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ISO9001
ISO14001



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Customer : _____

Document No. : AP09-THR-091211

**Approval Sheet
[for Product Specification]**

Product	NTC Thermistor
Part No	RB103F3435F01

Approved by Customer : [Signing or Stamping here]

Prepared	Checked	Approved
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NTC Thermistor

RA / RB series

■ Feature

1. Low cost, high stability, excellent endurance against thermal shock
2. Radial type : RA - straight wire, RB & RC - formed wire
3. Temperature sensing and control, compensation, measurement
4. Dimension can be discussed

■ Applications

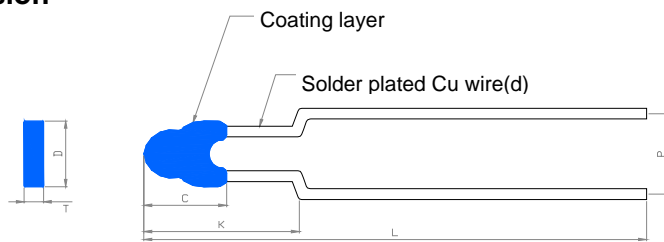
- On-board temperature sensor, Air conditioner, Refrigerator, Heater

■ Part Number

$\frac{RB}{(1)}$ $\frac{103}{(2)}$ $\frac{F}{(3)}$ $\frac{3435}{(4)}$ $\frac{F}{(5)}$ $\frac{01}{(6)}$

(1) Wire type	RA(Straight) , RB(Forming A), RC(Forming B)
(2) Resistance value	103 = 10 kohm [$10 \times 10^3 \text{ohm}$] @ 25 ± 0.2
(3) Resistance tolerance	F : ±1% of Nominal Resistance
(4) B(25/85) value	3435K
(5) B value tolerance	F : ±1% of Nominal B value
(6) Series no.	01, 02, 03, 04,09 etc
Special parts	Powder coating [Blue], ROHS compliant [Pb-free]

■ Shape & Dimension



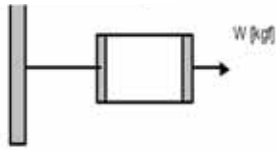
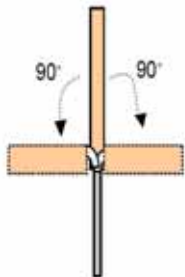
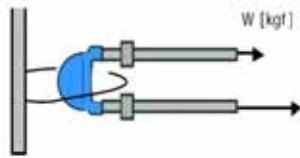
unit : mm

Type	C	D	K	L	P	T	d	remark
RB	4.0max	4.0max	6.5 max	32	3.0	3.0max	0.45	

Code	Shape [Lead wire type]	Description
RA		Straight
RB		Forming A
RC		Forming B

Code	Shape [Frame type]	Description
FA		Frame Straight
FB		Frame Forming

■ Performance Specification

No	ITEM	Requirements	Test condition								
1	Operating Temp. Range	-40 ~ +125									
2	Resistance	Within Tolerance of Resistance	Measured at 25 in Silicon Oil Bath								
3	B Value	Within Tolerance of B Value	$B_{25/85}[K] = \ln(R_{25}/R_{85}) / (1/T_{25} - 1/T_{85})$								
4	Max Rated Wattage[mW]	1. Lead wire type : 50 ~ 200	Measured in the still air								
5	Heat Dissipation Constant [mW/]	1. Lead wire type : 0.5 ~ 2.0	Measured in the still air								
6	Solderability	1. No Serious mechanical damage 2. R ± 3% (Ref. To initial value) 3. B ± 3% (Ref. To initial value)	1. 400 , 5sec [electrical soldering iron]								
7	Humidity Test	1. No Serious mechanical damage 2. R ± 3% (Ref. To initial value) 3. B ± 3% (Ref. To initial value)	1. Test Temp. & Relative Humidity & Time : 85 ±5 , 85±5% RH, 500± 24Hrs 2. Let sit at room-Temp., for 24Hrs then Measure								
8	Thermal Shock	1. No Serious mechanical damage 2. R ± 3% (Ref. To initial value) 3. B ± 3% (Ref. To initial value)	1. Temp. : -40 ±5 , +85 ±5 2. Soak Time : 30min ± 3min The cycles is repeated 100 times								
9	High Temp. Storage	1. No Serious mechanical damage 2. R ± 3% (Ref. To initial value) 3. B ± 3% (Ref. To initial value)	1. Temp. : +85 ±5 2. Time : 1000Hrs ± 12Hrs Let sit at R.T, for 24Hrs then Measure								
10	Low Temp. Storage	1. No Serious mechanical damage 2. R ± 3% (Ref. To initial value) 3. B ± 3% (Ref. To initial value)	1. Temp. : -40 ±5 2. Time : 1000Hrs ± 12Hrs Let sit at R.T, for 24Hrs then Measure								
11	Tensile Strength	1. No Serious mechanical damage 2. Lead wire type: a. FA / RA / RB / RI series 1.0kgf apply for 10sec b. JT / PI / EW / AS series 3. SMD Chip type:	<p>SMD chip type</p>  <p>JT/PI/EW/AS</p>  <p>FA/FB/RA/RB/RC</p>  <table border="1" style="margin-top: 10px;"> <tr> <td>Size</td> <td>1005</td> <td>1608</td> <td>2012</td> </tr> <tr> <td>W[kgf]</td> <td>0.5</td> <td>1.0</td> <td>2.0</td> </tr> </table>	Size	1005	1608	2012	W[kgf]	0.5	1.0	2.0
Size	1005	1608	2012								
W[kgf]	0.5	1.0	2.0								

