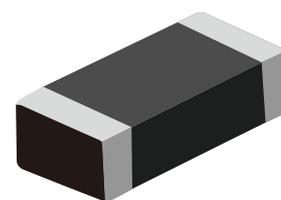


## FEATURES

- | Small size, large power, strong capacity of suppression of inrush current
- | Fast response
- | Big material constant(Bvalue), small residual resistance
- | Long life and high reliability
- | Complete series, wide applications



0402

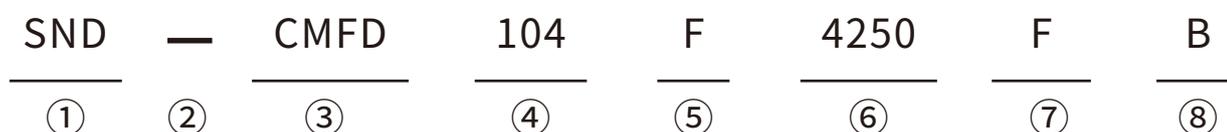
## APPLICATIONS

- | Switching power-supply, switch power, ups power
- | Monitor, Sps, Fax, Telecom, Adaptor etc.
- | All kinds of RT, display
- | Bulb and other lighting lamps

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## PRODUCT IDENTIFICATION(PART NUMBER)



①Code		②Type		③External Dimensions (L×W×T)(mm)		④Nominal Zero-Power Resistance	
SND	Logo	-	Delimiter	0402[CMFD]	1.00×0.50×0.50	472	4.7kΩ
				0603[CMFA]	1.60×0.80×0.80	103	10kΩ
				0805[CMFB]	2.00×1.25×0.85	104	100kΩ
				1206[CMFC]	3.20×1.60×0.85		

⑤Tolerance of Resistance		⑥B Constant		⑦Tolerance of B Constant		⑧B constant calculation method	
F	±1%	3380	3380K	F	±1%	A	25°C&85°C
G	±2%	3950	3950K	H	±3%	B	25°C&50°C
H	±3%	4250	4250K				
J	±5%						

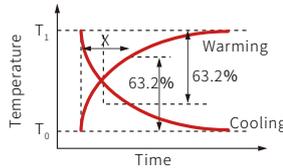
## ELECTRICAL CHARACTERISTICS

Part No	Resistance (25°C) (kΩ)	B Constant (25/50°C) (K)	Permissible Operating Current (25°C) (mA)	Dissipation Factor (mW/°C)	Thermal Time Constant (s)	Rated Electric Power(25°C) (mW)	Operating ambient temperature (°C)
SND-CMFD104F4250FB	100±1%	4250±1%	0.10	1.0	<3	100	-40~+125

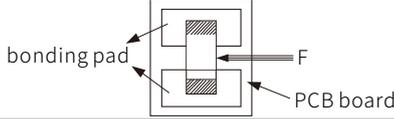
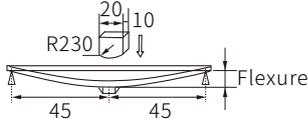
## TEST AND MEASUREMENT PROCEDURES

Test Conditions	Inspection Equipment
Unless otherwise specified, the standard atmospheric conditions for measurement/test as: a. Ambient Temperature: 20±15°C b. Relative Humidity: 65±20% c. Air Pressure: 86kPa to 106kPa	Visual Examination: 20× magnifier Resistance value test: Thermistor resistance tester
If any doubt on the results, measurements/tests should be made within the following limits: a. Ambient Temperature: 25±2°C b. Relative Humidity: 65±5% c. Air Pressure: 86kPa to 106kPa	

## ELECTRICAL TEST

No.	Items	Test Methods and Remarks
1	Nominal Zero-Power Resistance at 25°C(R25)	Ambient temperature: 25±0.05°C Measuring electric power: ≤0.1mW
2	Nominal B Constant	The resistance values R1 and R2 were measured respectively at ambient temperatures T1 and T2 through the following formula calculation yields 50±0.05°C or, 85±0.05°C. $B(T_1/T_2) = \frac{\ln R_1 - \ln R_2}{1/T_1 - 1/T_2}$ T: Absolute temperature (K) It is often calculated at 25°C, 50°C and 85°C
3	Thermal Time Constant	Under zero-power conditions, when the ambient temperature of the thermistor undergoes a sharp change, The thermistor element generates a temperature difference between the initial temperature and the final temperature The time required for a 63.2% temperature change is usually expressed in seconds (S)
		
