



# Amphenol Advanced Sensors

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<b>PROVISIONAL TEST SPECIFICATION</b>	SAMPLE SERIAL No. <b>RM-0434</b>	ISSUE : <b>B</b>
CUSTOMER :	DATE : <b>19 January 2017</b>	QTY. :
CUSTOMER SERIAL No. <b>RM-0434</b>	ORIGINATOR : <b>Aiden</b>	PAGE 1 OF 4

## DESCRIPTION:

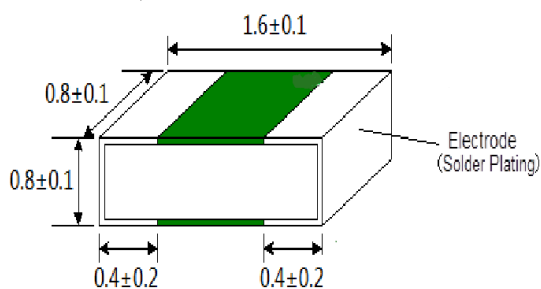
Surface mount NTC chip  
RoHS compliant

### 1. Scope

This specification is applicable to dimensions and electrical characteristics of SMD type chip thermistor **RM-0434**

### 2. Shape & Dimensions

Unit; mm



### 3. Electrical characteristics

Item	Standard	Test Method & Condition
1. Resistance (R25)	10kohm Tolerance is $\pm 1\%$	R <sub>25</sub> ; The resistance value at 25°C
2. B-value (B25/85)	3435K Tolerance is $\pm 1\%$	B25/85 ; Calculated by $\text{Ln} (R_{25}/R_{85}) / (1/T_{25}-1/T_{85})$ (T <sub>25</sub> , T <sub>85</sub> are absolute temperature values with for 25°C & 85°C respectively)
3. Maximum rated wattage (at 25°C)	100 mW	This value is measured in the still air with the sample which is soldered on a glass epoxy board t=1.6mm
4. Heat dissipation constant	1.0mW/°C	This value is measured in the still air with the sample which is soldered on a solder coated copper wire $\phi=0.25\text{mm}$
5. Operating temperature	-40~+125°C	

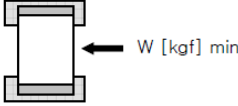
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CHANGES SINCE LAST ISSUE: $\Delta R_vT$ centre with temp coefficients							
Issue :	A	B					
Date :	11.05.2016	01.19.2017					
Originator :	Aiden	Aiden					

4 . Soldering conditions

This device can be solder by flow and reflow soldering

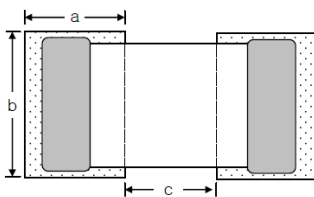
5 . Testing

No	Item	Performance	Test method
1	Solderability	The dipped terminal area shall be at least 90% covered with new solder coating.	The terminal area shall be immersed in a solder tank kept at 230±5°C for 5±1 seconds.
2	Resistance to Solder Heat	ΔR/R Not exceeding ±3% No mechanical damage and no make change in appearance.	A thermistor shall be immersed in solder pot kept as 260±5°C for 5±1 seconds. It shall be left at room temperature for more than one hour before the resistance value is measured.
3	Thermal shock	ΔR/R Not exceeding ±3% No mechanical damage and no make change in appearance.	One cycle during which the thermistor is kept at -40°C for 30 minutes, at room temperature for 10~15 minutes, at 125°C for 30 minutes and at room temperature for 10~15 minutes shall be repeated 100 cycle. The thermistor shall be left at room temperature for 1~24 hours before the resistance value is measured.
4	Humidity Bias	ΔR/R Not exceeding ±3% No mechanical damage and no make change in appearance.	It shall be left at 85±5°C and 85 %RH with no load for 1000 hours. The thermistor shall be left at room temperature for 1~24 hours before the resistance value is measured.
5	High Temperature Exposure	ΔR/R Not exceeding ±3% No mechanical damage and no make change in appearance.	It shall be left in a thermostatic oven kept at 125±3°C with no load for 1000 hours. The thermistor shall be left at room temperature for 1~24 hours before the resistance value is measured.
6	Low Temperature Exposure	ΔR/R Not exceeding ±3% No mechanical damage and no make change in appearance.	It shall be left in a thermostatic oven kept at -40±3°C with no load for 1000 hours. The thermistor shall be left at room temperature for 1~24 hours before the resistance value is measured.
9	Terminal Strength	No serious mechanical damage 1.0 W(kgf)	