NTC Thermistor

■ Packing Specification

1. Label

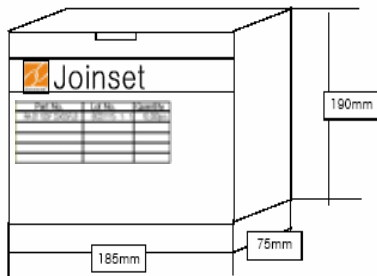
code	descriptions
(1)	Part No.
(2)	Lot No.
(3)	Quantity
(4)	Sequence No.
(5)	Inspector
(6)	Inspection Date
(7)	Manufacture

ex) Label



2. Packing Quantity

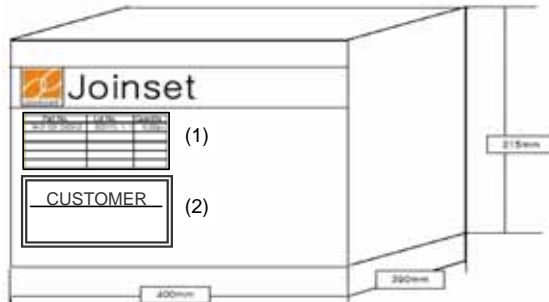
1) Inner box



* 10bags in each Inner Box

* Label : Part no. & Lot no. & Quantity

2) Outer box



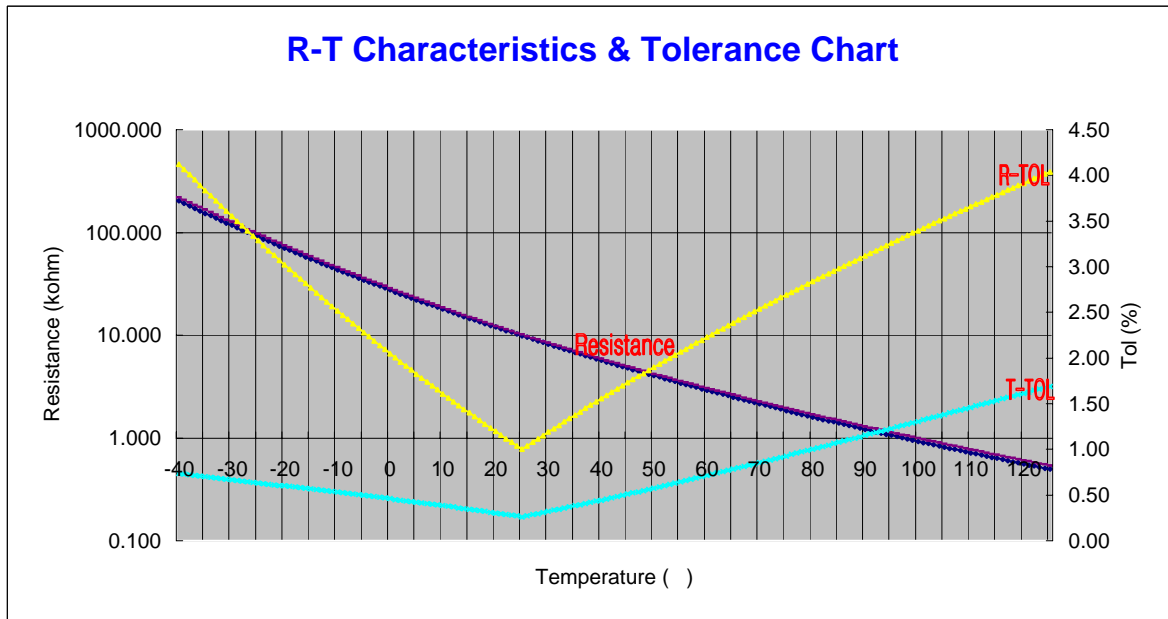
* Outer Box contains 10 Inner Box (100 Bags)

