淯升帀慨伞秏找鼙陈俞叶

深圳市慧传科技有限公司
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Features:

Epoxy-sealed, small size, rapid respond and high sensitivity; Stable operation, high reliability and high precision; Good consistency and interchangeability.

Certifications:

UL, CE, ROHS, REACH, ISO9000 etc.

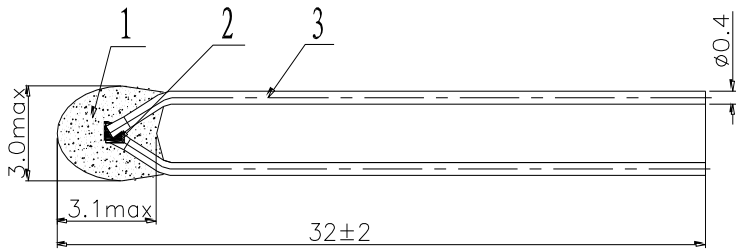
Purpose:

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

Applicable Scope:

Electronic thermometer, calendar; Cooling and/or heating equipment; Heating of constant-temperature electronic appliances; Control circuit of automobile temperature measurement; Temperature sensor and related instrument;
Medical instruments, sanitary facilities.

Main Dimensions Parameters(unit: mm)



No.	Name	Unit	Amount	Material and/or Specification
1	Epoxy head	Piece(s)	1	Black epoxy resin
2	Chip	Piece(s)	1	R_{25} = 20KΩ ±1%, $B_{25/50}$=3950K±1%
3	Lead Wire	Piece(s)	2	Φ0. 4galvanized copper wire

Description of Model and Specifications

Name: NTC Epoxy-sealed Thermistor Specification: R_{25}=20K±1%, $B_{25/50}$=3950K±1%

KPD	MF	5A	203	F	395	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 5A ——Epoxy Sealed Thermistor of NTC.

④ 203 —Thenominal resistance of thermistor, e.g. 203 presents the particular nominal resistance is20×10^3（Ω）.

⑤ F——The error of resistance of thermistor, e.g. F stands for the particular error as±1%.

⑥ 395——The $B_{25/50}$value of thermistor, e.g.395 means the material coefficient $B_{25/50}$=3950K.

⑦ F ——The error of the$B_{25/50}$value of thermistor, e.g. F shows such value is±1%.

Key Technical Specifications

NO.	NAME	SIGN	UNIT	MINIMUM	STANDARD	MAXIMUM	EXPERIMENTAL ENVIRONMENT	EXPERIMENTAL STANDARD
1	Nominal25℃ Resistance Value	R_{25}	KΩ	19.8	20	20.2	Constant Temperature 25±0.05℃	GB/T6663.1-2.2
2	Nominal50℃ Resistance Value	R_{50}	KΩ	N/A	7.176	N/A	Constant Temperature 50±0.05℃	GB/T6663.1-2.2
3	Material Coefficient (B Value)	$B_{25/50}$	K	3910.5	3950	3989.5	N/A	GB/T6663.1-2.2
4	Dissipation Coefficient	δ	mW℃	≥1.5			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	50			Within Working Temperature	GB/T6663.1-2.2
7	NTC Working Temperature	T_A	℃	-30~+125			N/A	GB/T6663.1-4.22

Experimental Test Environmentwith the Corresponding Parameters

NO.	TEST ITEM	TESTING ENVIRONMENTS	PERFORMANCE REQUIREMENTS	TESTING STANDARDS
1	Dry Heat	Placed in the air at 125±2℃ for 1,000 hours	No visible damage $\Delta R/R_{25} \leq \pm 2\%$	GB/T6663.1-4.24 IEC600068-2-2/ GB2423-2
2	Wet Heat	Placed in the air at 40±2℃ with Relative Humidity of 90 to 95% for 1,000 hours	No visible damage $\Delta R/R_{25} \leq \pm 2\%$	GB/T6663.1-4.25 IEC60068-2-3/GB2423-3
3	Cold	Placed in the air at−35±2℃ for 1,000 hours	No visible damage $\Delta R/R_{25} \leq \pm 2\%$	GB/T6663.1-4.23 IEC600068-2-1/GB2423-1
4	Rapidly Changing Temperature	Placed in the air at−30±2℃ and +100±3℃for 30 minutes, respectively, circulate for 20 times withan interval less than 5 seconds	No visible damage $\Delta R/R_{25} < \pm 1\%$	I GB/T6663.1-4.16 IEC60068-2-14/GB2423-22
5	Durability	1mADC, T_A=30±5℃ for 1,000 hours	No visible damage $\Delta R/R_{25} \leq \pm 2\%$	GB/T6663.1-4.26
6	Thermal Shock	Placed at+125±3℃ for 20 minutes then air-cooled in the room temperature for 20 minutes, circulate for 20 times	$\Delta R/R_{25} \leq \pm 1\%$	GB/T6663.1-4.21 EC60068-2-14
7	Electroplating	Dip the wire in the tin bath at 235±5℃ for 2±0.5sseconds, with the dipping depth 10mm	No visible damage Tin coverage ≥95%	GB/T6663.1-4.15 IEC60068-2-20/GBT2423-28
8	Free Fall	Dropped freely onto a wood board, from a height of 1 meters, for 10 times	No visible damage $\triangle R/R \leq \pm 1\%$	GB/T6663.1-4.20 IEC60068-2-32/GBT2423-8
9	Terminal Strength	Apply 20 Newton pull force on the sample for 10 ± 1 seconds	No visible damage	GB/T6663.1-4.13 IEC60068-2-21/GBT2423-29

