

Products Specification For Approval

Products No.: JH197-5E-103F-3435F

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深圳市慧传科技有限公司

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Features:

Insulated membrane sealed, rapid respond and high sensitivity; Safety in use;
 Stable operation, good electrical insulation, high reliability and precision;
 Small size, lightweight, applicable for the use in narrow environment.

Certifications:

UL, CE, ROHS, REACH, ISO9000 etc.

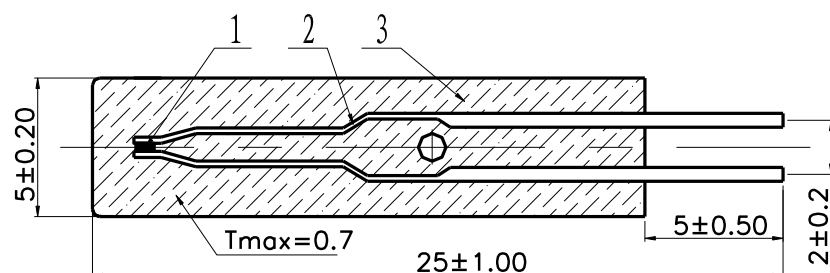
Purpose:

Precision temperature measurement. Circuit temperature compensation. Temperature measurement and control applications.

Applicable Scope:

Personal computer, household appliance, printer, etc.

Main Dimensions Parameters(unit: mm)



No.	Name	Unit	Amount	Material and/or Specification
1	Chip	Piece(s)	1	$R_{25} = 10K \Omega \pm 1\%$, $B_{25/85}=3435K \pm 1\%$
2	Bracket	Piece(s)	2	Phosphor-bronze alloy
3	Membrane	Piece(s)	2	Insulated glued membrane

Description of Model and Specifications

Name: NTC Insulated membrane sealed Thermistor Specification: $R_{25}=10K \pm 1\%$, $B_{25/85}=3435K \pm 1\%$

K P D / M F 5 E 1 0 3 F 3 4 3 5 F
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① KPD—Abbreviations for KePengDa.
- ② MF—The code name of negative temperature coefficient (NTC) thermistor.
- ③ 5E—Insulated membrane sealed Thermistor of NTC.
- ④ 103—Thenominal resistance of thermistor, e.g. 103 represents the particular nominal resistance is $10 \times 10^3 (\Omega)$.
- ⑤ F—The error of resistance of thermistor, e.g. F stands for the particular error as $\pm 1\%$.
- ⑥ 3435—The $B_{25/85}$ value of thermistor, e.g. 3435 means the material coefficient $B_{25/85}=3435 (K)$.
- ⑦ F—The error of the $B_{25/85}$ alue of thermistor, e.g. F shows such value is $\pm 1\%$.

Key Technical Specifications

NO.	NAME	SIGN	UNIT	MINIMUM	STANDARD	MAXIMUM	EXPERIMENTAL ENVIRONMENT	EXPERIMENTAL STANDARD
1	Nominal 25°C Resistance Value	R ₂₅	K Ω	9.9	10	10.1	Constant Temperature 25±0.05°C	GB/T6663.1-2.2
2	Nominal 85°C Resistance Value	R ₈₅	K Ω	N/A	1.4513	N/A	Constant Temperature 85±0.05°C	GB/T6663.1-2.2
3	Material Coefficient (B Value)	B _{25/85}	K	3400.65	3435	3469.35	N/A	GB/T6663.1-2.2
4	Dissipation Coefficient	δ	mW°C	≥0.7			In Still Air	GB/T6663.1-4.10
5	Thermal Time Constant	τ	s	≤5			In Still Air	GB/T6663.1-4.11
6	Rated Power	P _N	mW	25			Within Working Temperature	GB/T6663.1-2.2
7	NTC Working Temperature	T _N	°C	-40~+120			N/A	GB/T6663.1-4.22

