久尹股份有限公司 **JOYIN CO., LTD.**

SPECIFICATION FOR APPROVAL

JA-237-A

Customer: 航嘉

Products Name : NTC Sensor

JOYIN P/N :

JAS103J410JA260002B

MODEL No. :

JAS103J410JA

ISSUE DATE : Nov-06-2018

REV. NO :

REV. DATE :

EDITED BY *Nico.Kuo*	CHECKED BY	APPROVED BY

CUSTOMER APPROVAL

☐ **Approval**

☐ **Approval with the following change**

☐ **Reject with the following reasons**

CUSTOMER SIGNATURE **DATE**

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REVISED RECORD SHEET

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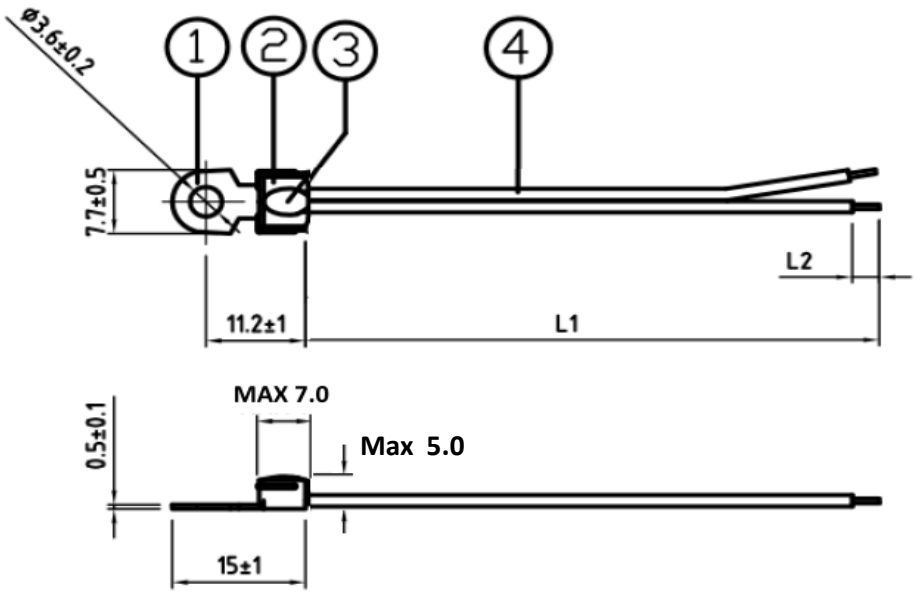
Part Number Code

JAS	103	J	410	J	A	26	0002	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

No.	Item	Digit	Specification
(1)	Product Type	JAS	JOYIN NTC Thermistor JAS type
(2)	Resistance at 25℃	103	10 x 10^3 = 10 KΩ
(3)	Tolerance of R25℃	J	±5%
(4)	B Value	410	4100K
(5)	Tolerance of B Value	J	±5%
(6)	Definition of B Value	A	B25/50
(7)	Wire Gauge	26	# 26
(8)	Optional Suffix	0002	Internal Control Code
(9)	Wire Connector Type	B	TS & Connected

Structure and Dimensions



Dimensions

Unit：mm

Symbol	L1	L2
尺寸	50 ± 3	3 +1.5/-0

No.	Material List	Specification	Remark
1	TERMINAL	B40320BL-2#	
2	COATING RESIN	BLACK EPOXY	
3	NTC Thermistor	JSR103J410JA R25:10 KΩ±5% , B25/50:4100K±5%	
4	LEAD WIRE	UL4413, AWG 26 X 2C , TS , 150℃ , 300V Black	

Electrical Characteristics

Part No.	Zero Power Resistance at 25℃	Tolerance of R_{25}	B25/50 Value	Tolerance of B Value
	R_{25}(KΩ)	(± %)	(K)	(± %)
JAS103J410JA260002B	10	5	4100	5

Part No.	Dissipation Factor	Thermal Time Constant	Operating Temperature Range
	δ (mW/℃)	τ (sec.)	T_L~T_U(℃)
JAS103J410JA260002B	Approx. 2.0	Approx. 10	-40 ~ +125

