

## 1) SCOPE

This specifications define ratings, dimension, insulation, climatic tests and mechanical characteristics for MLTA-4 type thermistor. **(Lead Free)**

2) PART NO. : MLTA-4-104H-26060-4480

## 3) RATING

3-1) Rated zero-power resistance  $R_{25}$  :  $100\text{ K}\Omega \pm 3\%$  (at  $25^\circ\text{C}$ )

3-2) B value.  $B_{25/85}$  :  $4,480\text{ K} \pm 1\%$

\*The B value is calculated using the zero-power resistance values measured at  $25^\circ\text{C}$  and  $85^\circ\text{C}$ .

3-3) Dissipation factor. :Approx. 2 mW/ $^\circ\text{C}$  (in air)

3-4) Thermal time constant. :Approx. 15 s (in air)

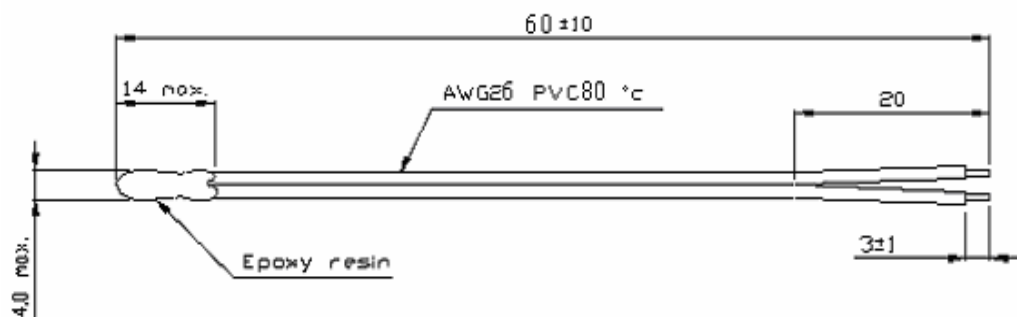
3-5) Maximum power rating. : 10 mW (at  $25^\circ\text{C}$ )

3-6) Category temperature range : -40 to  $125^\circ\text{C}$

(=Operating temperature range)

3-7) 26 AWG : UL Approval

## 4) DIMENSIONS UNIT:[mm]



## 5) Insulation(between epoxy resin and soldered terminals)

5-1 Dielectric withstanding voltage: AC 100V for one second.

5-2 Insulation resistance : Above  $100\text{ M}\Omega$  at DC 500V.

## 6) Climatic tests

### 6-1) Dry Heat

After the test samples were exposed in air at  $80^\circ\text{C}$  for 1,000 hours, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

#### 6-2) Damp heat

After the test samples were exposed in the humidity of 95% at 40°C for 1,000 hours, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

#### 6-3) Cold

After the test samples were exposed in air at -30°C for 1,000 hours, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

#### 6-4) Humidity load

After DC 1mA current was applied to the test samples in the temperature of 40°C and the humidity of 95% for 1,000 hours, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

#### 6-5) Change of temperature

One cycle of the change of temperature shall be carried out in the order of the following conditions.

.Room ambient temperature.( Initial value)

.At -30°C, for 30 minutes.

.Room ambient temperature, for 3 minutes.

.At + 80°C, for 30 minutes.

.Room ambient temperature, for 3 minutes.

After 100 cycles of change of temperature, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

### 7) Mechanical characteristics

#### 7-1) Robustness of terminations

\* Tensile to horizontal direction

Hold the thermistor body so that lead wire shall be horizontal. After 1 kg loading weight was applied to the lead wire horizontally for 10 seconds, there shall be no visible damage.

#### 7-2) Free fall

After three times natural fall to a maple board from 75cm high, there shall be no visible damage.