Experimental Test Environment with the Corresponding Parameters

No.	Test Item	Testing Environments	Performance Requirements	Testing Standards
1	Dry Heat	Placed in the air at 120±2 °C for 1,000 hours	No visible damage Δ R/R25 ≤ ± 2%	GB/T6663.1-4.24 IEC600068-2-2/ GB2423-2
2	Wet Heat	Placed in the air at 40±2°C with Relative Humidity of 90 to 95% for 1,000 hours	No visible damage Δ R/R25 ≤ ± 2%	GB/T6663.1-4.25 IEC60068-2-3/GB2423-3
3	Cold	Placed in the air at -30±2°C for 1,000 hours	No visible damage Δ R/R25 ≤ ± 2%	GB/T6663.1-4.23 IEC600068-2-1/GB2423-1
4	Rapidly Changing Temperature	Placed in the air at -30±2°C and +100±3°C for 30 minutes, respectively, circulate for 20 times within interval less than 5 seconds	No visible damage Δ R/R25 < ± 1%	1 GB/T6663.1-4.16 IEC60068-2-14/GB2423-22
5	Durability	1mADC, TA=30±5°C for 1,000 hours	No visible damage Δ R/R25 ≤ ± 2%	GB/T6663.1-4.26
6	Thermal Shock	Placed at +120±3°C for 20 minutes then air-cooled in the room temperature for 20 minutes, circulate for 20 times	Δ R/R25 ≤ ± 1%	GB/T6663.1-4.21 IEC60068-2-14
7	Solderability	The lead-out end is dipped with flux and immersed in a tin bath at 235±5°C. The tin surface is 2-2.5mm away from the lower end of NTC body and lasts for 2±0.5S.	The solder free flow and wetting is good, the tin area is more than 95%.	GB/T6663.1-4.15 IEC60068-2-20/GBT2423-2 8

8	Welding heat resistance	The solder flux was dipped into the tin bath at $260 \pm 5^{\circ}\text{C}$ at the lead-out end, and the tin surface was $2 \sim 2.5\text{mm}$ away from the bottom of NTC body for a duration of $10 \pm 1\text{s}$	No visible damage $R/R \leq \pm 1\%$	GB/T6663.1-4.14 IEC60068-2-20/GBT2423-2 8
9	Free Fall	Dropped freely onto a wood board, from a height of 1 meters, for 10 times	No visible damage $\Delta R/R \leq \pm 1\%$	GB/T6663.1-4.20 IEC60068-2-32/GBT2423-8
10	Terminal Strength	Tension: 20N 10s, Bending: 90°C ; twice, 10s Torsion: 180°C ; twice, 10s	No visible damage	GB/T6663.1-4.13 IEC60068-2-21/GBT2423-2 9
11	Withstanding Voltage test	Under 700VAC(or 980 V AC insulation voltage) for 1 minute	No breakdown or flashover	GB/T6663.1-4.8
12	Insulation resistance	Under $100 \pm 15\text{VDC}$ for 1 minute	$\geq 100\text{M}\Omega$	GB/T6663.1-4.7
13	Drift at room temperature	Stored at room temperature for 10,000 hours	$\Delta R/R_{25} \leq \pm 5\%$	Workshop Standard

Notes:

1. Welding temperature below 350°C , time less than 3 s;
2. It is forbidden to fold;
3. The horizontal pressure is less than $5\text{N}/\text{cm}^2$
4. It is strictly forbidden to soak the heat-shrinkable tube in the solution.
5. If the heat-shrinkable tube is required to be used during the processing, the heat-shrinkable tube can not be used for blowing when the heat-shrinkable tube is heat-shrinkable, and the heat-shrinkable process is recommended. The product after the heat-shrinkable tube is put in a constant-temperature oven, and the heat-shrinkable is conducted at the temperature of $110^{\circ}\text{C}/10 \sim 12\text{min}$.
6. The product usage change needs to be notified to our company.

Package

Spare parts with bag: 200pcs/bag (vacuum)

Storage

Storage in the Room Temperature at: $-10 \sim +40^{\circ}\text{C}$

Relative Humidity: $\leq 60\%$

Avoid corrosive gas, direct sunlight, falling from height, weight loading and rapidly changing of temperature.

Storage life: 3 years

Operation suggestion

Safety working temperature: $-40 \sim +125^{\circ}\text{C}$

Safety Voltage $\leq 9\text{V}$, Safety Current $\leq 5\text{mA}$

Waterproof

Underwater or humid environment is prohibited in the usage.