Mechanical Characteristics

Item	Test condition and method	Technical Requirements
Tensile	Applying 9.8N（1KGF）,last 1 minute.	No obvious damage
Free fall	After 5 times natural fall to a maple board from 1m high.	No obvious damage

Reliability

Mechanical Testing		
Test description	Test condition	Test requirement
Robustness of terminations	1. Tensile to horizontal direction : Hold the thermistor body so that lead wire shall be horizontal. After 5N loading weight was applied to the lead wire horizontally for one minute.	$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
	2. Tensile to vertical direction: One of lead wires is fixed, another one is slowly loaded the tension of one Newton and keep this tension for one minute.	
Resistance to soldering heat	Terminals of lead wire are immersed in solder in bath at 260± 5℃ for 10±1 seconds.	$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
Solderability	Terminals of lead wire are immersed in solder (Pb free) bath at 245±3℃ for 3±0.3 seconds.	Above 90% in the terminal surface shall be with new solder
Free fall	After three times natural fall to a maple board from 75cm high	$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$

Environmental Testing				
Test description	Test condition			Test requirement
Dry heat	Test sample shall be exposed in air at 105℃ for 1000 hours.After being stored in room temperature and humidity for one hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
Damp heat	Test sample shall be exposed in 40℃, 90～95%RH for 1000 hours. After being stored in room temperature and humidity for one hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
High temperature load	DC 0.1mA current shall be applied to the test samples in air at 100℃ for 1000 hours. After being stored in room temperature and humidity for one hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
Low temperature storage	Test sample shall be exposed in air at -40℃ for 1000 hours. After being stored in room temperature and humidity for one hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
Rapidchange of temperature	Temperature cycle shall be repeated five cycles 1.-40℃ keeping 30 min 2.Room temperature keeping 5 min 3.125℃ keeping 30 min 4.Room temperature keeping 5 min After being stored in room temperature and humidity for one hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$
Room temperature load	Pmax 160mW shall be applied to the test samples in the room ambient temperature for 1000 hours. After being stored in room temperature and humidity for 1 hour.			$\triangle R_{25}/R_{25} \leqq \pm 3\%$ $\triangle B_{25/85} \leqq \pm 1\%$

RoHS Compliant Declaration

We hereby declare that the components delivered to your company are compliant with RoHS directive 2011/65/EU

Storage condition of products

(I) Storage Conditions :

1. Storage Temperature : -10 ~ +40℃

2. Relative Humidity : ≦75%RH

3. Keep away from corrosive atmosphere and sunlight.

(II) Period of Storage : 1 year

Safety Approval

(Model No.： JAS103J410JA)