10	Driftat room temperature	Stored at room temperature for 10,000 hours	$\Delta R/R_{25} \leqslant \pm 5‰$	Workshop Standard
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±15VDC for 1 minute	≥100MΩ	GB/T6663.1-4.7

Notes:

1. The permitted working temperature of product MF5A series thermistors should not exceed 12due to the limitation of the structure.
2. Notice during welding

（1） The lead wire of NTC thermistor should be longer than 8mm;

（2） Welding requirements: By using 25W or 40 W electric iron, maintain the temperature control within the range of330±20℃, for no longer than 3 seconds in welding. The time interval for the 2nd time welding rework (if needed) should be at least 10 minutes.

（3）soldering : Preheated at 160℃ for 6 seconds,soldering at 280℃ for no longer than 3 seconds.

3. Drying with industry hot air gun is prohibited.
4. Please inform us if the useof our product has been changed.

Package:

Bags: 500pcs / bag (vacuum)

Storage

Storage in the Room Temperature at: -10～+40℃

Relative Humidity: ≤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: -30～+120℃

Safety Voltage≤9V，Safety Current≤5MA

Permitted pulling force: 5N for wire with ∅ 0.3MM ; 10N for wire with ∅ 0.4MM

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 MF5A)

R ---- T 分 度 表

$R_{25℃}$=20.00KΩ ±1%					$B_{25/50}$: 3950		
T（℃）	R（KΩ） Min	R（KΩ） Center	R（KΩ） Max	T（℃）	R（KΩ） Min	R（KΩ） Center	R（KΩ） Max
-30	337.57	347.68	357.78	17	28.418	28.785	29.152
-29	311.52	320.72	329.92	18	27.126	27.467	27.808
-28	291.59	300.09	308.58	19	25.902	26.219	26.535
-27	271.45	279.25	287.05	20	24.743	25.036	25.329
-26	248.06	255.09	262.11	21	23.643	23.915	24.188
-25	227.70	234.06	240.42	22	22.602	22.854	23.106
-24	214.42	220.32	226.23	23	21.622	21.849	22.076
-23	204.31	209.86	215.41	24	20.683	20.899	21.114
-22	195.33	200.56	205.79	25	19.800	20.000	20.200
-21	187.45	192.39	197.33	26	18.955	19.151	19.348
-20	177.71	182.32	186.93	27	18.158	18.351	18.543
-19	172.23	176.63	181.03	28	17.407	17.596	17.786
-18	164.14	168.27	172.40	29	16.700	16.887	17.073
-17	156.11	159.98	163.84	30	16.037	16.220	16.403
-16	148.23	151.85	155.46	31	15.379	15.559	15.738
-15	140.59	143.96	147.33	32	14.744	14.920	15.096
-14	133.23	136.37	139.52	33	14.130	14.302	14.475
-13	126.20	129.13	132.06	34	13.537	13.706	13.875
-12	119.52	122.25	124.98	35	12.965	13.130	13.295
-11	113.21	115.74	118.28	36	12.414	12.575	12.737
-10	107.26	109.62	111.98	37	11.885	12.042	12.200
-9	101.67	103.87	106.07	38	11.378	11.532	11.686
-8	96.435	98.485	100.53	39	10.895	11.046	11.196
-7	91.540	93.449	95.359	40	10.437	10.584	10.731
-6	86.968	88.748	90.528	41	10.005	10.148	10.291
-5	82.700	84.360	86.020	42	9.5986	9.7388	9.8790
-4	78.336	79.879	81.421	43	9.2201	9.3572	9.4943
-3	74.363	75.798	77.232	44	8.8697	9.0040	9.1383
-2	70.709	72.046	73.384	45	8.5483	8.6800	8.8117
-1	67.322	68.569	69.815	46	8.2271	8.3560	8.4849
0	64.083	65.320	66.557	47	7.9178	8.0440	8.1702
1	61.109	62.264	63.420	48	7.6201	7.7436	7.8671
2	58.295	59.374	60.454	49	7.3336	7.4544	7.5752
3	55.619	56.627	57.636	50	7.0578	7.1760	7.2942
4	53.064	54.007	54.949	51	6.7927	6.9082	7.0237
5	50.621	51.500	52.379	52	6.5378	6.6508	6.7638
6	48.277	49.097	49.917	53	6.2930	6.4034	6.5138
7	46.028	46.792	47.557	54	6.0581	6.1660	6.2739
8	43.867	44.580	45.292	55	5.8325	5.9380	6.0435
9	41.793	42.456	43.119	56	5.6165	5.7196	5.8227
10	39.804	40.420	41.036	57	5.4095	5.5102	5.6109
11	37.874	38.446	39.018	58	5.2116	5.3100	5.4084
12	36.060	36.592	37.123	59	5.0224	5.1186	5.2148
13	34.352	34.846	35.341	60	4.8419	4.9360	5.0301
14	32.742	33.201	33.659	61	4.6712	4.7632	4.8552
15	31.220	31.646	32.072	62	4.5041	4.5940	4.6839
16	29.780	30.176	30.572	63	4.3415	4.4294	4.5173