4	Dissipation Factor	The required power which makes the NTC thermistor body temperature raise 1°C through self-heated, normally expressed in milliwatts per degree Celsius (mW/°C). It can be calculated by the following formula: $\delta = \frac{W}{T - T_0}$
5		The requirement for the surface temperature to rise by 100°C due to self-heating at an ambient temperature of 25°C The required power
6	Allowable working current	An electric current that raises the temperature of still air to 1°C through its own heat generation

## RELIABILITY TEST

Items	Test Methods and Remarks	Requirements															
End Adhesion	older it onto the test PCB board (as shown in the following figure) in the direction indicated by the arrow Apply a force of 5N and hold for $10 \pm 1$ second 	The end electrode has not fallen off and the porcelain body has not Damage															
Flexure Strength	Solder the NTC onto the test PCB board and apply force in the direction indicated by the arrow in the following figure direction shown as follow;  <table border="1" data-bbox="480 808 1002 925"> <thead> <tr> <th>Size</th> <th>Flexure</th> <th>Pressurizing Speed</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>0201</td> <td>1mm</td> <td rowspan="2">&lt;0.5mm/s</td> <td rowspan="2">10±1s</td> </tr> <tr> <td>0402,0603,0805</td> <td>2mm</td> </tr> </tbody> </table>	Size	Flexure	Pressurizing Speed	Duration	0201	1mm	<0.5mm/s	10±1s	0402,0603,0805	2mm	① No appearance damage ② The changes of R25 before and after the experiment Conversion rate: within $\pm 2\%$ ③ The change of B value before and after the experiment Conversion rate: within $\pm 1\%$					
Size	Flexure	Pressurizing Speed	Duration														
0201	1mm	<0.5mm/s	10±1s														
0402,0603,0805	2mm																
Vibration	① Solder the NTC onto the test PCB board (as shown in the right figure) ② NTC vibrates with a full amplitude of 1.5mm and a frequency range of 10Hz to 55Hz uniformly between the approximate limits of 10 and 55 Hz ③ The vibration frequency cycles at 10Hz→55Hz→10Hz for a period of 1 minute in space Vibrate in three mutually perpendicular directions for 2 hours each (a total of 6 hours)	① No appearance damage ② The changes of R25 before and after the experiment Conversion rate: within $\pm 2\%$ ③ The change of B value before and after the experiment Conversion rate: within $\pm 1\%$															
Fall	Let the NTC freely fall from a height of 1 meter onto the cement ground 10 times	No appearance damage															
Weldability	① Welding temperature: $240 \pm 5^\circ\text{C}$ ② Impregnation time: $3 \pm 0.3$ seconds ③ Solder composition: 96.5Sn/3.0Ag/0.5Cu ④ Flux: 25% rosin and 75% alcohol by weight	① No appearance damage ② WSolder coating of the electrode at the component end The coverage rate shall not be less than 95%															
Soldering Resistance	① Preheating temperature: $150 \pm 5^\circ\text{C}$ ② Preheating time: 3 minutes ③ Welding temperature: $260 \pm 5^\circ\text{C}$ ④ Impregnation time: $10 \pm 1$ second ⑤ Solder composition: 96.5Sn/3.0Ag/0.5Cu ⑥ Flux: 25% rosin and 75% alcohol by weight ⑦ After the test, place it under standard conditions for 1 to 2 hours and then measure	① No appearance damage ② The changes of R25 before and after the experiment Conversion rate: within $\pm 2\%$ ③ The change of B value before and after the experiment Conversion rate: within $\pm 1\%$															
Temperature Period	Repeat five times under the environmental conditions shown in the table without load <table border="1" data-bbox="523 1603 959 1776"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>-40 \pm 5^\circ\text{C}</math></td> <td><math>30 \pm 3\text{min}</math></td> </tr> <tr> <td>2</td> <td><math>25 \pm 2^\circ\text{C}</math></td> <td><math>5 \pm 3\text{min}</math></td> </tr> <tr> <td>3</td> <td><math>125 \pm 2^\circ\text{C}</math></td> <td><math>30 \pm 3\text{min}</math></td> </tr> <tr> <td>4</td> <td><math>25 \pm 2^\circ\text{C}</math></td> <td><math>5 \pm 3\text{min}</math></td> </tr> </tbody> </table> After the test, place it under standard conditions for 1 to 2 hours and then measure	Step	Temperature	Time	1	$-40 \pm 5^\circ\text{C}$	$30 \pm 3\text{min}$	2	$25 \pm 2^\circ\text{C}$	$5 \pm 3\text{min}$	3	$125 \pm 2^\circ\text{C}$	$30 \pm 3\text{min}$	4	$25 \pm 2^\circ\text{C}$	$5 \pm 3\text{min}$	① No appearance damage ② The changes of R25 before and after the experiment Conversion rate: within $\pm 2\%$ ③ The change of B value before and after the experiment Conversion rate: within $\pm 1\%$
Step	Temperature	Time															
1	$-40 \pm 5^\circ\text{C}$	$30 \pm 3\text{min}$															
2	$25 \pm 2^\circ\text{C}$	$5 \pm 3\text{min}$															
3	$125 \pm 2^\circ\text{C}$	$30 \pm 3\text{min}$															
4	$25 \pm 2^\circ\text{C}$	$5 \pm 3\text{min}$															
High And Low Temperature Shock	One reflow soldering pretreatment, $-40^\circ\text{C}/$ hold for 30 minutes → $+125^\circ\text{C}/$ hold for 30 minutes, temperature The zone transition time is within 20 seconds, with a total of 100 cycles																