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5. Recommended soldering condition

a) Land pattern design

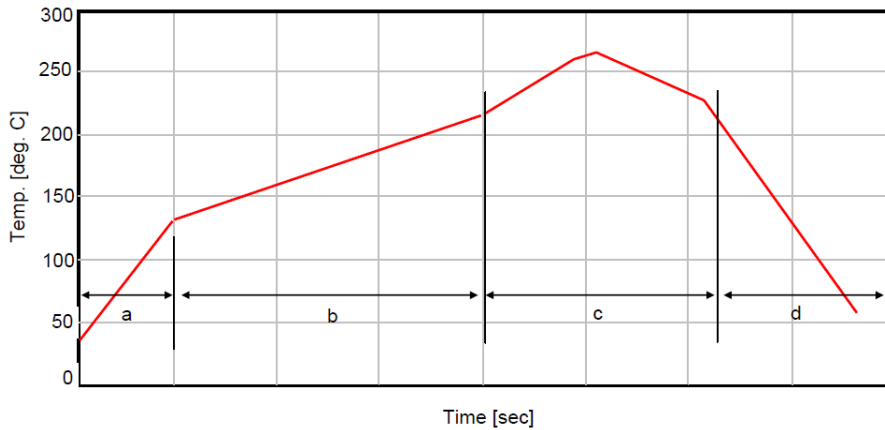


Code	Land Dimension with Chip Size (mm)		
1608	a	b	c
	0.6~0.7	0.6~0.8	0.6~0.8

b)Reflow Soldering

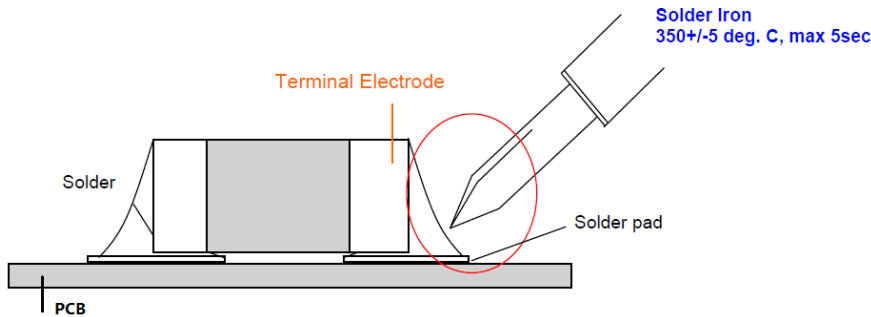
\*Solder:Sn-Ag-Cu

\*260deg.C 10seconds max



a/Curing: RT~130°C,  
60seconds  
b/Preheat: 130~220°C,  
90~150seconds  
c/Soldering: 220~260°C  
90~150seconds  
d/Cooling: 220°C~RT  
min. 60seconds

c)Soldering Iron



To prevent a defective crack from thermal shock due to solder iron,the end of iron-tip must be located on between terminal electrode and solder pad.

7.Caution

- a) Please follow this specification for actual application;
- b) Hauling and assembling gently;
- c) Stop using the temperature sensor, when it be damaged or scrapped;
- d) Apply to correct operation temperature range, avoid using in rapid temperature change, over pressure,corrosive environment;
- e) Do consider self-heating of NTC into measure system;
- f) For others, please consult our sales engineer.

8. Following Condition

8.1 Storage Condition:

- a) Storage Temp. Range: -10°C~40°C;
- b) Relative Humidity: ≤75% RH;
- c) Keep away from direct sunlight, damp and corrosive environment.
- d) Without dewing.

8.2 Storage Term:

- a) Use this product within 12 months after delivery.
- b) If 12 months or more elapsed,please check the solderability before use.

