

Product Specification

Number: L-KLS26-TMSN12-103F3950F
-L500

Name: NTC Thermistors Resistors

Customer: _____

Date: 2025-04-30

Customer Signature:



WWW.KLSELE.COM

NINGBO KLS ELECTRONIC CO; LTD

Tel : 0086-574-86828566

Fax : 0086-574-86824882

**ADD : NO. 8-1, RONGXIA RD. XIAPU SHANQIAN
INDUSTRIAL ZONE BEILUN NINGBO ZHEJIANG.**

Compi	Check	Review	Approva
Jenny	Jack.C		

Part name	NTC Thermistors Resistors	Date	2025-04-30
Part number	L-KLS26-TMSN12-103F3950F-L500	Edition	V1
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1、 ELECTRICAL CHARACTERISTIC

Item	Symbol	Test Condition	Performance	Unit
1.1 Rated resistance	$R_{25^{\circ}\text{C}}$	$+25\pm0.05^{\circ}\text{C}$	$10\pm1\%$	k Ω
1.2 B value	$B_{25/50}$	$+25\pm0.05^{\circ}\text{C}$ 、 $+50\pm0.05^{\circ}\text{C}$	$3950\pm1\%$	K
1.3 Time constant	τ	In water	≤ 10	sec
1.4 Dissipation factor	δ	In still air	≥ 2.1	mW/ $^{\circ}\text{C}$
1.5 Voltage withstanding	U	AC1500V (Peak value) ,in water, 1mA, 1s	No destroy or spark	V
1.6 Insulation resistance	Ri	DC500V	≥ 100	M Ω
1.7 Max.power	Pmax	Ambient Temp. +25 $^{\circ}\text{C}$	≤ 60	mW

2、 RELIABILITY TEST

2.1 Intensity : Fix the probe ,Pull the lead by striped wire end with 10N force for 10 ± 1 sec.
No visible damage.

2.2 High Temp.Store (In air)

$105\pm 5^{\circ}\text{C}$ 1000h

$\Delta R_{25}/R_{25} \leq \pm 3\%$

2.3 Low Temp.Store (In air)

$-40\pm 5^{\circ}\text{C}$ 1000h

$\Delta R_{25}/R_{25} \leq \pm 2\%$

2.4 Heat and Humidity Stability

$40\pm 2^{\circ}\text{C}$ 98%RH 1000h

$\Delta R_{25}/R_{25} \leq \pm 2\%$

2.5 Temperature Shift

$-40\pm 5^{\circ}\text{C} \times 30\text{min} \rightarrow 105\pm 5^{\circ}\text{C} \times 30\text{min}$ 10 times

$\Delta R_{25}/R_{25} \leq 2\%$

3、 OPERATION NOTICE

3.1 Application: Temperature measure and control;

3.2 Operating Temp. Range: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$;

3.3 Avoid measure error caused by self heat when over current pass through;

3.4 Avoid excessive heat shock , The hot air blow should be at least 10mm to the probe in case heat

shrink protection tube need to be attached .

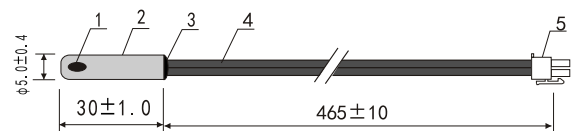
3.5 Probe (except for probe-in temperature measurement)cannot be used in high humidity environment (relative humidity > 80%), electrolysis, salt, acid,alkaline and organic solvents and other corrosive environments.

3.6 During the use of the sensor, please handle it gently, and minimize the bending and pulling of the probe and lead, so as to avoid abnormal sensor resistance due to damage to the sensor structure.