Items	Test Methods and Remarks	Requirements
High-temperature storage	①Place it in the air at $125 \pm 5^{\circ}\text{C}$ without load for $1000 \pm 24$ hours ②After the test, place it under standard conditions for 1 to 2 hours and then measure	① No appearance damage ② The changes of R25 before and after the experiment Conversion rate: within $\pm 2\%$ ③ The change of B value before and after the experiment Conversion rate: within $\pm 1\%$
to be kept cool	①It should be placed in the air at $-40 \pm 3^{\circ}\text{C}$ without load for $1000 \pm 24$ hours ②After the test, place it under standard conditions for 1 to 2 hours and then measure	
Storage in damp heat	①It should be placed in an air environment at $60 \pm 2^{\circ}\text{C}$ and 90-95%RH for $1000 \pm 24$ hours without load ②After the test, place it under standard conditions for 1 to 2 hours and then measure	
High-temperature load	①Apply the allowable working current of $1000 \pm 48$ hours in the air at $85 \pm 2^{\circ}\text{C}$ ②After the test, place it under standard conditions for 1 to 2 hours and then measure	

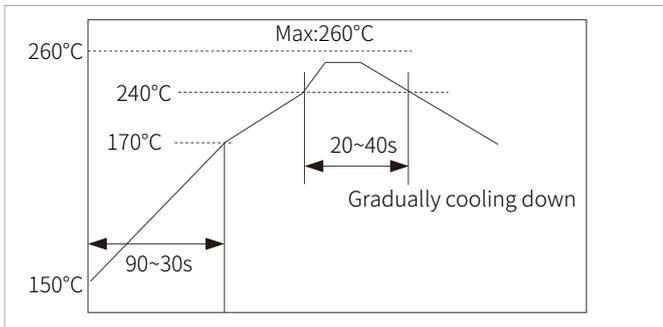
## STORAGE

Storage Conditions	
a. Storage Temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$	b. Relative Humidity: $\leq 75\% \text{RH}$
c. Keep away from corrosive atmosphere and sunlight	
Period of Storage: 6 Months after delivery	