8) R-T characteristics

Part No. : **MLTA-4-104H-26060-4480**

**R : 100,000 ohms ± 3%**  
**B : 4480 °K ± 1%**

Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-40	4268516	4572000	4892654	-7.14	-6.64	7.01	-0.98	0.93
-39	3978017	4257815	4553191	-7.10	-6.57	6.94	-0.98	0.93
-38	3708952	3967018	4239221	-7.05	-6.51	6.86	-0.97	0.92
-37	3459626	3697744	3948694	-7.01	-6.44	6.79	-0.97	0.92
-36	3228487	3448286	3679735	-6.96	-6.37	6.71	-0.96	0.92
-35	3014111	3217082	3430631	-6.92	-6.31	6.64	-0.96	0.91
-34	2815195	3002699	3199810	-6.87	-6.24	6.56	-0.95	0.91
-33	2630542	2803825	2985834	-6.83	-6.18	6.49	-0.95	0.90
-32	2459054	2619257	2787386	-6.79	-6.12	6.42	-0.95	0.90
-31	2299723	2447889	2603255	-6.75	-6.05	6.35	-0.94	0.90
-30	2151623	2288708	2432335	-6.70	-5.99	6.28	-0.94	0.89
-29	2013903	2140783	2273608	-6.66	-5.93	6.20	-0.93	0.89
-28	1885782	2003259	2126139	-6.62	-5.86	6.13	-0.93	0.89
-27	1766540	1875351	1989072	-6.58	-5.80	6.06	-0.92	0.88
-26	1655514	1756334	1861617	-6.54	-5.74	5.99	-0.92	0.88
-25	1552096	1645545	1743051	-6.50	-5.68	5.93	-0.91	0.87
-24	1455724	1542372	1632707	-6.45	-5.62	5.86	-0.91	0.87
-23	1365881	1446251	1529971	-6.41	-5.56	5.79	-0.90	0.87
-22	1282091	1356662	1434279	-6.37	-5.50	5.72	-0.90	0.86
-21	1203914	1273129	1345112	-6.34	-5.44	5.65	-0.89	0.86
-20	1130945	1195210	1261990	-6.30	-5.38	5.59	-0.89	0.85
-19	1062810	1122499	1184472	-6.26	-5.32	5.52	-0.88	0.85
-18	999164	1054619	1112152	-6.22	-5.26	5.46	-0.88	0.85
-17	939686	991226	1044652	-6.18	-5.20	5.39	-0.87	0.84
-16	884083	931999	981628	-6.14	-5.14	5.32	-0.87	0.84
-15	832082	876643	922759	-6.10	-5.08	5.26	-0.86	0.83
-14	783431	824884	867749	-6.07	-5.03	5.20	-0.86	0.83
-13	737897	776471	816326	-6.03	-4.97	5.13	-0.85	0.82
-12	695263	731169	768237	-5.99	-4.91	5.07	-0.85	0.82
-11	655331	688762	723248	-5.96	-4.85	5.01	-0.84	0.81
-10	617914	649052	681144	-5.92	-4.80	4.94	-0.84	0.81
-9	582842	611851	641726	-5.88	-4.74	4.88	-0.83	0.81
-8	549956	576989	604807	-5.85	-4.69	4.82	-0.82	0.80
-7	519108	544307	570216	-5.81	-4.63	4.76	-0.82	0.80
-6	490160	513657	537796	-5.78	-4.57	4.70	-0.81	0.79
-5	462988	484902	507397	-5.74	-4.52	4.64	-0.81	0.79
-4	437472	457916	478885	-5.71	-4.46	4.58	-0.80	0.78
-3	413502	432580	452131	-5.67	-4.41	4.52	-0.80	0.78