4、 RESISTANCE TEMPERATURE TABLE

(see accessory P/N:)

5、 SIZE DRAWING: (unit:mm)



Item	Name	Material Spec.	Qty.	Remark
1	Component	NTC Thermistor	1	MF5A
2	Tube	$\phi 5 \times 30$	1	SUS
3	Epoxy	Epoxy Potting class		Black
4	Wire	UL4411 AWG26	1	Black
5	Connector	5557-2R	1	White

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R-T TABLE							
R(25℃)=10kohm±1%				B(25/50)=3950±1%			
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)	
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX
-40	291.4	304.6	318.3	-4.3%	4.5%	-0.6	0.7
-39	274.4	286.6	299.4	-4.3%	4.4%	-0.6	0.7
-38	258.5	269.8	281.6	-4.2%	4.4%	-0.6	0.7
-37	243.5	254.0	265.0	-4.2%	4.3%	-0.6	0.7
-36	229.4	239.2	249.4	-4.1%	4.3%	-0.6	0.7
-35	216.2	225.3	234.8	-4.0%	4.2%	-0.6	0.6
-34	203.8	212.3	221.0	-4.0%	4.1%	-0.6	0.6
-33	192.2	200.0	208.1	-3.9%	4.1%	-0.6	0.6
-32	181.2	188.5	196.0	-3.9%	4.0%	-0.6	0.6
-31	170.9	177.7	184.7	-3.8%	3.9%	-0.6	0.6
-30	161.2	167.5	174.0	-3.8%	3.9%	-0.6	0.6
-29	152.1	158.0	164.0	-3.7%	3.8%	-0.6	0.6
-28	143.6	149.0	154.6	-3.6%	3.8%	-0.6	0.6
-27	135.5	140.6	145.8	-3.6%	3.7%	-0.6	0.6
-26	128.0	132.6	137.5	-3.5%	3.6%	-0.6	0.6
-25	120.8	125.2	129.7	-3.5%	3.6%	-0.6	0.6
-24	114.1	118.2	122.3	-3.4%	3.5%	-0.6	0.6
-23	107.8	111.6	115.5	-3.4%	3.5%	-0.6	0.6
-22	101.9	105.4	109.0	-3.3%	3.4%	-0.6	0.6
-21	96.34	99.57	102.9	-3.2%	3.3%	-0.6	0.6
-20	91.08	94.09	97.18	-3.2%	3.3%	-0.5	0.6
-19	86.11	88.90	91.77	-3.1%	3.2%	-0.5	0.6
-18	81.43	84.02	86.69	-3.1%	3.2%	-0.5	0.5
-17	77.04	79.44	81.92	-3.0%	3.1%	-0.5	0.5
-16	72.90	75.14	77.43	-3.0%	3.1%	-0.5	0.5
-15	69.01	71.09	73.22	-2.9%	3.0%	-0.5	0.5
-14	65.35	67.28	69.26	-2.9%	2.9%	-0.5	0.5
-13	61.90	63.69	65.53	-2.8%	2.9%	-0.5	0.5
-12	58.65	60.32	62.03	-2.8%	2.8%	-0.5	0.5
-11	55.59	57.14	58.73	-2.7%	2.8%	-0.5	0.5
-10	52.71	54.15	55.62	-2.7%	2.7%	-0.5	0.5
-9	50.02	51.36	52.72	-2.6%	2.7%	-0.5	0.5
-8	47.48	48.73	50.00	-2.6%	2.6%	-0.5	0.5
-7	45.09	46.25	47.43	-2.5%	2.6%	-0.5	0.5
-6	42.83	43.91	45.01	-2.5%	2.5%	-0.5	0.5
-5	40.70	41.70	42.72	-2.4%	2.5%	-0.5	0.5
-4	38.69	39.62	40.57	-2.4%	2.4%	-0.4	0.5
-3	36.78	37.65	38.54	-2.3%	2.3%	-0.4	0.4
-2	34.99	35.80	36.62	-2.3%	2.3%	-0.4	0.4
-1	33.29	34.04	34.80	-2.2%	2.2%	-0.4	0.4
0	31.68	32.38	33.09	-2.2%	2.2%	-0.4	0.4
1	30.16	30.81	31.47	-2.1%	2.1%	-0.4	0.4
2	28.72	29.32	29.93	-2.1%	2.1%	-0.4	0.4