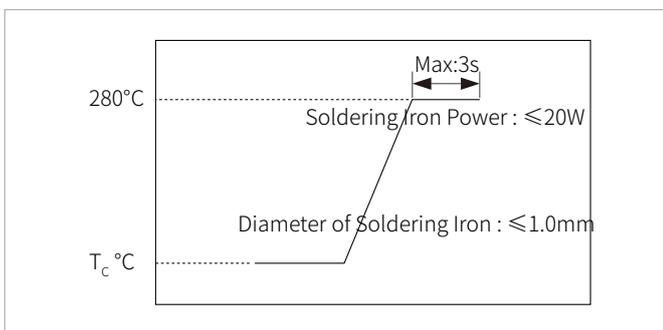
## NOTES & WARNINGS

Mount onto the substrate
The pressure of the installation head
If the bottom dead center of the adsorption nozzle is too low, the NTC thermistor may be subjected to excessive force during mounting, leading to the formation of cracks. Therefore, please refer to it when using
To prevent the substrate from warping, please set the bottom dead center of the adsorption nozzle on the substrate and adjust it accordingly
Please control the nozzle pressure during mounting at 0.1 to 0.3N under static load
To minimize the impact of the adsorption nozzle on the substrate bending, please ensure that the support pin is tightly attached to the back of the substrate to suppress its bending
The wear of the positioning claws may cause the mechanical shock applied to the NTC thermistor during positioning to be local, resulting in NTC overheating The occurrence of missing or cracking of the sensitive resistor, therefore, please manage the positioning closure size and regularly maintain and inspect the positioning claws Check and replace

## RECOMMENDED SOLDERING TECHNOLOGIES



Re-flowing Profile
1~2°C/sec. Ramp
Pre-heating: 150~170°C/90±30 sec.
Time above 240°C: 20~40 sec.
Peak temperature: 260°CMax./10 sec.
Solder paste: Sn/3.0Ag/0.5Cu
Max.2 times for re-flowing



Iron Soldering Profile
Iron soldering power: Max.20W
Pre-heating: 150°C/60sec.
Soldering Tip temperature: 280°CMax.
Soldering time: 3 sec Max.
Solder paste: Sn/3.0Ag/0.5Cu
Max.1 times for iron soldering

Note: Take care not to apply the tip of the soldering iron to the terminal electrodes

Temp. (°C)	R_Min (kΩ)	R_Typ (kΩ)	R_Max (kΩ)	Res TOL(+)	Res TOL(-)	Temp. TOL. (+)(°C)	Temp. TOL. (-)(°C)
-40	4,191.522	4,397.119	4,612.340	4.89%	4.68%	0.66	0.63
-39	3,904.301	4,092.874	4,290.126	4.82%	4.61%	0.65	0.62
-38	3,638.686	3,811.717	3,992.576	4.74%	4.54%	0.65	0.62
-37	3,392.915	3,551.749	3,717.646	4.67%	4.47%	0.64	0.62
-36	3,165.377	3,311.236	3,463.470	4.60%	4.40%	0.64	0.61
-35	2,954.603	3,088.599	3,228.349	4.52%	4.34%	0.63	0.61
-34	2,759.251	2,882.396	3,010.735	4.45%	4.27%	0.63	0.60
-33	2,578.097	2,691.310	2,809.213	4.38%	4.21%	0.62	0.60
-32	2,410.018	2,514.137	2,622.492	4.31%	4.14%	0.62	0.62
-31	2,253.988	2,349.778	2,449.393	4.24%	4.08%	0.61	0.59
-30	2,109.070	2,197.225	2,288.836	4.17%	4.01%	0.61	0.58
-29	1,974.402	2,055.558	2,139.835	4.10%	3.95%	0.60	0.58
-28	1,849.196	1,923.932	2,001.488	4.03%	3.88%	0.59	0.57
-27	1,732.729	1,801.573	1,872.966	3.96%	3.82%	0.59	0.57
-26	1,624.337	1,687.773	1,753.511	3.89%	3.76%	0.58	0.56
-25	1,523.411	1,581.881	1,642.430	3.83%	3.70%	0.58	0.56
-24	1,429.203	1,483.100	1,538.875	3.76%	3.63%	0.57	0.55
-23	1,341.418	1,391.113	1,442.505	3.69%	3.57%	0.57	0.55
-22	1,259.579	1,305.413	1,352.779	3.63%	3.51%	0.56	0.54
-21	1,183.249	1,225.531	1,269.196	3.56%	3.45%	0.55	0.54
-20	1,112.022	1,151.037	1,191.301	3.50%	3.39%	0.55	0.53
-19	1,045.527	1,081.535	1,118.671	3.43%	3.33%	0.54	0.52
-18	983.422	1,016.661	1,050.919	3.37%	3.27%	0.53	0.52
-17	925.389	956.080	987.689	3.31%	3.21%	0.53	0.51
-16	871.138	899.481	928.652	3.24%	3.15%	0.52	0.51
-15	820.400	846.579	873.505	3.18%	3.09%	0.52	0.50
-14	772.928	797.111	821.969	3.12%	3.03%	0.51	0.50
-13	728.490	750.834	773.786	3.06%	2.98%	0.50	0.49
-12	686.877	707.524	728.718	3.00%	2.92%	0.50	0.48
-11	647.891	666.972	686.547	2.93%	2.86%	0.49	0.48
-10	611.352	628.988	647.069	2.87%	2.80%	0.48	0.47
-9	577.042	593.342	610.042	2.81%	2.75%	0.48	0.46
-8	544.864	559.931	575.357	2.75%	2.69%	0.47	0.46
-7	514.674	528.602	542.852	2.70%	2.63%	0.46	0.45
-6	486.337	499.212	512.377	2.64%	2.58%	0.46	0.45
-5	459.730	471.632	483.794	2.58%	2.52%	0.45	0.44
-4	434.767	445.772	457.009	2.52%	2.47%	0.44	0.43