*** UL 1434 & CUL recognized**
(UL File # XGPU2.E171531)
(CUL File # XGPU8.E171531)

*** TÜV / EN60539-1:2008 recognized**
(File # R 50354317)

Certificate

(1) IATF 16949 : 2016 Certificate

(2) ISO 9001 : 2015 Certificate

(3) ISO 14001 : 2015 Certificate

SGS Tset Report

(1) REACH CC_2017_70132A Test Report

(2) RoHS+HF CE_2018_83589 Test Report

R-T TABLE

Type No：JAS103J410JA

R25 = 10 KOhm ± 5 %

B25/50 = 4100 K ± 5 %

Temp. ℃	Rmax Ω	R nor. Ω	R min Ω	Temp. Tolerance ℃	
-40	426219	342803	259387	4.11	-4.11
-39	400568	323156	245745	4.02	-4.02
-38	376369	304557	232745	3.95	-3.95
-37	353562	286966	220371	3.87	-3.87
-36	332086	270346	208605	3.80	-3.80
-35	311879	254654	197429	3.74	-3.74
-34	292879	239851	186824	3.67	-3.67
-33	275024	225895	176766	3.61	-3.61
-32	258254	212745	167236	3.55	-3.55
-31	242512	200361	158210	3.50	-3.50
-30	227739	188703	149668	3.44	-3.44
-29	213881	177734	141586	3.39	-3.39
-28	200886	167415	133945	3.33	-3.33
-27	188701	157711	126721	3.28	-3.28
-26	177280	148588	119895	3.23	-3.23
-25	166576	140011	113447	3.19	-3.19
-24	156544	131951	107357	3.14	-3.14
-23	147144	124375	101606	3.09	-3.09
-22	138336	117256	96176	3.05	-3.05
-21	130083	110567	91051	3.00	-3.00
-20	122350	104281	86212	2.96	-2.96
-19	115104	98375	81645	2.92	-2.92
-18	108314	92824	77335	2.87	-2.87
-17	101950	87608	73266	2.83	-2.83
-16	95985	82706	69426	2.79	-2.79
-15	90394	78097	65801	2.75	-2.75
-14	85152	73765	62379	2.71	-2.71
-13	80237	69692	59148	2.67	-2.67
-12	75627	65862	56098	2.63	-2.63
-11	71303	62260	53218	2.59	-2.59
-10	67246	58872	50498	2.55	-2.55
-9	63438	55684	47929	2.50	-2.50
-8	59865	52684	45502	2.46	-2.46

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R25 = 10 KOhm ± 5 %

B25/50 = 4100 K ± 5 %

Temp. ℃	Rmax Ω	R nor. Ω	R min Ω	Temp. Tolerance ℃	
-7	56510	49860	43210	2.42	-2.42
-6	53360	47201	41043	2.39	-2.39
-5	50400	44698	38995	2.35	-2.35
-4	47620	42339	37059	2.31	-2.31
-3	45007	40118	35228	2.27	-2.27
-2	42551	38024	33497	2.23	-2.23
-1	40241	36050	31859	2.19	-2.19
0	38069	34190	30310	2.15	-2.15
1	36025	32435	28844	2.11	-2.11
2	34102	30779	27456	2.07	-2.07
3	32292	29217	26142	2.02	-2.02
4	30587	27742	24897	1.98	-1.98
5	28981	26350	23718	1.94	-1.94
6	27468	25035	22601	1.90	-1.90
7	26042	23792	21543	1.86	-1.86
8	24698	22618	20539	1.82	-1.82
9	23430	21509	19588	1.78	-1.78
10	22234	20460	18685	1.74	-1.74
11	21106	19467	17829	1.70	-1.70
12	20041	18529	17016	1.66	-1.66
13	19035	17640	16245	1.61	-1.61
14	18086	16799	15513	1.57	-1.57
15	17189	16003	14818	1.53	-1.53
16	16341	15249	14157	1.49	-1.49
17	15539	14535	13530	1.44	-1.44
18	14781	13857	12934	1.40	-1.40
19	14065	13216	12367	1.36	-1.36
20	13386	12607	11827	1.31	-1.31
21	12744	12030	11315	1.27	-1.27
22	12137	11482	10827	1.23	-1.23
23	11561	10962	10363	1.18	-1.18
24	11016	10469	9921	1.14	-1.14
25	10500	10000	9500	1.09	-1.09

R-T TABLE

Type No：JAS103J410JA

R25 = 10 KOhm ± 5 %

B25/50 = 4100 K ± 5 %

Temp. ℃	Rmax Ω	R nor. Ω	R min Ω	Temp. Tolerance ℃	
26	10055	9555	9055	1.15	-1.15
27	9631	9132	8633	1.21	-1.21
28	9227	8730	8233	1.27	-1.27
29	8842	8348	7854	1.33	-1.33
30	8476	7985	7494	1.38	-1.38
31	8126	7640	7153	1.44	-1.44
32	7793	7311	6829	1.50	-1.50
33	7475	6998	6521	1.56	-1.56
34	7172	6700	6229	1.62	-1.62
35	6882	6417	5952	1.68	-1.68
36	6606	6147	5688	1.74	-1.74
37	6342	5890	5437	1.80	-1.80
38	6091	5645	5199	1.86	-1.86
39	5850	5411	4973	1.92	-1.92
40	5621	5189	4757	1.99	-1.99
41	5401	4976	4552	2.05	-2.05
42	5191	4774	4357	2.11	-2.11
43	4991	4581	4171	2.17	-2.17
44	4799	4397	3994	2.23	-2.23
45	4616	4221	3826	2.30	-2.30
46	4440	4053	3665	2.36	-2.36
47	4272	3892	3512	2.42	-2.42
48	4112	3739	3366	2.49	-2.49
49	3958	3593	3227	2.55	-2.55
50	3811	3453	3095	2.62	-2.62
51	3670	3319	2968	2.68	-2.68
52	3535	3191	2848	2.75	-2.75
53	3405	3069	2733	2.81	-2.81
54	3281	2952	2623	2.88	-2.88
55	3162	2840	2518	2.94	-2.94
56	3048	2733	2418	3.01	-3.01
57	2939	2631	2322	3.08	-3.08
58	2834	2533	2231	3.14	-3.14

