	1.5939	2.882
81	-2.877	1.4602	1.5035	1.5473	2.913
82	-2.906	1.417	1.4594	1.5024	2.943
83	-2.935	1.3753	1.4169	1.459	2.973
84	-2.964	1.3348	1.3756	1.4169	3.004
85	-2.993	1.2958	1.3358	1.3763	3.033
86	-3.022	1.2575	1.2967	1.3364	3.064
87	-3.051	1.2204	1.2588	1.2977	3.094
88	-3.08	1.1848	1.2224	1.2606	3.124
89	-3.109	1.15	1.1869	1.2243	3.154
90	-3.137	1.1165	1.1527	1.1894	3.184

R－T CONVERSION TABLE					
		R_{25}=10KΩ±1%	$B_{25/50}$=3470K±1%		
91	-3.166	1.084	1.1194	1.1554	3.214
92	-3.194	1.0527	1.0874	1.1227	3.244
93	-3.223	1.0224	1.0564	1.091	3.273
94	-3.251	0.993	1.0264	1.0603	3.303
95	-3.279	0.9645	0.9972	1.0304	3.332
96	-3.307	0.937	0.969	1.0016	3.362
97	-3.335	0.9102	0.9416	0.9735	3.391
98	-3.363	0.8844	0.9152	0.9465	3.42
99	-3.391	0.8594	0.8896	0.9203	3.449
100	-3.418	0.8353	0.8649	0.895	3.478
101	-3.446	0.8117	0.8407	0.8702	3.507
102	-3.473	0.7889	0.8173	0.8462	3.536
103	-3.5	0.767	0.7948	0.8231	3.565
104	-3.528	0.7457	0.773	0.8008	3.593
105	-3.555	0.725	0.7517	0.7789	3.622
106	-3.582	0.7049	0.7311	0.7578	3.65
107	-3.609	0.6855	0.7112	0.7374	3.679
108	-3.636	0.6666	0.6918	0.7174	3.707
109	-3.662	0.6484	0.6731	0.6982	3.735
110	-3.689	0.6308	0.655	0.6796	3.763
111	-3.715	0.6138	0.6375	0.6617	3.791
112	-3.742	0.5971	0.6203	0.644	3.819
113	-3.768	0.581	0.6038	0.627	3.847
114	-3.794	0.5654	0.5877	0.6105	3.875
115	-3.82	0.5503	0.5722	0.5945	3.902
116	-3.847	0.5355	0.5569	0.5788	3.93
117	-3.873	0.5212	0.5422	0.5637	3.958
118	-3.899	0.5073	0.5279	0.5489	3.985
119	-3.924	0.494	0.5142	0.5348	4.012
120	-3.95	0.4809	0.5007	0.5209	4.04
121	-3.976	0.4682	0.4876	0.5074	4.067
122	-4.001	0.4559	0.4749	0.4943	4.094
123	-4.027	0.444	0.4626	0.4817	4.121
124	-4.052	0.4325	0.4508	0.4695	4.148
125	-4.077	0.4212	0.4391	0.4574	4.175