8.3 Storage Place:

- a) Store this product in no corrosive gas(SOX,CL,etc.),nor directly under sunshine.

R-T Conversion Table  
 Part No.: RM-0434  
 R25: 10kohm ± 1%  
 B25/85: 3435K ± 1%  
 Notes:Temp Tol below represents the tolerance of NTC itself, the impact of ambient temperature is not considered.

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T(°C)	Rnom (kΩ)	Rto ±%	Rmin (kΩ)	Rmax (kΩ)	Temp Tol ±°C
-40	<b>203.378</b>	<b>4.09</b>	<b>195.369</b>	<b>211.694</b>	<b>0.73</b>
-39	192.285	4.03	184.817	200.035	0.72
-38	181.862	3.97	174.896	189.087	0.71
-37	172.064	3.92	165.565	178.801	0.71
-36	162.851	3.86	156.786	169.134	0.70
-35	<b>154.185</b>	<b>3.80</b>	<b>148.524</b>	<b>160.046</b>	<b>0.70</b>
-34	146.030	3.74	140.745	151.499	0.69
-33	138.354	3.69	133.419	143.458	0.68
-32	131.126	3.63	126.516	135.890	0.68
-31	124.317	3.58	120.011	128.765	0.67
-30	<b>117.901</b>	<b>3.52</b>	<b>113.878</b>	<b>122.055</b>	<b>0.67</b>
-29	111.854	3.47	108.093	115.733	0.66
-28	106.151	3.41	102.636	109.776	0.65
-27	100.772	3.36	97.486	104.159	0.65
-26	95.697	3.31	92.624	98.862	0.64
-25	<b>90.907</b>	<b>3.25</b>	<b>88.033</b>	<b>93.865</b>	<b>0.64</b>
-24	86.383	3.20	83.695	89.149	0.63
-23	82.111	3.15	79.597	84.697	0.62
-22	78.075	3.10	75.722	80.493	0.62
-21	74.260	3.05	72.059	76.522	0.61
-20	<b>70.654</b>	<b>2.99</b>	<b>68.593</b>	<b>72.770</b>	<b>0.60</b>
-19	67.243	2.94	65.314	69.222	0.60
-18	64.017	2.89	62.211	65.869	0.59
-17	60.964	2.84	59.273	62.696	0.58
-16	58.073	2.79	56.490	59.695	0.58
-15	<b>55.337</b>	<b>2.74</b>	<b>53.854</b>	<b>56.854</b>	<b>0.57</b>
-14	52.745	2.69	51.356	54.165	0.56
-13	50.289	2.64	48.988	51.618	0.56
-12	47.961	2.60	46.743	49.206	0.55
-11	45.754	2.55	44.613	46.920	0.54
-10	<b>43.662</b>	<b>2.50</b>	<b>42.592</b>	<b>44.753</b>	<b>0.54</b>
-9	41.676	2.45	40.675	42.698	0.53
-8	39.793	2.40	38.855	40.750	0.52
-7	38.005	2.36	37.126	38.901	0.51
-6	36.308	2.31	35.484	37.147	0.51
