

Product Specification

Number: L-KLS6-MF52-D1-503K3977J
-L40
Name: NTC Thermistors Resistors
Specification: _____
Customer: _____
Date: 2024-05-30

Customer Signature:



WWW.KLSELE.COM

NINGBO KLS ELECTRONIC CO; LTD

Tel : 0086-574-86828566

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

Compile	Check	Review	Approval
Jenny	Jack.C		

NINGBO KLS ELECTRONIC CO; LTD

1、ELECTRICAL CHARACTERISTIC

Item	Symbol	Test Condition	Performance	Unit
1.1 Rated resistance	R25℃	+25±0.05℃	50±10%	kΩ
1.2 B value	B25/85	+25±0.05℃、+85±0.05℃	3977±5%	K
1.3 Time constant	τ	In still air	≤20	sec
1.4 Dissipation factor	δ	In still air	≥2.1	mW/℃
1.5 Max.Power	Pmax	Ambient Temp. +25℃	≤30	mW

2、Reliability test

2.1 Intensity : Fix the thermistor probe, Pull the lead by striped wire end with 5N force for 10±1sec.
No visible damage.

2.2 Solderability:
260±10℃ 2±0.5sec
Cover the solder joint evenly with solder
ΔR25/R25≤±3%

2.3 Solder heat resist:
260±10℃ 5±1sec Peel off the lead wire insulation
solder distance 6mm away from thermistor probe.
ΔR25/R25≤±3%

2.4 High temp.store (in air)
105±3℃ 1000h
ΔR25/R25≤±3%

2.5 Low temp.store (in air)
-40±2℃ 1000h
ΔR25/R25≤±3%

2.6 Heat and Humidity Stability
40±2℃ 98%RH 1000h ΔR25/R25≤±3%

2.7 Temperature shift:
-40±5℃ ×30min ↔ 105±5℃ ×30min 10times
ΔR25/R25≤2%

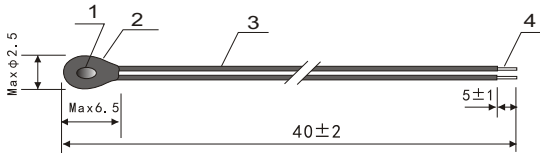
3、Operation Notice:

- 3.1 Application: Temperature measure and control;
- 3.2 Operating temperature range: -40℃~+105℃ ;
- 3.3 Min. cutting length ≥6mm;
- 3.4 Avoid measurement error caused by excessive current

- 3.5 While adding heat shrink tube ,the outlet of hot air blower should be at least 10mm to the thermistor lest excessive heat shock.
- 3.6 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.
- 3.7 In view of the structural characteristics of epoxy components, users should avoid excessive stretching and bending force from the lead wire on the component encapsulating head when using it. If the lead wire needs to be bent, the bending point or the force point should be controlled on the leads beyond 6 mm below the encapsulating head , so as not to strain the chip, cause resistance drift or even open circuit, especially when the component is heated.

4、Resistance-Temperature Table: (see accessory)

5、SIZE DRAWING: unit:mm



Item	Material &spec.
1	Thermistor chip(A)
2	Encapsulating epoxy resin (black)
3	Teflon 30#1/0.25OD0.6mm Cu/Ag (black)
4	Trip