Quick way for testing in the air

Link: http://www.kpd-ntc.com/gb/news_detail.asp?id=38 (Testing method one)

http://www.kpd-ntc.com/gb/news_detail.asp?id=37 (Testing method two)

Appendix (NTC thermistor R-T Parameter Chart MF5E)

R ---- T 分度表

R _{25℃} =10.00KΩ±1%				B _{25/85} : 3435			
T (°C)	R (KΩ) Min	R (KΩ) Center	R (KΩ) Max	T (°C)	R (KΩ) Min	R (KΩ) Center	R (KΩ) Max
-40	200.58	208.86	217.46	8	19.256	19.581	19.910
-39	188.12	195.75	203.68	9	18.480	18.784	19.092
-38	176.66	183.71	191.03	10	17.740	18.025	18.313
-37	166.10	172.63	179.39	11	17.034	17.301	17.570
-36	156.36	162.41	168.67	12	16.361	16.610	16.862
-35	147.36	152.97	158.77	13	15.718	15.952	16.186
-34	139.03	144.23	149.61	14	15.105	15.323	15.542
-33	131.30	136.13	141.13	15	14.519	14.722	14.927
-32	124.12	128.61	133.26	16	13.959	14.149	14.340
-31	117.44	121.62	125.95	17	13.424	13.601	13.780
-30	111.21	115.11	119.14	18	12.913	13.078	13.244
-29	105.40	109.04	112.79	19	12.423	12.578	12.733
-28	99.966	103.36	106.86	20	11.956	12.099	12.244
-27	94.884	98.056	101.32	21	11.508	11.642	11.776
-26	90.121	93.085	96.137	22	11.079	11.204	11.329
-25	85.652	88.424	91.276	23	10.669	10.785	10.901
-24	81.454	84.047	86.714	24	10.276	10.384	10.492
-23	77.505	79.933	82.428	25	9.9000	10.000	10.100
-22	73.787	76.060	78.395	26	9.5323	9.6322	9.7322
-21	70.282	72.411	74.598	27	9.1802	9.2798	9.3796
-20	66.974	68.970	71.018	28	8.8428	8.9421	9.0417
-19	63.850	65.721	67.640	29	8.5196	8.6185	8.7176
-18	60.896	62.650	64.448	30	8.2098	8.3081	8.4068
-17	58.100	59.745	61.431	31	7.9128	8.0105	8.1086
-16	55.451	56.995	58.575	32	7.6280	7.7250	7.8224
-15	52.940	54.388	55.871	33	7.3549	7.4511	7.5478
-14	50.558	51.917	53.307	34	7.0928	7.1882	7.2841
-13	48.296	49.571	50.874	35	6.8414	6.9358	7.0308
-12	46.146	47.342	48.565	36	6.6000	6.6935	6.7876
-11	44.102	45.224	46.371	37	6.3683	6.4608	6.5540
-10	42.156	43.210	44.285	38	6.1458	6.2373	6.3294
-9	40.304	41.293	42.301	39	5.9321	6.0225	6.1136
-8	38.540	39.467	40.413	40	5.7268	5.8161	5.9062
-7	36.858	37.728	38.614	41	5.5296	5.6177	5.7067
-6	35.253	36.069	36.900	42	5.3400	5.4270	5.5149
-5	33.723	34.488	35.266	43	5.1577	5.2436	5.3303
-4	32.261	32.978	33.708	44	4.9825	5.0672	5.1528
-3	30.865	31.537	32.221	45	4.8140	4.8975	4.9819
-2	29.532	30.161	30.801	46	4.6519	4.7342	4.8174
-1	28.257	28.847	29.445	47	4.4960	4.5771	4.6591
0	27.038	27.590	28.150	48	4.3460	4.4258	4.5067
1	25.887	26.404	26.928	49	4.2016	4.2802	4.3599
2	24.793	25.277	25.768	50	4.0626	4.1400	4.2184
3	23.753	24.206	24.665	51	3.9306	4.0068	4.0840
4	22.763	23.187	23.617	52	3.8036	3.8786	3.9546
5	21.821	22.218	22.620	53	3.6813	3.7551	3.8300
6	20.924	21.296	21.672	54	3.5637	3.6363	3.7100
7	20.070	20.418	20.769	55	3.4504	3.5218	3.5943