R-T TABLE

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R25 = 10 KOhm ± 5 %

B25/50 = 4100 K ± 5 %

Temp. ℃	Rmax Ω	R nor. Ω	R min Ω	Temp. Tolerance ℃	
59	2734	2439	2144	3.21	-3.21
60	2637	2349	2060	3.28	-3.28
61	2545	2263	1981	3.35	-3.35
62	2456	2180	1904	3.41	-3.41
63	2371	2101	1831	3.48	-3.48
64	2289	2025	1762	3.55	-3.55
65	2210	1953	1695	3.62	-3.62
66	2135	1883	1631	3.69	-3.69
67	2062	1816	1570	3.76	-3.76
68	1993	1752	1511	3.83	-3.83
69	1926	1690	1455	3.90	-3.90
70	1861	1631	1401	3.97	-3.97
71	1799	1575	1350	4.05	-4.05
72	1740	1520	1301	4.12	-4.12
73	1683	1468	1253	4.19	-4.19
74	1628	1418	1208	4.26	-4.26
75	1575	1370	1165	4.34	-4.34
76	1524	1323	1123	4.41	-4.41
77	1475	1279	1083	4.48	-4.48
78	1427	1236	1045	4.56	-4.56
79	1382	1195	1008	4.63	-4.63
80	1338	1155	973	4.71	-4.71
81	1296	1117	939	4.79	-4.79
82	1255	1081	907	4.86	-4.86
83	1216	1046	875	4.94	-4.94
84	1178	1012	845	5.02	-5.02
85	1142	979	817	5.09	-5.09
86	1107	948	789	5.17	-5.17
87	1073	918	762	5.25	-5.25
88	1041	889	737	5.33	-5.33
89	1009	861	712	5.41	-5.41
90	979	834	689	5.49	-5.49
91	950	808	666	5.57	-5.57

R-T TABLE

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R25 = 10 KOhm ± 5 %

B25/50 = 4100 K ± 5 %

Temp. ℃	Rmax Ω	R nor. Ω	R min Ω	Temp. Tolerance ℃	
92	921	783	644	5.65	-5.65
93	894	759	623	5.73	-5.73
94	868	735	603	5.81	-5.81
95	843	713	583	5.90	-5.90
96	818	691	565	5.98	-5.98
97	795	671	547	6.06	-6.06
98	772	650	529	6.15	-6.15
99	750	631	513	6.23	-6.23
100	728	612	496	6.32	-6.32
101	708	594	481	6.40	-6.40
102	688	577	466	6.49	-6.49
103	669	560	452	6.58	-6.58
104	650	544	438	6.66	-6.66
105	632	528	424	6.75	-6.75
106	615	513	411	6.84	-6.84
107	598	499	399	6.93	-6.93
108	582	484	387	7.02	-7.02
109	566	471	375	7.11	-7.11
110	551	458	364	7.20	-7.20
111	536	445	354	7.29	-7.29
112	522	433	343	7.39	-7.39
113	508	421	333	7.48	-7.48
114	495	409	323	7.58	-7.58
115	482	398	314	7.67	-7.67
116	469	387	305	7.77	-7.77
117	457	377	296	7.86	-7.86
118	446	367	288	7.96	-7.96
119	434	357	280	8.06	-8.06
120	423	348	272	8.16	-8.16
121	413	338	264	8.26	-8.26
122	402	330	257	8.36	-8.36
123	392	321	250	8.46	-8.46
124	382	313	243	8.56	-8.56
125	373	305	236	8.66	-8.66