NINGBO KLS ELECTRONIC CO; LTD

R-T				TABLE				P/N:L-KLS6-MF52-D1-503K3977J-L40
R(25℃)=50kohm±10%				B(25/85)=3977±5%				
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)		
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX	
-40	1129	1486	1937	-24.0%	30.3%	-3.6	4.5	
-39	1063	1396	1813	-23.8%	29.9%	-3.6	4.5	
-38	1002	1311	1698	-23.6%	29.5%	-3.6	4.5	
-37	944.3	1232	1590	-23.3%	29.1%	-3.6	4.5	
-36	890.4	1158	1490	-23.1%	28.7%	-3.6	4.4	
-35	839.9	1089	1397	-22.8%	28.3%	-3.6	4.4	
-34	792.6	1024	1310	-22.6%	27.9%	-3.5	4.4	
-33	748.2	963.9	1229	-22.4%	27.5%	-3.5	4.3	
-32	706.6	907.5	1154	-22.1%	27.2%	-3.5	4.3	
-31	667.5	854.8	1084	-21.9%	26.8%	-3.5	4.3	
-30	630.9	805.5	1018	-21.7%	26.4%	-3.5	4.3	
-29	596.4	759.3	956.9	-21.4%	26.0%	-3.5	4.2	
-28	564.1	716.0	899.7	-21.2%	25.7%	-3.5	4.2	
-27	533.7	675.5	846.3	-21.0%	25.3%	-3.5	4.2	
-26	505.1	637.4	796.4	-20.8%	24.9%	-3.4	4.1	
-25	478.3	601.8	749.7	-20.5%	24.6%	-3.4	4.1	
-24	453.0	568.3	706.0	-20.3%	24.2%	-3.4	4.1	
-23	429.2	536.9	665.1	-20.1%	23.9%	-3.4	4.0	
-22	406.7	507.5	626.8	-19.8%	23.5%	-3.4	4.0	
-21	385.6	479.8	590.9	-19.6%	23.2%	-3.4	4.0	
-20	365.7	453.8	557.3	-19.4%	22.8%	-3.4	4.0	
-19	347.0	429.3	525.8	-19.2%	22.5%	-3.3	3.9	
-18	329.3	406.3	496.2	-19.0%	22.1%	-3.3	3.9	
-17	312.6	384.6	468.5	-18.7%	21.8%	-3.3	3.9	
-16	296.8	364.2	442.5	-18.5%	21.5%	-3.3	3.8	
-15	281.9	345.0	418.0	-18.3%	21.2%	-3.3	3.8	
-14	267.9	327.0	395.1	-18.1%	20.8%	-3.3	3.8	
-13	254.6	310.0	373.5	-17.8%	20.5%	-3.2	3.7	
-12	242.1	293.9	353.3	-17.6%	20.2%	-3.2	3.7	
-11	230.3	278.8	334.2	-17.4%	19.9%	-3.2	3.7	
-10	219.1	264.6	316.3	-17.2%	19.6%	-3.2	3.6	
-9	208.5	251.2	299.5	-17.0%	19.2%	-3.2	3.6	
-8	198.6	238.5	283.7	-16.8%	18.9%	-3.1	3.6	
-7	189.1	226.6	268.8	-16.5%	18.6%	-3.1	3.5	
-6	180.1	215.3	254.8	-16.3%	18.3%	-3.1	3.5	
-5	171.6	204.6	241.5	-16.1%	18.0%	-3.1	3.5	
-4	163.6	194.6	229.1	-15.9%	17.7%	-3.1	3.4	
-3	156.0	185.0	217.3	-15.7%	17.4%	-3.0	3.4	
-2	148.7	176.0	206.1	-15.5%	17.1%	-3.0	3.3	
-1	141.9	167.4	195.7	-15.3%	16.9%	-3.0	3.3	