-2	390978	408786	427020	-5.64	-4.36	4.46	-0.79	0.77
-1	369805	386431	403441	-5.61	-4.30	4.40	-0.79	0.77
0	349895	365422	381293	-5.57	-4.25	4.34	-0.78	0.76
1	331166	345669	360483	-5.54	-4.20	4.29	-0.77	0.76
2	313542	327093	340922	-5.51	-4.14	4.23	-0.77	0.75
3	296952	309616	322529	-5.47	-4.09	4.17	-0.76	0.75
4	281331	293168	305229	-5.44	-4.04	4.11	-0.76	0.74
5	266617	277684	288951	-5.41	-3.99	4.06	-0.75	0.74
6	252752	263102	273629	-5.38	-3.93	4.00	-0.74	0.73
7	239683	249364	259203	-5.35	-3.88	3.95	-0.74	0.73
8	227361	236419	245616	-5.32	-3.83	3.89	-0.73	0.72
9	215740	224215	232814	-5.28	-3.78	3.84	-0.73	0.72
10	204775	212708	220749	-5.25	-3.73	3.78	-0.72	0.71
11	194427	201853	209374	-5.22	-3.68	3.73	-0.71	0.70
12	184657	191610	198646	-5.19	-3.63	3.67	-0.71	0.70
13	175431	181942	188525	-5.16	-3.58	3.62	-0.70	0.69
14	166715	172814	178975	-5.13	-3.53	3.57	-0.69	0.69
15	158479	164193	169959	-5.10	-3.48	3.51	-0.69	0.68
16	150694	156048	161446	-5.07	-3.43	3.46	-0.68	0.68
17	143333	148350	153405	-5.04	-3.38	3.41	-0.68	0.67
18	136371	141074	145807	-5.02	-3.33	3.36	-0.67	0.66
19	129784	134192	138625	-4.99	-3.28	3.30	-0.66	0.66
20	123551	127683	131836	-4.96	-3.24	3.25	-0.66	0.65
21	117649	121525	125415	-4.93	-3.19	3.20	-0.65	0.65
22	112061	115696	119341	-4.90	-3.14	3.15	-0.64	0.64
23	106768	110177	113592	-4.87	-3.09	3.10	-0.64	0.63
24	101753	104951	108152	-4.85	-3.05	3.05	-0.63	0.63
25	97000	100000	103000	-4.82	-3.00	3.00	-0.62	0.62
26	92405	95309	98215	-4.79	-3.05	3.05	-0.64	0.64
27	88052	90862	93678	-4.76	-3.09	3.10	-0.65	0.65
28	83927	86646	89374	-4.74	-3.14	3.15	-0.66	0.66
29	80016	82648	85290	-4.71	-3.18	3.20	-0.68	0.68
30	76308	78855	81414	-4.68	-3.23	3.24	-0.69	0.69
31	72791	75256	77735	-4.66	-3.28	3.29	-0.71	0.70
32	69455	71840	74241	-4.63	-3.32	3.34	-0.72	0.72
33	66289	68597	70922	-4.61	-3.36	3.39	-0.74	0.73
34	63283	65517	67768	-4.58	-3.41	3.44	-0.75	0.74
35	60430	62591	64772	-4.56	-3.45	3.48	-0.76	0.76
36	57719	59811	61923	-4.53	-3.50	3.53	-0.78	0.77
37	55145	57169	59214	-4.51	-3.54	3.58	-0.79	0.79
38	52698	54657	56638	-4.48	-3.58	3.62	-0.81	0.80
39	50373	52268	54187	-4.46	-3.63	3.67	-0.82	0.81
40	48162	49996	51855	-4.43	-3.67	3.72	-0.84	0.83
41	46059	47835	49635	-4.41	-3.71	3.76	-0.85	0.84
42	44059	45778	47521	-4.38	-3.75	3.81	-0.87	0.86
43	42156	43820	45508	-4.36	-3.80	3.85	-0.88	0.87

44	40344	41955	43591	-4.34	-3.84	3.90	-0.90	0.89
45	38620	40179	41764	-4.31	-3.88	3.94	-0.91	0.90
46	36979	38488	40023	-4.29	-3.92	3.99	-0.93	0.91
47	35415	36876	38363	-4.27	-3.96	4.03	-0.95	0.93
48	33925	35340	36781	-4.24	-4.00	4.08	-0.96	0.94
49	32506	33876	35272	-4.22	-4.04	4.12	-0.98	0.96
50	31153	32479	33832	-4.20	-4.08	4.16	-0.99	0.97
51	29863	31148	32459	-4.18	-4.12	4.21	-1.01	0.99
52	28633	29877	31148	-4.15	-4.16	4.25	-1.02	1.00
53	27460	28665	29896	-4.13	-4.20	4.30	-1.04	1.02
54	26340	27508	28701	-4.11	-4.24	4.34	-1.06	1.03
55	25272	26403	27560	-4.09	-4.28	4.38	-1.07	1.05
56	24253	25349	26470	-4.07	-4.32	4.42	-1.09	1.06
57	23280	24341	25428	-4.04	-4.36	4.47	-1.10	1.08
58	22350	23379	24433	-4.02	-4.40	4.51	-1.12	1.09
59	21463	22459	23481	-4.00	-4.44	4.55	-1.14	1.11
60	20615	21581	22571	-3.98	-4.48	4.59	-1.15	1.12
61	19804	20740	21701	-3.96	-4.51	4.63	-1.17	1.14
62	19030	19937	20869	-3.94	-4.55	4.67	-1.19	1.16
63	18289	19169	20073	-3.92	-4.59	4.72	-1.20	1.17
64	17581	18434	19311	-3.90	-4.63	4.76	-1.22	1.19
65	16904	17731	18582	-3.88	-4.66	4.80	-1.24	1.20
66	16256	17058	17883	-3.86	-4.70	4.84	-1.25	1.22
67	15637	16414	17215	-3.84	-4.74	4.88	-1.27	1.23
68	15043	15798	16575	-3.82	-4.77	4.92	-1.29	1.25
69	14476	15207	15961	-3.80	-4.81	4.96	-1.31	1.27
70	13932	14642	15373	-3.78	-4.85	5.00	-1.32	1.28
71	13412	14100	14810	-3.76	-4.88	5.04	-1.34	1.30
72	12913	13581	14270	-3.74	-4.92	5.08	-1.36	1.31
73	12435	13083	13753	-3.72	-4.95	5.12	-1.37	1.33
74	11978	12607	13256	-3.70	-4.99	5.16	-1.39	1.35
75	11539	12149	12780	-3.68	-5.02	5.19	-1.41	1.36
76	11119	11711	12324	-3.67	-5.06	5.23	-1.43	1.38
77	10715	11290	11886	-3.65	-5.09	5.27	-1.45	1.40
78	10329	10887	11465	-3.63	-5.13	5.31	-1.46	1.41
79	9958	10500	11062	-3.61	-5.16	5.35	-1.48	1.43
80	9602	10129	10674	-3.59	-5.20	5.39	-1.50	1.45
81	9261	9772	10302	-3.57	-5.23	5.42	-1.52	1.46
82	8933	9430	9945	-3.56	-5.26	5.46	-1.54	1.48
83	8619	9101	9601	-3.54	-5.30	5.50	-1.55	1.50
84	8317	8785	9272	-3.52	-5.33	5.54	-1.57	1.51
85	8027	8482	8955	-3.50	-5.36	5.57	-1.59	1.53
86	7749	8191	8650	-3.49	-5.40	5.61	-1.61	1.55
87	7481	7911	8357	-3.47	-5.43	5.65	-1.63	1.56
88	7224	7642	8076	-3.45	-5.46	5.68	-1.65	1.58
89	6977	7383	7805	-3.44	-5.50	5.72	-1.66	1.60