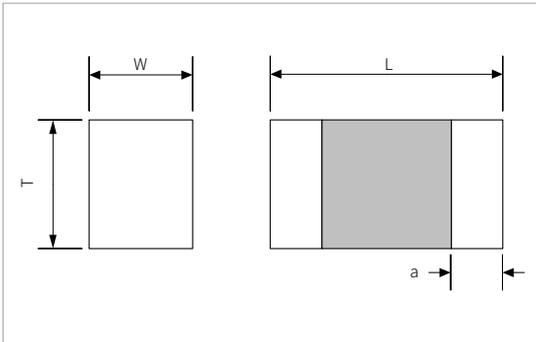
Temp. (°C)	R_Min (kΩ)	R_Typ (kΩ)	R_Max (kΩ)	Res TOL(+)	Res TOL(-)	Temp. TOL. (+)(°C)	Temp. TOL. (-)(°C)
-3	411.305	421.480	431.863	2.46%	2.41%	0.43	0.43
-2	389.245	398.652	408.245	2.41%	2.36%	0.43	0.42
-1	368.496	377.193	386.056	2.35%	2.31%	0.42	0.41
0	348.972	357.012	365.200	2.29%	2.25%	0.41	0.41
1	330.575	338.006	345.569	2.24%	2.20%	0.41	0.40
2	313.254	320.122	327.107	2.18%	2.15%	0.40	0.39
3	296.941	303.287	309.737	2.13%	2.09%	0.39	0.38
4	281.571	287.434	293.389	2.07%	2.04%	0.38	0.38
5	267.084	272.500	277.997	2.02%	1.99%	0.38	0.37
6	253.425	258.426	263.501	1.96%	1.94%	0.37	0.36
7	240.541	245.160	249.842	1.91%	1.88%	0.36	0.36
8	228.386	232.649	236.968	1.86%	1.83%	0.35	0.35
9	216.913	220.847	224.830	1.80%	1.78%	0.34	0.34
10	206.081	209.710	213.381	1.75%	1.73%	0.34	0.33
11	195.850	199.196	202.579	1.70%	1.68%	0.33	0.33
12	186.184	189.268	192.384	1.65%	1.63%	0.32	0.32
13	177.048	179.890	182.758	1.59%	1.58%	0.31	0.31
14	168.411	171.028	173.667	1.54%	1.53%	0.30	0.30
15	160.243	162.651	165.078	1.49%	1.48%	0.30	0.29
16	152.512	154.726	156.957	1.44%	1.43%	0.29	0.29
17	145.197	147.232	149.281	1.39%	1.38%	0.28	0.28
18	138.273	140.142	142.022	1.34%	1.33%	0.27	0.27
19	131.717	133.432	135.156	1.29%	1.29%	0.26	0.26
20	125.508	127.080	128.659	1.24%	1.24%	0.25	0.25
21	119.626	121.066	122.510	1.19%	1.19%	0.25	0.25
22	114.052	115.368	116.689	1.14%	1.14%	0.24	0.24
23	108.766	109.970	111.175	1.10%	1.09%	0.23	0.23
24	103.754	104.852	105.951	1.05%	1.05%	0.22	0.22
25	99.000	100.000	101.000	1.00%	1.00%	0.21	0.21
26	94.400	95.398	96.397	1.05%	1.05%	0.22	0.22
27	90.037	91.032	92.029	1.09%	1.09%	0.23	0.23
28	85.899	86.889	87.881	1.14%	1.14%	0.25	0.25
29	81.973	82.956	83.942	1.19%	1.18%	0.26	0.26
30	78.247	79.222	80.200	1.24%	1.23%	0.27	0.27
31	74.710	75.675	76.645	1.28%	1.28%	0.28	0.28
32	71.351	72.306	73.266	1.33%	1.32%	0.29	0.29
33	68.161	69.104	70.054	1.37%	1.37%	0.31	0.30