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R-T				TABLE				P/N:L-KLS6-MF52-D1-503K3977J-L40
R(25℃)=50kohm±10%				B(25/85)=3977±5%				
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)		
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX	
0	135.3	159.4	185.7	-15.1%	16.6%	-3.0	3.3	
1	129.1	151.6	176.3	-14.9%	16.3%	-3.0	3.2	
2	123.2	144.3	167.4	-14.6%	16.0%	-2.9	3.2	
3	117.6	137.4	159.0	-14.4%	15.7%	-2.9	3.2	
4	112.3	130.9	151.1	-14.2%	15.4%	-2.9	3.1	
5	107.2	124.7	143.6	-14.0%	15.1%	-2.9	3.1	
6	102.5	118.9	136.5	-13.8%	14.9%	-2.8	3.1	
7	97.92	113.3	129.9	-13.6%	14.6%	-2.8	3.0	
8	93.61	108.1	123.6	-13.4%	14.3%	-2.8	3.0	
9	89.51	103.1	117.6	-13.2%	14.1%	-2.8	2.9	
10	85.61	98.40	112.0	-13.0%	13.8%	-2.7	2.9	
11	81.90	93.91	106.6	-12.8%	13.5%	-2.7	2.9	
12	78.37	89.66	101.5	-12.6%	13.3%	-2.7	2.8	
13	75.01	85.62	96.75	-12.4%	13.0%	-2.7	2.8	
14	71.81	81.78	92.20	-12.2%	12.7%	-2.6	2.7	
15	68.77	78.14	87.89	-12.0%	12.5%	-2.6	2.7	
16	65.85	74.65	83.78	-11.8%	12.2%	-2.6	2.7	
17	63.07	71.34	79.88	-11.6%	12.0%	-2.5	2.6	
18	60.42	68.18	76.17	-11.4%	11.7%	-2.5	2.6	
19	57.89	65.19	72.66	-11.2%	11.5%	-2.5	2.5	
20	55.49	62.33	69.33	-11.0%	11.2%	-2.4	2.5	
21	53.19	59.62	66.16	-10.8%	11.0%	-2.4	2.5	
22	50.99	57.04	63.15	-10.6%	10.7%	-2.4	2.4	
23	48.90	54.57	60.30	-10.4%	10.5%	-2.4	2.4	
24	46.91	52.23	57.58	-10.2%	10.2%	-2.3	2.3	
25	45.00	50.00	55.00	-10.0%	10.0%	-2.3	2.3	
26	43.01	47.89	52.79	-10.2%	10.2%	-2.4	2.4	
27	41.12	45.88	50.69	-10.4%	10.5%	-2.4	2.5	
28	39.31	43.96	48.67	-10.6%	10.7%	-2.5	2.5	
29	37.60	42.13	46.74	-10.8%	10.9%	-2.5	2.6	
30	35.96	40.39	44.90	-11.0%	11.2%	-2.6	2.7	
31	34.41	38.72	43.14	-11.1%	11.4%	-2.7	2.7	
32	32.92	37.13	41.46	-11.3%	11.6%	-2.7	2.8	
33	31.51	35.61	39.84	-11.5%	11.9%	-2.8	2.9	
34	30.17	34.16	38.30	-11.7%	12.1%	-2.8	2.9	
35	28.88	32.78	36.82	-11.9%	12.3%	-2.9	3.0	
36	27.66	31.45	35.41	-12.1%	12.6%	-3.0	3.1	
37	26.49	30.19	34.06	-12.2%	12.8%	-3.0	3.2	
38	25.38	28.98	32.76	-12.4%	13.0%	-3.1	3.2	
39	24.32	27.83	31.52	-12.6%	13.3%	-3.2	3.3	

