

APPROVAL SHEET OF DELIVERY SPECIFICATION

规格书

客户名称 (CUSTOMER): _____

产品名称 (PRODUCT ITEM): 负温度传感器

客户料号 (CUSTOMER PART NO.): _____

规格型号 (PART NO.): MF52F103F3435FA17XXU

编制日期 (DATE): 2020-09-19

供货商确认 (SUPPLIER CONFIRM)			客户确认 (CUSTOMER CONFIRM)		
制作 (Edited)	审核 (Check)	批准 (Approve)	制作 (Edited)	审核 (Check)	批准 (Approve)
成宏	黄东明				

_____ 公司

确认收到此规格书，兹同意此规格书作为我公司的验收标准。

(收到该规格书后请在上一行相应处签字回传我司技术部)

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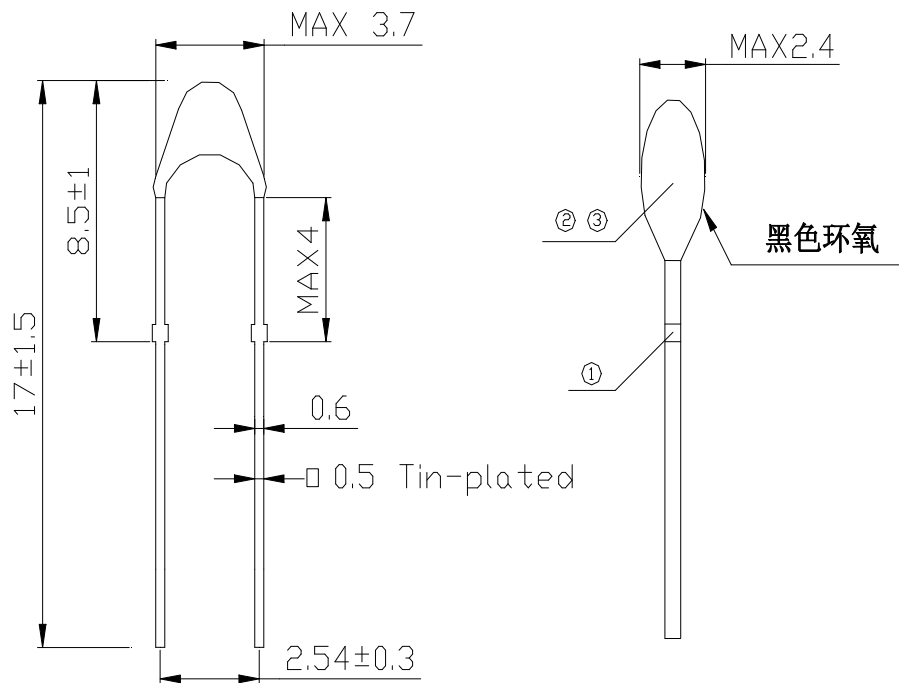
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版本 Version	变更记录 Revise content	提出 Forwarder	日期 Date
A/1	首版	成宏	2020/9/19

1、外形尺寸 (Exterior dimension)

(单位: mm)



2、外型规格 (Exterior specification)

序号 Serial number	材料名称 Material name	规格/型号 Specifications / Models	材质 Texture of material	产地 Place of Origin
2-1.	WIRE (导线)	L=17*2.5MM		H.H
2-2.	EPOXY FILLING (环氧树脂)	NB-1/ BLACK		K.W
2-3.	THERMISTOR(电阻)	R25=10KΩ±1% B25/85=3435K±1%		S.M

3、电气特性 (Electrial characteristics)

序号 Serial number	项目 Item	符号 Symbol	测试条件 Test Conditions	最小值 Min.	正常值 Nor.	最大值 Max.	单位 Unit
3-1.	Resistance At 25°C	R25	Ta=25±0.05°C P _T ≦0.1mw	9.9	10	10.1	kΩ



3-2.	B Constant	B25/85	$B=LN \frac{R_{T1}}{R_{T2}} / \left(\frac{1}{T1} - \frac{1}{T2} \right)$	3400.6	3435	3469.3	k
3-3.	Thermal Dissipation Constant	σ	Ta=25±0.5°C	0.7	/	/	mw/°C
3-4.	Thermal Time Constant (in water)	τ	Ta=25±0.5°C	/	/	5	sec
3-5.	Insulation test	/	100Vdc	50	/	/	MΩ
3-6.	Operation Temperature Range	/	/	-30	/	+105	°C

4、可靠性试验 (Reliability Test)