* Label : (1) Part no. & Lot no. & Quantity (2) Customer

3) Packing Quantity

unit : pcs

RB series	02			Carrier Tape
pcs/bag	1,000			-
Inner Box	10,000			-
Outer	100,000			-



Part no . RB103F3435F01

(Unit : kohm)

TEMP(C)	MIN	MEAN	MAX	R-TOL(MIN)	R-TOL(MAX)	T-TOL(MIN)	T-TOL(MAX)
-40	202.155	210.514	219.198	3.97	4.12	0.71	0.73
-39	191.239	199.036	207.130	3.92	4.07	0.70	0.73
-38	180.964	188.237	195.782	3.86	4.01	0.69	0.72
-37	171.290	178.075	185.110	3.81	3.95	0.69	0.71
-36	162.179	168.510	175.071	3.76	3.89	0.68	0.71
-35	153.597	159.505	165.624	3.70	3.84	0.68	0.70
-34	145.510	151.025	156.733	3.65	3.78	0.67	0.69
-33	137.890	143.038	148.363	3.60	3.72	0.66	0.69
-32	130.706	135.513	140.482	3.55	3.67	0.66	0.68
-31	123.933	128.421	133.059	3.50	3.61	0.65	0.67
-30	117.545	121.737	126.066	3.44	3.56	0.65	0.67
-29	111.519	115.434	119.476	3.39	3.50	0.64	0.66
-28	105.832	109.491	113.264	3.34	3.45	0.63	0.65
-27	100.466	103.884	107.408	3.29	3.39	0.63	0.65
-26	95.399	98.593	101.884	3.24	3.34	0.62	0.64
-25	90.615	93.600	96.674	3.19	3.28	0.61	0.63
-24	86.096	88.886	91.758	3.14	3.23	0.61	0.63
-23	81.826	84.435	87.118	3.09	3.18	0.60	0.62
-22	77.791	80.230	82.737	3.04	3.13	0.60	0.61
-21	73.976	76.257	78.600	2.99	3.07	0.59	0.61
-20	70.370	72.503	74.693	2.94	3.02	0.58	0.60
-19	66.959	68.954	71.001	2.89	2.97	0.58	0.59
-18	63.731	65.598	67.511	2.84	2.92	0.57	0.59
-17	60.678	62.423	64.213	2.80	2.87	0.56	0.58
-16	57.787	59.420	61.093	2.75	2.82	0.56	0.57
-15	55.050	56.578	58.143	2.70	2.77	0.55	0.57
-14	52.458	53.888	55.351	2.65	2.72	0.55	0.56
-13	50.002	51.340	52.709	2.61	2.67	0.54	0.55
-12	47.675	48.928	50.208	2.56	2.62	0.53	0.54
-11	45.470	46.642	47.839	2.51	2.57	0.53	0.54
-10	43.379	44.476	45.596	2.47	2.52	0.52	0.53
-9	41.396	42.423	43.471	2.42	2.47	0.51	0.52
-8	39.515	40.476	41.456	2.37	2.42	0.51	0.52
-7	37.730	38.630	39.547	2.33	2.37	0.50	0.51
-6	36.036	36.878	37.736	2.28	2.33	0.49	0.50
-5	34.427	35.216	36.019	2.24	2.28	0.49	0.50
-4	32.900	33.638	34.389	2.19	2.23	0.48	0.49
-3	31.449	32.140	32.843	2.15	2.19	0.47	0.48
-2	30.071	30.717	31.375	2.10	2.14	0.47	0.47
-1	28.761	29.366	29.981	2.06	2.09	0.46	0.47
0	27.515	28.081	28.657	2.02	2.05	0.45	0.46
1	26.331	26.861	27.399	1.97	2.00	0.45	0.45