R ---- T 分 度 表

$R_{25℃}$=20.00KΩ ±1%					$B_{25/50}$: 3950		
T（℃）	R（KΩ） Min	R（KΩ） Center	R（KΩ） Max	T（℃）	R（KΩ） Min	R（KΩ） Center	R（KΩ） Max
64	4.183	4.2692	4.355	111	0.9358	0.9670	0.9982
65	4.030	4.1140	4.198	112	0.9092	0.9398	0.9704
66	3.882	3.9642	4.046	113	0.8836	0.9136	0.9436
67	3.740	3.8200	3.900	114	0.8587	0.8880	0.9173
68	3.604	3.6814	3.759	115	0.8346	0.8634	0.8922
69	3.473	3.5492	3.625	116	0.8112	0.8394	0.8676
70	3.349	3.4230	3.497	117	0.7888	0.8164	0.8440
71	3.231	3.3032	3.376	118	0.7669	0.7940	0.8211
72	3.119	3.1900	3.261	119	0.7459	0.7724	0.7989
73	3.014	3.0832	3.152	120	0.7256	0.7516	0.7776
74	2.915	2.9830	3.051	121	0.7055	0.7310	0.7565
75	2.823	2.8896	2.956	122	0.6868	0.7118	0.7368
76	2.740	2.8046	2.870	123	0.6689	0.6934	0.7179
77	2.658	2.7220	2.786	124	0.6517	0.6758	0.6999
78	2.579	2.6416	2.704	125	0.6355	0.6592	0.6829
79	2.502	2.5632	2.625	126	0.6199	0.6432	0.6665
80	2.427	2.4868	2.547	127	0.6047	0.6276	0.6505
81	2.353	2.4122	2.471	128	0.5901	0.6126	0.6351
82	2.281	2.3394	2.397	129	0.5759	0.5980	0.6201
83	2.212	2.2684	2.325	130	0.5619	0.5836	0.6053
84	2.143	2.1988	2.254	131	0.5481	0.5694	0.5907
85	2.076	2.1306	2.185	132	0.5345	0.5554	0.5763
86	2.011	2.0638	2.117	133	0.5210	0.5416	0.5622
87	1.947	1.9986	2.051	134	0.5076	0.5278	0.5480
88	1.884	1.9344	1.985	135	0.4942	0.5140	0.5338
89	1.822	1.8716	1.921	136	0.4820	0.5014	0.5208
90	1.761	1.8100	1.859	137	0.4697	0.4888	0.5079
91	1.718	1.7658	1.814	138	0.4577	0.4764	0.4951
92	1.672	1.7194	1.766	139	0.4460	0.4644	0.4828
93	1.626	1.6718	1.718	140	0.4346	0.4526	0.4706
94	1.578	1.6234	1.669	141	0.4235	0.4412	0.4589
95	1.530	1.5744	1.619	142	0.4129	0.4302	0.4475
96	1.482	1.5256	1.569	143	0.4026	0.4196	0.4366
97	1.435	1.4772	1.520	144	0.3929	0.4096	0.4263
98	1.388	1.4298	1.471	145	0.3838	0.4002	0.4166
99	1.343	1.3836	1.424	146	0.3750	0.3912	0.4074
100	1.299	1.3388	1.378	147	0.3671	0.3830	0.3989
101	1.257	1.2958	1.334	148	0.3595	0.3752	0.3909
102	1.217	1.2548	1.292	149	0.3527	0.3682	0.3837
103	1.179	1.2162	1.253	150	0.3465	0.3618	0.3771
104	1.144	1.1798	1.216				
105	1.1106	1.1458	1.1810				
106	1.0795	1.1140	1.1485				
107	1.0492	1.0830	1.1168				
108	1.0196	1.0528	1.0860				
109	0.9909	1.0234	1.0559				
110	0.9630	0.9948	1.0266				