90	6740	7134	7545	-3.42	-5.53	5.76	-1.68	1.62
91	6512	6895	7294	-3.40	-5.56	5.79	-1.70	1.63
92	6292	6665	7053	-3.39	-5.59	5.83	-1.72	1.65
93	6081	6444	6821	-3.37	-5.62	5.86	-1.74	1.67
94	5878	6231	6598	-3.35	-5.66	5.90	-1.76	1.69
95	5683	6026	6383	-3.34	-5.69	5.93	-1.78	1.70
96	5495	5828	6176	-3.32	-5.72	5.97	-1.80	1.72
97	5314	5639	5977	-3.30	-5.75	6.00	-1.82	1.74
98	5140	5456	5785	-3.29	-5.78	6.04	-1.84	1.76
99	4973	5280	5600	-3.27	-5.81	6.07	-1.86	1.78
100	4812	5110	5422	-3.26	-5.84	6.11	-1.88	1.79
101	4656	4947	5251	-3.24	-5.87	6.14	-1.90	1.81
102	4507	4789	5085	-3.23	-5.90	6.18	-1.92	1.83
103	4363	4638	4926	-3.21	-5.93	6.21	-1.94	1.85
104	4224	4492	4772	-3.19	-5.96	6.25	-1.96	1.87
105	4090	4351	4624	-3.18	-5.99	6.28	-1.98	1.89
106	3961	4215	4481	-3.16	-6.02	6.31	-2.00	1.90
107	3837	4084	4343	-3.15	-6.05	6.35	-2.02	1.92
108	3717	3957	4210	-3.13	-6.08	6.38	-2.04	1.94
109	3601	3836	4082	-3.12	-6.11	6.41	-2.06	1.96
110	3490	3718	3958	-3.11	-6.14	6.45	-2.08	1.98
111	3382	3605	3838	-3.09	-6.17	6.48	-2.10	2.00
112	3279	3495	3723	-3.08	-6.20	6.51	-2.12	2.02
113	3178	3390	3611	-3.06	-6.23	6.55	-2.14	2.03
114	3082	3288	3504	-3.05	-6.26	6.58	-2.16	2.05
115	2989	3189	3400	-3.03	-6.29	6.61	-2.18	2.07
116	2899	3094	3300	-3.02	-6.31	6.64	-2.20	2.09
117	2812	3002	3203	-3.01	-6.34	6.68	-2.22	2.11
118	2728	2914	3109	-2.99	-6.37	6.71	-2.24	2.13
119	2647	2828	3018	-2.98	-6.40	6.74	-2.26	2.15
120	2569	2745	2931	-2.96	-6.43	6.77	-2.28	2.17
121	2493	2665	2846	-2.95	-6.45	6.80	-2.31	2.19
122	2420	2588	2765	-2.94	-6.48	6.83	-2.33	2.21
123	2350	2513	2686	-2.92	-6.51	6.86	-2.35	2.23
124	2281	2441	2609	-2.91	-6.54	6.90	-2.37	2.25
125	2215	2371	2535	-2.90	-6.56	6.93	-2.39	2.27