TEMP(C)	MIN	MEAN	MAX	R-TOL(MIN)	R-TOL(MAX)	T-TOL(MIN)	T-TOL(MAX)
2	25.204	25.700	26.203	1.93	1.96	0.44	0.44
3	24.132	24.596	25.067	1.89	1.91	0.43	0.44
4	23.112	23.547	23.987	1.84	1.87	0.42	0.43
5	22.141	22.548	22.959	1.80	1.82	0.42	0.42
6	21.217	21.597	21.981	1.76	1.78	0.41	0.41
7	20.336	20.691	21.051	1.72	1.74	0.40	0.41
8	19.497	19.829	20.165	1.68	1.69	0.39	0.40
9	18.698	19.008	19.322	1.63	1.65	0.39	0.39
10	17.936	18.226	18.519	1.59	1.61	0.38	0.38
11	17.209	17.480	17.754	1.55	1.57	0.37	0.38
12	16.516	16.770	17.025	1.51	1.52	0.36	0.37
13	15.855	16.092	16.330	1.47	1.48	0.36	0.36
14	15.225	15.445	15.668	1.43	1.44	0.35	0.35
15	14.623	14.829	15.036	1.39	1.40	0.34	0.34
16	14.048	14.240	14.433	1.35	1.36	0.33	0.34
17	13.499	13.678	13.859	1.31	1.32	0.33	0.33
18	12.975	13.142	13.310	1.27	1.28	0.32	0.32
19	12.474	12.630	12.786	1.23	1.24	0.31	0.31
20	11.996	12.141	12.286	1.19	1.20	0.30	0.30
21	11.538	11.673	11.808	1.15	1.16	0.29	0.30
22	11.101	11.226	11.352	1.11	1.12	0.29	0.29
23	10.683	10.799	10.915	1.08	1.08	0.28	0.28
24	10.283	10.391	10.499	1.04	1.04	0.27	0.27
25	9.900	10.000	10.100	1.00	1.00	0.26	0.26
26	9.526	9.626	9.726	1.04	1.04	0.27	0.27
27	9.169	9.269	9.368	1.08	1.08	0.28	0.29
28	8.827	8.926	9.026	1.11	1.11	0.30	0.30
29	8.500	8.599	8.698	1.15	1.15	0.31	0.31
30	8.187	8.285	8.383	1.19	1.19	0.32	0.32
31	7.887	7.984	8.082	1.22	1.23	0.33	0.33
32	7.599	7.696	7.794	1.26	1.26	0.34	0.35
33	7.324	7.420	7.517	1.29	1.30	0.36	0.36
34	7.061	7.156	7.252	1.33	1.34	0.37	0.37
35	6.808	6.902	6.997	1.37	1.38	0.38	0.38
36	6.566	6.659	6.753	1.40	1.41	0.39	0.39
37	6.333	6.426	6.519	1.44	1.45	0.40	0.41
38	6.111	6.202	6.294	1.47	1.48	0.42	0.42
39	5.897	5.987	6.078	1.51	1.52	0.43	0.43
40	5.692	5.781	5.871	1.54	1.56	0.44	0.44
41	5.495	5.583	5.672	1.58	1.59	0.45	0.46
42	5.306	5.393	5.481	1.61	1.63	0.47	0.47
43	5.125	5.211	5.297	1.64	1.66	0.48	0.48
44	4.951	5.035	5.121	1.68	1.70	0.49	0.50
45	4.783	4.867	4.951	1.71	1.73	0.50	0.51
46	4.623	4.705	4.788	1.74	1.76	0.52	0.52
47	4.468	4.549	4.631	1.78	1.80	0.53	0.54
48	4.320	4.399	4.480	1.81	1.83	0.54	0.55
49	4.177	4.255	4.335	1.84	1.87	0.56	0.56
50	4.040	4.117	4.195	1.87	1.90	0.57	0.58
51	3.908	3.984	4.061	1.91	1.93	0.58	0.59
52	3.781	3.855	3.931	1.94	1.97	0.59	0.60
53	3.658	3.732	3.807	1.97	2.00	0.61	0.62
54	3.541	3.613	3.687	2.00	2.03	0.62	0.63
55	3.427	3.499	3.571	2.03	2.07	0.63	0.64
56	3.318	3.388	3.460	2.07	2.10	0.65	0.66
57	3.213	3.282	3.352	2.10	2.13	0.66	0.67
58	3.112	3.180	3.249	2.13	2.16	0.67	0.68
59	3.015	3.081	3.149	2.16	2.20	0.69	0.70
60	2.921	2.986	3.053	2.19	2.23	0.70	0.71
61	2.830	2.895	2.960	2.22	2.26	0.71	0.73
62	2.743	2.806	2.871	2.25	2.29	0.73	0.74
63	2.659	2.721	2.784	2.28	2.32	0.74	0.76
64	2.578	2.639	2.701	2.31	2.35	0.75	0.77
65	2.500	2.560	2.621	2.34	2.39	0.77	0.78
66	2.424	2.483	2.543	2.37	2.42	0.78	0.80
67	2.351	2.409	2.468	2.40	2.45	0.80	0.81
68	2.281	2.338	2.396	2.43	2.48	0.81	0.83