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R-T				TABLE				P/N: CA422303-1	
R(25℃)=10kohm±1%				B(25/50)=3950±1%					
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)			
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX		
3	27.35	27.91	28.48	-2.0%	2.0%	-0.4	0.4		
4	26.06	26.58	27.11	-2.0%	2.0%	-0.4	0.4		
5	24.83	25.31	25.80	-1.9%	1.9%	-0.4	0.4		
6	23.67	24.12	24.57	-1.9%	1.9%	-0.4	0.4		
7	22.56	22.98	23.41	-1.8%	1.8%	-0.4	0.4		
8	21.52	21.91	22.30	-1.8%	1.8%	-0.4	0.4		
9	20.53	20.89	21.25	-1.7%	1.7%	-0.4	0.4		
10	19.58	19.92	20.25	-1.7%	1.7%	-0.3	0.4		
11	18.69	19.00	19.31	-1.6%	1.7%	-0.3	0.3		
12	17.84	18.12	18.41	-1.6%	1.6%	-0.3	0.3		
13	17.03	17.29	17.56	-1.5%	1.6%	-0.3	0.3		
14	16.26	16.51	16.75	-1.5%	1.5%	-0.3	0.3		
15	15.53	15.76	15.99	-1.4%	1.5%	-0.3	0.3		
16	14.83	15.04	15.25	-1.4%	1.4%	-0.3	0.3		
17	14.16	14.36	14.56	-1.4%	1.4%	-0.3	0.3		
18	13.53	13.71	13.89	-1.3%	1.3%	-0.3	0.3		
19	12.93	13.10	13.27	-1.3%	1.3%	-0.3	0.3		
20	12.36	12.52	12.67	-1.2%	1.2%	-0.3	0.3		
21	11.82	11.96	12.10	-1.2%	1.2%	-0.3	0.3		
22	11.30	11.43	11.56	-1.1%	1.1%	-0.3	0.3		
23	10.81	10.93	11.05	-1.1%	1.1%	-0.2	0.2		
24	10.34	10.45	10.56	-1.0%	1.0%	-0.2	0.2		
25	9.900	10.00	10.10	-1.0%	1.0%	-0.2	0.2		
26	9.471	9.571	9.671	-1.0%	1.0%	-0.2	0.2		
27	9.064	9.163	9.263	-1.1%	1.1%	-0.3	0.3		
28	8.676	8.775	8.874	-1.1%	1.1%	-0.3	0.3		
29	8.307	8.405	8.504	-1.2%	1.2%	-0.3	0.3		
30	7.956	8.053	8.152	-1.2%	1.2%	-0.3	0.3		
31	7.621	7.718	7.816	-1.3%	1.3%	-0.3	0.3		
32	7.303	7.399	7.495	-1.3%	1.3%	-0.3	0.3		
33	6.999	7.094	7.190	-1.3%	1.3%	-0.3	0.3		
34	6.710	6.804	6.899	-1.4%	1.4%	-0.3	0.3		
35	6.434	6.527	6.621	-1.4%	1.4%	-0.3	0.3		
36	6.172	6.263	6.356	-1.5%	1.5%	-0.4	0.4		
37	5.921	6.011	6.102	-1.5%	1.5%	-0.4	0.4		
38	5.682	5.771	5.861	-1.5%	1.6%	-0.4	0.4		
39	5.454	5.542	5.630	-1.6%	1.6%	-0.4	0.4		
40	5.236	5.323	5.410	-1.6%	1.6%	-0.4	0.4		
41	5.028	5.113	5.199	-1.7%	1.7%	-0.4	0.4		
42	4.830	4.913	4.998	-1.7%	1.7%	-0.4	0.4		
43	4.640	4.723	4.806	-1.7%	1.8%	-0.4	0.4		
44	4.459	4.540	4.622	-1.8%	1.8%	-0.5	0.5		
45	4.286	4.366	4.446	-1.8%	1.8%	-0.5	0.5		