R ---- T 分度表

R _{25℃} =10.00KΩ±1%				B _{25/85} : 3435			
T (°C)	R (KΩ) Min	R (KΩ) Center	R (KΩ) Max	T (°C)	R (KΩ) Min	R (KΩ) Center	R (KΩ) Max
56	3.3413	3.4116	3.4829	104	0.8502	0.8799	0.9106
57	3.2362	3.3053	3.3755	105	0.8288	0.8580	0.8881
58	3.1350	3.2029	3.2720	106	0.8081	0.8367	0.8663
59	3.0375	3.1043	3.1722	107	0.7879	0.8161	0.8451
60	2.9435	3.0091	3.0759	108	0.7683	0.7960	0.8245
61	2.8528	2.9174	2.9831	109	0.7493	0.7765	0.8045
62	2.7655	2.8289	2.8935	110	0.7308	0.7575	0.7851
63	2.6812	2.7435	2.8070	111	0.7125	0.7387	0.7658
64	2.5999	2.6612	2.7236	112	0.6947	0.7204	0.7470
65	2.5215	2.5817	2.6430	113	0.6775	0.7027	0.7289
66	2.4458	2.5050	2.5653	114	0.6608	0.6856	0.7112
67	2.3728	2.4309	2.4902	115	0.6445	0.6689	0.6941
68	2.3023	2.3594	2.4176	116	0.6288	0.6527	0.6775
69	2.2342	2.2903	2.3476	117	0.6135	0.6370	0.6614
70	2.1685	2.2236	2.2799	118	0.5987	0.6218	0.6457
71	2.1050	2.1591	2.2144	119	0.5843	0.6070	0.6305
72	2.0437	2.0969	2.1512	120	0.5703	0.5926	0.6157
73	1.9845	2.0367	2.0900	121	0.5568	0.5786	0.6013
74	1.9272	1.9785	2.0309	122	0.5436	0.5651	0.5873
75	1.8719	1.9222	1.9737	123	0.5308	0.5519	0.5738
76	1.8184	1.8678	1.9184	124	0.5183	0.5391	0.5606
77	1.7667	1.8152	1.8649	125	0.5062	0.5266	0.5478
78	1.7167	1.7644	1.8132	126	0.4945	0.5145	0.5353
79	1.6683	1.7151	1.7631	127	0.4830	0.5027	0.5232
80	1.6215	1.6675	1.7146	128	0.4719	0.4913	0.5114
81	1.5763	1.6214	1.6677	129	0.4611	0.4801	0.4999
82	1.5325	1.5768	1.6223	130	0.4506	0.4693	0.4887
83	1.4901	1.5336	1.5783	131	0.4404	0.4588	0.4779
84	1.4490	1.4918	1.5356	132	0.4305	0.4485	0.4673
85	1.4093	1.4513	1.4944	133	0.4208	0.4385	0.4570
86	1.3709	1.4121	1.4544	134	0.4114	0.4288	0.4470
87	1.3336	1.3741	1.4157	135	0.4022	0.4194	0.4372
88	1.2976	1.3373	1.3781	136	0.3933	0.4102	0.4277
89	1.2626	1.3016	1.3417	137	0.3846	0.4012	0.4185
90	1.2288	1.2671	1.3065	138	0.3762	0.3925	0.4094
91	1.1960	1.2336	1.2723	139	0.3680	0.3840	0.4007
92	1.1642	1.2011	1.2391	140	0.3599	0.3757	0.3921
93	1.1334	1.1697	1.2070	141	0.3521	0.3676	0.3838
94	1.1035	1.1392	1.1758	142	0.3445	0.3598	0.3757
95	1.0746	1.1096	1.1456	143	0.3371	0.3521	0.3678
96	1.0465	1.0809	1.1162	144	0.3299	0.3447	0.3600
97	1.0193	1.0530	1.0878	145	0.3229	0.3374	0.3525
98	0.9929	1.0260	1.0602	146	0.3160	0.3303	0.3452
99	0.9673	0.9998	1.0333	147	0.3094	0.3234	0.3380
100	0.9425	0.9744	1.0073	148	0.3029	0.3167	0.3311
101	0.9183	0.9497	0.9821	149	0.2965	0.3101	0.3243
102	0.8950	0.9258	0.9575	150	0.2903	0.3037	0.3176
103	0.8723	0.9025	0.9337				