TEMP(C)	MIN	MEAN	MAX	R-TOL(MIN)	R-TOL(MAX)	T-TOL(MIN)	T-TOL(MAX)
69	2.213	2.269	2.326	2.46	2.51	0.82	0.84
70	2.148	2.203	2.258	2.49	2.54	0.84	0.86
71	2.084	2.138	2.193	2.52	2.57	0.85	0.87
72	2.023	2.076	2.130	2.54	2.60	0.87	0.88
73	1.964	2.016	2.069	2.57	2.63	0.88	0.90
74	1.907	1.958	2.010	2.60	2.66	0.89	0.91
75	1.852	1.902	1.953	2.63	2.69	0.91	0.93
76	1.799	1.848	1.898	2.66	2.72	0.92	0.94
77	1.748	1.796	1.845	2.69	2.75	0.94	0.96
78	1.698	1.745	1.794	2.71	2.78	0.95	0.97
79	1.650	1.696	1.744	2.74	2.81	0.96	0.99
80	1.603	1.649	1.695	2.77	2.84	0.98	1.00
81	1.558	1.603	1.649	2.80	2.87	0.99	1.02
82	1.514	1.558	1.604	2.82	2.90	1.01	1.03
83	1.472	1.515	1.560	2.85	2.92	1.02	1.05
84	1.431	1.474	1.517	2.88	2.95	1.04	1.06
85	1.392	1.434	1.476	2.90	2.98	1.05	1.08
86	1.354	1.395	1.437	2.93	3.01	1.06	1.09
87	1.317	1.357	1.398	2.96	3.04	1.08	1.11
88	1.281	1.320	1.361	2.98	3.07	1.09	1.12
89	1.246	1.285	1.325	3.01	3.09	1.11	1.14
90	1.213	1.250	1.290	3.04	3.12	1.12	1.15
91	1.180	1.217	1.256	3.06	3.15	1.14	1.17
92	1.148	1.185	1.223	3.09	3.18	1.15	1.18
93	1.118	1.154	1.191	3.12	3.20	1.17	1.20
94	1.088	1.123	1.160	3.14	3.23	1.18	1.21
95	1.059	1.094	1.130	3.17	3.26	1.19	1.23
96	1.031	1.065	1.100	3.19	3.29	1.21	1.25
97	1.004	1.038	1.072	3.22	3.31	1.22	1.26
98	0.978	1.011	1.045	3.24	3.34	1.24	1.28
99	0.953	0.985	1.018	3.27	3.37	1.25	1.29
100	0.928	0.959	0.992	3.29	3.40	1.27	1.31
101	0.904	0.935	0.967	3.32	3.42	1.28	1.32
102	0.881	0.911	0.943	3.34	3.45	1.30	1.34
103	0.858	0.888	0.919	3.37	3.48	1.31	1.35
104	0.836	0.866	0.896	3.39	3.50	1.33	1.37
105	0.815	0.844	0.873	3.42	3.53	1.34	1.38
106	0.794	0.823	0.852	3.44	3.55	1.35	1.40
107	0.774	0.802	0.831	3.47	3.58	1.37	1.41
108	0.755	0.782	0.810	3.49	3.61	1.38	1.43
109	0.736	0.763	0.790	3.52	3.63	1.40	1.45
110	0.717	0.744	0.771	3.54	3.66	1.41	1.46
111	0.699	0.725	0.752	3.56	3.69	1.43	1.48
112	0.682	0.707	0.734	3.59	3.71	1.44	1.49
113	0.665	0.690	0.716	3.61	3.74	1.46	1.51
114	0.649	0.673	0.699	3.64	3.76	1.47	1.52
115	0.633	0.657	0.682	3.66	3.79	1.49	1.54
116	0.617	0.641	0.665	3.68	3.81	1.50	1.55
117	0.602	0.625	0.649	3.71	3.84	1.51	1.57
118	0.588	0.610	0.634	3.73	3.86	1.53	1.58
119	0.573	0.596	0.619	3.75	3.89	1.54	1.60
120	0.559	0.581	0.604	3.78	3.91	1.56	1.61
121	0.546	0.567	0.590	3.80	3.94	1.57	1.63
122	0.533	0.554	0.576	3.82	3.96	1.59	1.64
123	0.520	0.541	0.562	3.85	3.99	1.60	1.66
124	0.508	0.528	0.549	3.87	4.01	1.61	1.68
125	0.495	0.516	0.536	3.89	4.04	1.63	1.69