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R-T				TABLE				P/N:L-KLS6-MF52-D1-503K3977J-L40
R(25℃)=50kohm±10%				B(25/85)=3977±5%				
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)		
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX	
40	23.31	26.72	30.33	-12.8%	13.5%	-3.2	3.4	
41	22.34	25.67	29.19	-13.0%	13.7%	-3.3	3.5	
42	21.42	24.66	28.10	-13.1%	14.0%	-3.3	3.5	
43	20.54	23.69	27.05	-13.3%	14.2%	-3.4	3.6	
44	19.70	22.77	26.05	-13.5%	14.4%	-3.5	3.7	
45	18.90	21.89	25.09	-13.6%	14.6%	-3.5	3.8	
46	18.13	21.04	24.17	-13.8%	14.9%	-3.6	3.9	
47	17.40	20.23	23.28	-14.0%	15.1%	-3.7	3.9	
48	16.70	19.46	22.44	-14.1%	15.3%	-3.7	4.0	
49	16.03	18.71	21.62	-14.3%	15.5%	-3.8	4.1	
50	15.40	18.00	20.84	-14.5%	15.8%	-3.8	4.2	
51	14.77	17.30	20.07	-14.7%	16.0%	-3.9	4.3	
52	14.17	16.63	19.33	-14.8%	16.2%	-4.0	4.3	
53	13.60	16.00	18.63	-15.0%	16.5%	-4.0	4.4	
54	13.05	15.38	17.95	-15.2%	16.7%	-4.1	4.5	
55	12.53	14.80	17.30	-15.3%	16.9%	-4.2	4.6	
56	12.04	14.24	16.68	-15.5%	17.1%	-4.2	4.7	
57	11.57	13.71	16.09	-15.6%	17.4%	-4.3	4.8	
58	11.11	13.20	15.52	-15.8%	17.6%	-4.3	4.8	
59	10.68	12.71	14.97	-16.0%	17.8%	-4.4	4.9	
60	10.27	12.24	14.45	-16.1%	18.0%	-4.5	5.0	
61	9.875	11.794	13.945	-16.3%	18.2%	-4.5	5.1	
62	9.499	11.365	13.463	-16.4%	18.5%	-4.6	5.2	
63	9.138	10.955	13.000	-16.6%	18.7%	-4.7	5.3	
64	8.794	10.561	12.556	-16.7%	18.9%	-4.7	5.4	
65	8.464	10.184	12.130	-16.9%	19.1%	-4.8	5.4	
66	8.149	9.822	11.720	-17.0%	19.3%	-4.9	5.5	
67	7.847	9.475	11.327	-17.2%	19.5%	-4.9	5.6	
68	7.558	9.143	10.949	-17.3%	19.8%	-5.0	5.7	
69	7.282	8.824	10.586	-17.5%	20.0%	-5.1	5.8	
70	7.017	8.518	10.237	-17.6%	20.2%	-5.2	5.9	
71	6.773	8.236	9.915	-17.8%	20.4%	-5.2	6.0	
72	6.539	7.965	9.604	-17.9%	20.6%	-5.3	6.1	
73	6.315	7.704	9.305	-18.0%	20.8%	-5.4	6.2	
74	6.099	7.453	9.017	-18.2%	21.0%	-5.4	6.3	
75	5.892	7.212	8.739	-18.3%	21.2%	-5.5	6.4	
76	5.692	6.979	8.472	-18.4%	21.4%	-5.6	6.5	
77	5.501	6.756	8.213	-18.6%	21.6%	-5.7	6.6	
78	5.317	6.540	7.964	-18.7%	21.8%	-5.7	6.7	
79	5.140	6.333	7.724	-18.8%	22.0%	-5.8	6.8	

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R(25℃)=50kohm±10%				B(25/85)=3977±5%				
Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)		
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX	
80	4.970	6.133	7.493	-19.0%	22.2%	-5.9	6.9	
81	4.806	5.941	7.269	-19.1%	22.4%	-6.0	7.0	
82	4.649	5.755	7.053	-19.2%	22.6%	-6.0	7.1	
83	4.497	5.576	6.845	-19.3%	22.8%	-6.1	7.2	
84	4.352	5.404	6.644	-19.5%	22.9%	-6.2	7.3	
85	4.211	5.238	6.450	-19.6%	23.1%	-6.3	7.4	
86	4.073	5.074	6.258	-19.7%	23.3%	-6.3	7.5	
87	3.940	4.916	6.072	-19.9%	23.5%	-6.4	7.6	
88	3.811	4.763	5.893	-20.0%	23.7%	-6.5	7.7	
89	3.687	4.615	5.719	-20.1%	23.9%	-6.6	7.8	
90	3.568	4.473	5.551	-20.2%	24.1%	-6.6	7.9	
91	3.453	4.335	5.389	-20.4%	24.3%	-6.7	8.0	
92	3.342	4.202	5.232	-20.5%	24.5%	-6.8	8.1	
93	3.234	4.074	5.080	-20.6%	24.7%	-6.9	8.2	
94	3.131	3.950	4.933	-20.7%	24.9%	-6.9	8.3	
95	3.031	3.830	4.790	-20.8%	25.1%	-7.0	8.4	
96	2.935	3.714	4.653	-21.0%	25.3%	-7.1	8.5	
97	2.842	3.602	4.519	-21.1%	25.5%	-7.2	8.7	
98	2.753	3.494	4.390	-21.2%	25.7%	-7.2	8.8	
99	2.666	3.389	4.265	-21.3%	25.8%	-7.3	8.9	
100	2.583	3.288	4.144	-21.5%	26.0%	-7.4	9.0	
101	2.502	3.191	4.027	-21.6%	26.2%	-7.5	9.1	
102	2.425	3.096	3.914	-21.7%	26.4%	-7.6	9.2	
103	2.350	3.005	3.805	-21.8%	26.6%	-7.6	9.3	
104	2.278	2.917	3.699	-21.9%	26.8%	-7.7	9.4	
105	2.208	2.832	3.596	-22.0%	27.0%	-7.8	9.5	
106	2.141	2.750	3.497	-22.1%	27.2%	-7.9	9.6	
107	2.076	2.670	3.401	-22.3%	27.4%	-7.9	9.8	
108	2.013	2.593	3.308	-22.4%	27.5%	-8.0	9.9	
109	1.952	2.519	3.217	-22.5%	27.7%	-8.1	10.0	
110	1.894	2.447	3.130	-22.6%	27.9%	-8.2	10.1	
111	1.837	2.377	3.045	-22.7%	28.1%	-8.3	10.2	
112	1.783	2.310	2.963	-22.8%	28.3%	-8.3	10.3	
113	1.730	2.245	2.884	-22.9%	28.5%	-8.4	10.5	
114	1.679	2.182	2.807	-23.0%	28.6%	-8.5	10.6	
115	1.630	2.121	2.732	-23.2%	28.8%	-8.6	10.7	
116	1.582	2.062	2.660	-23.3%	29.0%	-8.7	10.8	
117	1.536	2.004	2.589	-23.4%	29.2%	-8.7	10.9	
118	1.491	1.949	2.521	-23.5%	29.4%	-8.8	11.0	
119	1.448	1.895	2.455	-23.6%	29.6%	-8.9	11.2	