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R-T TABLE							
R(25℃)=10kohm±1%				B(25/50)=3950±1%			
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)	
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX
46	4.121	4.199	4.278	-1.9%	1.9%	-0.5	0.5
47	3.963	4.039	4.117	-1.9%	1.9%	-0.5	0.5
48	3.811	3.887	3.963	-1.9%	2.0%	-0.5	0.5
49	3.667	3.740	3.815	-2.0%	2.0%	-0.5	0.5
50	3.528	3.601	3.674	-2.0%	2.0%	-0.5	0.5
51	3.396	3.467	3.539	-2.0%	2.1%	-0.5	0.6
52	3.269	3.338	3.409	-2.1%	2.1%	-0.6	0.6
53	3.147	3.216	3.285	-2.1%	2.2%	-0.6	0.6
54	3.031	3.098	3.166	-2.2%	2.2%	-0.6	0.6
55	2.920	2.985	3.051	-2.2%	2.2%	-0.6	0.6
56	2.813	2.877	2.942	-2.2%	2.3%	-0.6	0.6
57	2.710	2.773	2.837	-2.3%	2.3%	-0.6	0.6
58	2.612	2.673	2.736	-2.3%	2.3%	-0.6	0.7
59	2.518	2.578	2.639	-2.3%	2.4%	-0.7	0.7
60	2.428	2.486	2.547	-2.4%	2.4%	-0.7	0.7
61	2.341	2.399	2.457	-2.4%	2.5%	-0.7	0.7
62	2.258	2.314	2.372	-2.4%	2.5%	-0.7	0.7
63	2.178	2.233	2.290	-2.5%	2.5%	-0.7	0.7
64	2.102	2.156	2.211	-2.5%	2.6%	-0.7	0.7
65	2.028	2.081	2.135	-2.5%	2.6%	-0.7	0.8
66	1.958	2.009	2.062	-2.6%	2.6%	-0.7	0.8
67	1.890	1.940	1.992	-2.6%	2.7%	-0.8	0.8
68	1.825	1.874	1.925	-2.6%	2.7%	-0.8	0.8
69	1.762	1.811	1.860	-2.7%	2.7%	-0.8	0.8
70	1.702	1.750	1.798	-2.7%	2.8%	-0.8	0.8
71	1.644	1.691	1.738	-2.7%	2.8%	-0.8	0.8
72	1.588	1.634	1.680	-2.8%	2.8%	-0.8	0.9
73	1.535	1.579	1.625	-2.8%	2.9%	-0.8	0.9
74	1.483	1.527	1.571	-2.8%	2.9%	-0.9	0.9
75	1.434	1.476	1.520	-2.9%	3.0%	-0.9	0.9
76	1.386	1.428	1.471	-2.9%	3.0%	-0.9	0.9
77	1.341	1.381	1.423	-2.9%	3.0%	-0.9	0.9
78	1.297	1.336	1.377	-3.0%	3.1%	-0.9	0.9
79	1.254	1.293	1.333	-3.0%	3.1%	-0.9	1.0
80	1.213	1.251	1.291	-3.0%	3.1%	-1.0	1.0
81	1.174	1.211	1.250	-3.1%	3.2%	-1.0	1.0
82	1.136	1.173	1.210	-3.1%	3.2%	-1.0	1.0
83	1.100	1.136	1.172	-3.1%	3.2%	-1.0	1.0
84	1.065	1.100	1.136	-3.2%	3.3%	-1.0	1.0
85	1.031	1.065	1.100	-3.2%	3.3%	-1.0	1.1
86	0.999	1.032	1.067	-3.2%	3.3%	-1.0	1.1
87	0.968	1.001	1.034	-3.3%	3.4%	-1.1	1.1
88	0.938	0.970	1.003	-3.3%	3.4%	-1.1	1.1