-5	<b>34.696</b>	<b>2.26</b>	<b>33.924</b>	<b>35.481</b>	<b>0.50</b>
-4	33.164	2.22	32.441	33.900	0.49
-3	31.709	2.17	31.032	32.398	0.49
-2	30.326	2.13	29.691	30.971	0.48
-1	29.011	2.08	28.416	29.615	0.47
0	<b>27.760</b>	<b>2.04</b>	<b>27.203</b>	<b>28.325</b>	<b>0.46</b>
1	26.570	1.99	26.049	27.100	0.46
2	25.438	1.95	24.950	25.934	0.45
3	24.361	1.90	23.903	24.824	0.44
4	23.335	1.86	22.907	23.769	0.43
5	<b>22.358</b>	<b>1.82</b>	<b>21.957</b>	<b>22.764</b>	<b>0.43</b>
6	21.427	1.77	21.052	21.807	0.42
7	20.540	1.73	20.189	20.896	0.41
8	19.695	1.69	19.367	20.028	0.40
9	18.890	1.64	18.582	19.200	0.39
10	<b>18.121</b>	<b>1.60</b>	<b>17.834</b>	<b>18.412</b>	<b>0.39</b>
11	17.389	1.56	17.120	17.660	0.38
12	16.690	1.52	16.438	16.943	0.37
13	16.022	1.48	15.788	16.259	0.36
14	15.386	1.44	15.166	15.607	0.35
15	<b>14.778</b>	<b>1.40</b>	<b>14.573</b>	<b>14.984</b>	<b>0.35</b>
16	14.197	1.35	14.006	14.389	0.34
17	13.642	1.31	13.464	13.822	0.33
18	13.113	1.27	12.946	13.280	0.32
19	12.606	1.23	12.451	12.762	0.31
20	<b>12.122</b>	<b>1.19</b>	<b>11.978</b>	<b>12.267</b>	<b>0.31</b>
21	11.659	1.16	11.525	11.794	0.30
22	11.216	1.12	11.092	11.342	0.29
23	10.793	1.08	10.677	10.909	0.28
24	10.388	1.04	10.280	10.496	0.27
25	<b>10.000</b>	<b>1.00</b>	<b>9.900</b>	<b>10.100</b>	<b>0.26</b>
26	9.629	1.04	9.529	9.729	0.28
27	9.273	1.08	9.174	9.373	0.29
28	8.933	1.11	8.834	9.033	0.30
29	8.607	1.15	8.508	8.706	0.31
30	<b>8.295</b>	<b>1.19</b>	<b>8.196</b>	<b>8.393</b>	<b>0.32</b>
31	7.995	1.23	7.898	8.093	0.33
32	7.708	1.26	7.611	7.806	0.35
33	7.433	1.30	7.337	7.530	0.36
34	7.169	1.34	7.074	7.265	0.37
35	<b>6.916</b>	<b>1.37</b>	<b>6.822</b>	<b>7.011</b>	<b>0.38</b>
36	6.673	1.41	6.580	6.767	0.40
37	6.440	1.45	6.348	6.534	0.41
38	6.217	1.48	6.125	6.309	0.42
39	6.002	1.52	5.912	6.093	0.43
40	<b>5.796</b>	<b>1.55</b>	<b>5.707</b>	<b>5.886</b>	<b>0.45</b>
41	5.598	1.59	5.510	5.687	0.46
42	5.408	1.62	5.321	5.496	0.47