序号 Serial number	项目 Item	变量 Variable	测试条件及方法 Test Conditions
4-1.	高温试验 Hightemp.test	ΔR/R25≤±3% ΔB/B≤±3% 耐电压、绝缘性能无变化。外观无损伤。 Voltage and insulation resistance. Appearance without damage	100±5°C, 1000±24h (Reference IEC60068-2-2/GB2423.2 test)
4-2.	低温试验 Low temp.test		-30±5°C, 1000±24h (Reference IEC60068-2-1/GB2423.1 test)
4-3.	耐潮湿试验 Humidity test		45±2°C,90%-95%RH 1000±24h (Reference IEC60068-2-3/GB2423.3 test)
4-4.	温度循环试验 Temp. cycle test		-30°C×30min→25°C×5min→100°C×30min→25°C×5min, X 5Cycles (Reference IEC60068-2-14/GB2423.22 test)
4-5.	负荷通电试验 Load test		在常温常湿通电 DC0.3mA,500hrs At normal temperature and humidity, DC0.3mA, 500hrs.
4-6.	跌落试验 Drop test		从 1m 高处自由落下混凝土地板, 共进行 10 次。 Free fall from the 1m height of the concrete floor, a total of 10 times
4-7.	引线强度 LEAD WIRE Strength		Application of 5N force for 10 ±1s.
4-8.	振动试验 vibration test		频率范围: 10~55HZ 全振幅 1.52mm1 次循环 1 分钟, 方向和时间 X、Y、Z 轴各 2 小时。 Frequency range: 10~55HZ full amplitude 1.52mm1 times cycle 1 minutes, direction and time X, Y, Z axis each 2 hours
4-9.	可焊性 Solderability		Above 90% in the Terminal surface shall

		be with new solder 上锡表面在 90%以上	free) bathat 245±3e for 3±0.3 seconds. 将上锡端浸入到 245±3℃无铅锡炉中,时间 3±0.3S
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5、贮存方法 (Storage method)

5.1 贮存和运输过程中每堆叠放高度不超过 4 箱产品。During storage and transportation, no more than 4 boxes of products are placed in each stack.

5.2 允许用任何方法运输,但要避免雨、雪的直接或间接的淋袭和机械损伤。Allows for the transport of any method, but to avoid direct or indirect rain and snow damage and mechanical damage.

5.3 产品应贮存环境在温度为-10℃/+45℃,相对湿度不大于 80%,周围环境不应有酸性、碱性物质及腐蚀气体或辐射源。Products should be stored in the environment at a temperature of minus 10 degrees C / C, 45 degrees Celsius, the relative humidity is less than 80%, the surrounding environment should not be acidic, alkaline substances and corrosive gases or radiation source.

6、检验标准 GB2828-2003 (Inspection standard GB2828-2003.)

项目 (Item)	判定标准 (Decision criteria)	检验水平 (Inspection level)	判定基准 Decision criteria
绝缘抵抗 Insulation test	DC100V/50MΩ↑	N=5	C=0
外观检查 Appearance check	无缺陷 No defect	S=3	C=0
制品长度 Product length	参考图纸 Reference drawing	N=5	C=0
外壳长度 Shell length	参考图纸 Reference drawing	N=5	C=0
阻值 RT1 resistance RT1	Reference resources Electrical characteristics 3-1	S=3	C=0
B Constant	Reference resources Electrical characteristics 3-2	N=5	C=0

7、R-T Table

TEMPERATURE VS RESISTANCE TABLE

Resistance 10k Ohms at 25deg. C

Resistance Tolerance +/- 1%

B Value 3435K at 25/85 deg. C

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东莞市安伏特电子有限公司

Dongguan Ampfort Electronics Co., Ltd.



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B Value Tolerance +/- 1 %

Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)
-30	120.5991	116.5089	112.5462
-29	114.3116	110.4932	106.7917
-28	108.3927	104.8272	101.3688
-27	102.8185	99.4883	96.2564
-26	97.5669	94.4558	91.4348
-25	92.6171	89.7101	86.8857
-24	87.9501	85.2332	82.5920
-23	83.5479	81.0082	78.5378
-22	79.3940	77.0194	74.7084
-21	75.4728	73.2523	71.0899
-20	71.7700	69.6931	67.6695
-19	68.2720	66.3291	64.4351
-18	64.9663	63.1485	61.3754
-17	61.8412	60.1402	58.4802
-16	58.8858	57.2939	55.7394
-15	56.0899	54.5998	53.1440
-14	53.4439	52.0490	50.6855
-13	50.9389	49.6330	48.3557
-12	48.5666	47.3439	46.1473
-11	46.3192	45.1743	44.0532
-10	44.1895	43.1172	42.0668
-9	42.1705	41.1663	40.1820
-8	40.2558	39.3153	38.3930
-7	38.4396	37.5587	36.6943
-6	36.7162	35.8910	35.0810
-5	35.0802	34.3074	33.5481
-4	33.5269	32.8029	32.0914
-3	32.0515	31.3734	30.7065
-2	30.6497	30.0145	29.3896
-1	29.3174	28.7225	28.1368
0	28.0508	27.4936	26.9448
1	26.8464	26.3245	25.8102
2	25.7006	25.2119	24.7300
3	24.6103	24.1527	23.7013
4	23.5726	23.1442	22.7213
5	22.5846	22.1835	21.7874
6	21.6436	21.2682	20.8973
7	20.7472	20.3959	20.0486