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R-T TABLE P/N:CA422303-1							
R(25℃)=10kohm±1%				B(25/50)=3950±1%			
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)	
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX
89	0.909	0.940	0.972	-3.3%	3.4%	-1.1	1.1
90	0.881	0.912	0.943	-3.3%	3.4%	-1.1	1.1
91	0.854	0.884	0.915	-3.4%	3.5%	-1.1	1.2
92	0.828	0.858	0.888	-3.4%	3.5%	-1.1	1.2
93	0.803	0.832	0.861	-3.4%	3.5%	-1.2	1.2
94	0.779	0.807	0.836	-3.5%	3.6%	-1.2	1.2
95	0.756	0.783	0.811	-3.5%	3.6%	-1.2	1.2
96	0.733	0.760	0.788	-3.5%	3.6%	-1.2	1.2
97	0.712	0.738	0.765	-3.5%	3.7%	-1.2	1.3
98	0.691	0.716	0.743	-3.6%	3.7%	-1.2	1.3
99	0.671	0.696	0.722	-3.6%	3.7%	-1.2	1.3
100	0.651	0.676	0.701	-3.6%	3.8%	-1.3	1.3
101	0.632	0.656	0.681	-3.7%	3.8%	-1.3	1.3
102	0.614	0.637	0.661	-3.7%	3.8%	-1.3	1.3
103	0.596	0.619	0.643	-3.7%	3.8%	-1.3	1.4
104	0.579	0.601	0.625	-3.7%	3.9%	-1.3	1.4
105	0.562	0.584	0.607	-3.8%	3.9%	-1.3	1.4
106	0.546	0.568	0.590	-3.8%	3.9%	-1.4	1.4
107	0.531	0.552	0.574	-3.8%	4.0%	-1.4	1.4
108	0.516	0.536	0.558	-3.9%	4.0%	-1.4	1.5
109	0.501	0.522	0.543	-3.9%	4.0%	-1.4	1.5
110	0.487	0.507	0.528	-3.9%	4.1%	-1.4	1.5
111	0.474	0.493	0.513	-3.9%	4.1%	-1.4	1.5
112	0.461	0.480	0.499	-4.0%	4.1%	-1.5	1.5
113	0.448	0.467	0.486	-4.0%	4.1%	-1.5	1.5
114	0.436	0.454	0.473	-4.0%	4.2%	-1.5	1.6
115	0.424	0.442	0.460	-4.0%	4.2%	-1.5	1.6
116	0.412	0.430	0.448	-4.1%	4.2%	-1.5	1.6
117	0.401	0.418	0.436	-4.1%	4.3%	-1.6	1.6
118	0.390	0.407	0.425	-4.1%	4.3%	-1.6	1.6
119	0.380	0.396	0.413	-4.1%	4.3%	-1.6	1.7
120	0.370	0.386	0.403	-4.2%	4.3%	-1.6	1.7
121	0.360	0.376	0.392	-4.2%	4.4%	-1.6	1.7
122	0.350	0.366	0.382	-4.2%	4.4%	-1.6	1.7
123	0.341	0.356	0.372	-4.2%	4.4%	-1.7	1.7
124	0.332	0.347	0.363	-4.3%	4.5%	-1.7	1.7
125	0.324	0.338	0.353	-4.3%	4.5%	-1.7	1.8
126	0.315	0.330	0.344	-4.3%	4.5%	-1.7	1.8
127	0.307	0.321	0.336	-4.3%	4.5%	-1.7	1.8
128	0.299	0.313	0.327	-4.4%	4.6%	-1.7	1.8
129	0.292	0.305	0.319	-4.4%	4.6%	-1.8	1.8
130	0.284	0.297	0.311	-4.4%	4.6%	-1.8	1.9
131	0.277	0.290	0.303	-4.4%	4.6%	-1.8	1.9

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R-T				TABLE				P/N:CA422303-1	
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Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)			
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX		
132	0.270	0.283	0.296	-4.5%	4.7%	-1.8	1.9		
133	0.263	0.276	0.289	-4.5%	4.7%	-1.8	1.9		
134	0.257	0.269	0.282	-4.5%	4.7%	-1.9	1.9		
135	0.250	0.262	0.275	-4.5%	4.7%	-1.9	2.0		
136	0.244	0.256	0.268	-4.6%	4.8%	-1.9	2.0		
137	0.238	0.250	0.262	-4.6%	4.8%	-1.9	2.0		
138	0.232	0.244	0.255	-4.6%	4.8%	-1.9	2.0		
139	0.227	0.238	0.249	-4.6%	4.8%	-2.0	2.0		
140	0.221	0.232	0.243	-4.7%	4.9%	-2.0	2.1		
141	0.216	0.226	0.238	-4.7%	4.9%	-2.0	2.1		
142	0.211	0.221	0.232	-4.7%	4.9%	-2.0	2.1		
143	0.206	0.216	0.226	-4.7%	4.9%	-2.0	2.1		
144	0.201	0.211	0.221	-4.7%	5.0%	-2.0	2.1		
145	0.196	0.206	0.216	-4.8%	5.0%	-2.1	2.2		
146	0.191	0.201	0.211	-4.8%	5.0%	-2.1	2.2		
147	0.187	0.196	0.206	-4.8%	5.0%	-2.1	2.2		
148	0.182	0.192	0.201	-4.8%	5.1%	-2.1	2.2		
149	0.178	0.187	0.197	-4.9%	5.1%	-2.1	2.3		
150	0.174	0.183	0.192	-4.9%	5.1%	-2.2	2.3		