T(°C)	Rnom (kΩ)	Rto ±%	Rmin (kΩ)	Rmax (kΩ)	Temp Tol ±°C
43	5.225	1.66	5.140	5.312	0.48
44	5.050	1.69	4.965	5.135	0.50
45	<b>4.881</b>	<b>1.73</b>	<b>4.798</b>	<b>4.965</b>	<b>0.51</b>
46	4.719	1.76	4.637	4.802	0.52
47	4.563	1.80	4.482	4.645	0.54
48	4.413	1.83	4.333	4.494	0.55
49	4.269	1.86	4.190	4.348	0.56
50	<b>4.130</b>	<b>1.90</b>	<b>4.053</b>	<b>4.208</b>	<b>0.58</b>
51	3.996	1.93	3.920	4.074	0.59
52	3.868	1.96	3.793	3.944	0.60
53	3.744	2.00	3.670	3.819	0.62
54	3.625	2.03	3.553	3.699	0.63
55	<b>3.510</b>	<b>2.06</b>	<b>3.439</b>	<b>3.583</b>	<b>0.64</b>
56	3.400	2.10	3.330	3.471	0.66
57	3.293	2.13	3.224	3.363	0.67
58	3.191	2.16	3.123	3.260	0.68
59	3.092	2.19	3.025	3.160	0.70
60	<b>2.997</b>	<b>2.22</b>	<b>2.931</b>	<b>3.063</b>	<b>0.71</b>
61	2.905	2.26	2.840	2.970	0.73
62	2.816	2.29	2.753	2.881	0.74
63	2.731	2.32	2.669	2.794	0.75
64	2.648	2.35	2.587	2.711	0.77
65	<b>2.569</b>	<b>2.38</b>	<b>2.509</b>	<b>2.630</b>	<b>0.78</b>
66	2.492	2.41	2.433	2.552	0.80
67	2.418	2.44	2.360	2.477	0.81
68	2.347	2.47	2.290	2.405	0.83
69	2.278	2.51	2.222	2.335	0.84
70	<b>2.211</b>	<b>2.54</b>	<b>2.156</b>	<b>2.267</b>	<b>0.86</b>
71	2.147	2.57	2.093	2.202	0.87
72	2.085	2.60	2.032	2.139	0.89
73	2.025	2.63	1.973	2.078	0.90
74	1.967	2.66	1.916	2.019	0.92
75	<b>1.911</b>	<b>2.69</b>	<b>1.861</b>	<b>1.962</b>	<b>0.93</b>
76	1.857	2.72	1.807	1.907	0.95
77	1.804	2.74	1.756	1.854	0.96
78	1.754	2.77	1.706	1.802	0.98
79	1.705	2.80	1.658	1.753	0.99
80	<b>1.657</b>	<b>2.83</b>	<b>1.612</b>	<b>1.704</b>	<b>1.01</b>
81	1.612	2.86	1.567	1.658	1.02
82	1.567	2.89	1.523	1.613	1.04
83	1.524	2.92	1.481	1.569	1.06
84	1.483	2.95	1.440	1.527	1.07
85	<b>1.443</b>	<b>2.97</b>	<b>1.401</b>	<b>1.486</b>	<b>1.09</b>
86	1.404	3.00	1.363	1.446	1.10
87	1.366	3.03	1.326	1.408	1.12
88	1.330	3.06	1.290	1.371	1.13
89	1.295	3.09	1.256	1.335	1.15
90	<b>1.261</b>	<b>3.11</b>	<b>1.222</b>	<b>1.300</b>	<b>1.17</b>
91	1.227	3.14	1.190	1.266	1.18
92	1.195	3.17	1.159	1.233	1.20
93	1.164	3.20	1.128	1.202	1.22
94	1.134	3.22	1.099	1.171	1.23
95	<b>1.105</b>	<b>3.25</b>	<b>1.070</b>	<b>1.141</b>	<b>1.25</b>
96	1.077	3.28	1.042	1.112	1.27
97	1.049	3.30	1.016	1.084	1.28
98	1.023	3.33	0.990	1.057	1.30
99	0.997	3.36	0.964	1.030	1.32
100	<b>0.972</b>	<b>3.38</b>	<b>0.940</b>	<b>1.005</b>	<b>1.33</b>
101	0.948	3.41	0.916	0.980	1.35
102	0.924	3.43	0.893	0.956	1.37
103	0.901	3.46	0.871	0.932	1.38
104	0.879	3.49	0.849	0.910	1.40
105	<b>0.858</b>	<b>3.51</b>	<b>0.828</b>	<b>0.888</b>	<b>1.42</b>
106	0.837	3.54	0.808	0.866	1.44
107	0.816	3.56	0.788	0.845	1.45
108	0.797	3.59	0.769	0.825	1.47
109	0.777	3.61	0.750	0.806	1.49
110	<b>0.759</b>	<b>3.64</b>	<b>0.732</b>	<b>0.787</b>	<b>1.51</b>
111	0.741	3.66	0.715	0.768	1.53
112	0.723	3.69	0.698	0.750	1.54
113	0.706	3.71	0.681	0.732	1.56
114	0.690	3.74	0.665	0.715	1.58
115	<b>0.674</b>	<b>3.76</b>	<b>0.649</b>	<b>0.699</b>	<b>1.60</b>
116	0.658	3.79	0.634	0.683	1.62
117	0.643	3.81	0.619	0.667	1.63
118	0.628	3.83	0.605	0.652	1.65
119	0.614	3.86	0.591	0.637	1.67
120	<b>0.600</b>	<b>3.88</b>	<b>0.577</b>	<b>0.623</b>	<b>1.69</b>
121	0.586	3.91	0.564	0.609	1.71
122	0.573	3.93	0.551	0.595	1.73
123	0.560	3.95	0.539	0.582	1.74
124	0.547	3.98	0.526	0.569	1.76
125	<b>0.535</b>	<b>4.00</b>	<b>0.515</b>	<b>0.557</b>	<b>1.78</b>