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8	19.8931	19.5644	19.2392
9	19.0789	18.7714	18.4670
10	18.3027	18.0151	17.7303
11	17.5624	17.2935	17.0270
12	16.8561	16.6048	16.3556
13	16.1823	15.9475	15.7145
14	15.5391	15.3198	15.1020
15	14.9251	14.7203	14.5168
16	14.3387	14.1475	13.9576
17	13.7786	13.6003	13.4229
18	13.2434	13.0772	12.9117
19	12.7320	12.5771	12.4228
20	12.2431	12.0988	11.9550
21	11.7756	11.6413	11.5074
22	11.3286	11.2037	11.0790
23	10.9009	10.7848	10.6689
24	10.4917	10.3839	10.2762
25	10.1000	10.0000	9.9000
26	9.7323	9.6324	9.5325
27	9.3800	9.2802	9.1806
28	9.0424	8.9428	8.8435
29	8.7186	8.6195	8.5206
30	8.4082	8.3096	8.2113
31	8.1105	8.0124	7.9147
32	7.8249	7.7275	7.6305
33	7.5508	7.4541	7.3579
34	7.2878	7.1919	7.0965
35	7.0353	6.9403	6.8458
36	6.7929	6.6987	6.6052
37	6.5601	6.4669	6.3744
38	6.3364	6.2442	6.1527
39	6.1216	6.0304	5.9400
40	5.9151	5.8250	5.7357
41	5.7167	5.6276	5.5394
42	5.5259	5.4380	5.3509
43	5.3425	5.2557	5.1698
44	5.1661	5.0804	4.9957
45	4.9964	4.9119	4.8283
46	4.8331	4.7498	4.6674
47	4.6761	4.5939	4.5127
48	4.5249	4.4439	4.3639

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49	4.3793	4.2995	4.2207
50	4.2392	4.1605	4.0830
51	4.1042	4.0268	3.9504
52	3.9742	3.8980	3.8228
53	3.8490	3.7739	3.7000
54	3.7283	3.6544	3.5817
55	3.6121	3.5393	3.4677
56	3.5000	3.4284	3.3580
57	3.3919	3.3215	3.2523
58	3.2877	3.2185	3.1504
59	3.1872	3.1191	3.0522
60	3.0903	3.0234	2.9575
61	2.9968	2.9310	2.8663
62	2.9066	2.8419	2.7783
63	2.8196	2.7559	2.6934
64	2.7355	2.6729	2.6115
65	2.6544	2.5929	2.5325
66	2.5761	2.5156	2.4563
67	2.5004	2.4410	2.3827
68	2.4274	2.3690	2.3117
69	2.3568	2.2994	2.2432
70	2.2886	2.2322	2.1770
71	2.2227	2.1673	2.1131
72	2.1590	2.1046	2.0513
73	2.0974	2.0440	1.9917
74	2.0379	1.9854	1.9340
75	1.9804	1.9288	1.8783
76	1.9247	1.8740	1.8245
77	1.8709	1.8211	1.7725
78	1.8188	1.7699	1.7221
79	1.7685	1.7204	1.6735
80	1.7197	1.6725	1.6264
81	1.6725	1.6262	1.5809
82	1.6269	1.5813	1.5369
83	1.5827	1.5379	1.4943
84	1.5399	1.4959	1.4531
85	1.4984	1.4553	1.4132
86	1.4583	1.4159	1.3746
87	1.4194	1.3778	1.3372
88	1.3817	1.3408	1.3010
89	1.3452	1.3051	1.2660

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90	1.3099	1.2704	1.2320
91	1.2756	1.2368	1.1991
92	1.2424	1.2043	1.1673
93	1.2102	1.1728	1.1364
94	1.1789	1.1422	1.1065
95	1.1487	1.1126	1.0775
96	1.1193	1.0839	1.0494
97	1.0908	1.0560	1.0222
98	1.0632	1.0290	0.9958
99	1.0364	1.0028	0.9702
100	1.0104	0.9774	0.9453
101	0.9851	0.9527	0.9212
102	0.9606	0.9288	0.8979
103	0.9368	0.9055	0.8752
104	0.9137	0.8830	0.8532
105	0.8913	0.8611	0.8319
106	0.8696	0.8399	0.8111
107	0.8484	0.8193	0.7910
108	0.8279	0.7992	0.7715
109	0.8079	0.7798	0.7525
110	0.7886	0.7609	0.7341
111	0.7697	0.7425	0.7162
112	0.7514	0.7247	0.6989
113	0.7336	0.7074	0.6820
114	0.7164	0.6906	0.6656
115	0.6996	0.6742	0.6497
116	0.6832	0.6583	0.6342
117	0.6673	0.6429	0.6192
118	0.6519	0.6278	0.6046
119	0.6369	0.6132	0.5904
120	0.6223	0.5990	0.5766