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Temp.	Resistance(kΩ)			resistance tol. (%)		Temp.tol. (℃)		
℃	Rmin	R(t)Normal	Rmax	MIN	MAX	MIN	MAX	
120	1.407	1.843	2.391	-23.7%	29.7%	-9.0	11.3	
121	1.366	1.793	2.329	-23.8%	29.9%	-9.1	11.4	
122	1.327	1.744	2.269	-23.9%	30.1%	-9.2	11.5	
123	1.290	1.697	2.211	-24.0%	30.3%	-9.2	11.7	
124	1.253	1.651	2.154	-24.1%	30.5%	-9.3	11.8	
125	1.218	1.607	2.099	-24.2%	30.6%	-9.4	11.9	
126	1.184	1.564	2.046	-24.3%	30.8%	-9.5	12.0	
127	1.151	1.522	1.994	-24.4%	31.0%	-9.6	12.1	
128	1.119	1.482	1.944	-24.5%	31.2%	-9.7	12.3	
129	1.088	1.443	1.895	-24.6%	31.3%	-9.7	12.4	
130	1.058	1.405	1.848	-24.7%	31.5%	-9.8	12.5	
131	1.029	1.368	1.802	-24.8%	31.7%	-9.9	12.7	
132	1.001	1.333	1.757	-24.9%	31.9%	-10.0	12.8	
133	0.974	1.298	1.714	-25.0%	32.0%	-10.1	12.9	
134	0.947	1.265	1.672	-25.1%	32.2%	-10.2	13.0	
135	0.922	1.232	1.631	-25.2%	32.4%	-10.3	13.2	
136	0.897	1.201	1.592	-25.3%	32.5%	-10.3	13.3	
137	0.873	1.170	1.553	-25.4%	32.7%	-10.4	13.4	
138	0.850	1.140	1.516	-25.5%	32.9%	-10.5	13.6	
139	0.827	1.112	1.479	-25.6%	33.1%	-10.6	13.7	
140	0.805	1.084	1.444	-25.7%	33.2%	-10.7	13.8	
141	0.784	1.057	1.409	-25.8%	33.4%	-10.8	14.0	
142	0.764	1.030	1.376	-25.9%	33.6%	-10.9	14.1	
143	0.744	1.005	1.343	-26.0%	33.7%	-10.9	14.2	
144	0.724	0.980	1.312	-26.1%	33.9%	-11.0	14.4	
145	0.706	0.956	1.281	-26.2%	34.1%	-11.1	14.5	
146	0.687	0.932	1.251	-26.2%	34.2%	-11.2	14.6	
147	0.670	0.909	1.222	-26.3%	34.4%	-11.3	14.8	
148	0.653	0.887	1.194	-26.4%	34.6%	-11.4	14.9	
149	0.636	0.866	1.166	-26.5%	34.7%	-11.5	15.0	
150	0.620	0.845	1.139	-26.6%	34.9%	-11.6	15.2	