Temp. (°C)	R_Min (kΩ)	R_Typ (kΩ)	R_Max (kΩ)	Res TOL(+)	Res TOL(-)	Temp. TOL. (+)(°C)	Temp. TOL. (-)(°C)
34	65.130	66.061	66.999	1.42%	1.41%	0.32	0.32
35	62.249	63.167	64.093	1.47%	1.45%	0.33	0.33
36	59.510	60.415	61.327	1.51%	1.50%	0.34	0.34
37	56.906	57.797	58.696	1.56%	1.54%	0.35	0.35
38	54.429	55.306	56.190	1.60%	1.58%	0.37	0.36
39	52.073	52.934	53.805	1.64%	1.63%	0.38	0.38
40	49.830	50.677	51.532	1.69%	1.67%	0.39	0.39
41	47.697	48.528	49.369	1.73%	1.71%	0.40	0.40
42	45.666	46.482	47.308	1.78%	1.76%	0.42	0.41
43	43.732	44.533	45.343	1.82%	1.80%	0.43	0.42
44	41.890	42.675	43.470	1.86%	1.84%	0.44	0.44
45	40.134	40.904	41.684	1.91%	1.88%	0.46	0.45
46	38.459	39.213	39.978	1.95%	1.92%	0.47	0.46
47	36.863	37.601	38.350	1.99%	1.96%	0.48	0.47
48	35.340	36.063	36.797	2.04%	2.00%	0.49	0.49
49	33.888	34.595	35.314	2.08%	2.05%	0.51	0.50
50	32.502	33.195	33.898	2.12%	2.09%	0.52	0.51
51	31.182	31.859	32.548	2.16%	2.13%	0.53	0.53
52	29.921	30.584	31.258	2.20%	2.17%	0.55	0.54
53	28.718	29.366	30.025	2.25%	2.21%	0.56	0.55
54	27.569	28.203	28.847	2.29%	2.25%	0.57	0.56
55	26.472	27.091	27.721	2.33%	2.28%	0.59	0.58
56	25.424	26.028	26.645	2.37%	2.32%	0.60	0.59
57	24.422	25.013	25.615	2.41%	2.36%	0.62	0.60
58	23.464	24.042	24.631	2.45%	2.40%	0.63	0.62
59	22.549	23.113	23.688	2.49%	2.44%	0.64	0.63
60	21.674	22.224	22.787	2.53%	2.48%	0.66	0.64
61	20.837	21.374	21.924	2.57%	2.52%	0.67	0.66
62	20.036	20.561	21.097	2.61%	2.55%	0.69	0.67
63	19.269	19.782	20.306	2.65%	2.59%	0.70	0.69
64	18.536	19.036	19.548	2.69%	2.63%	0.72	0.70
65	17.834	18.323	18.822	2.73%	2.67%	0.73	0.71
66	17.163	17.640	18.128	2.77%	2.70%	0.74	0.73
67	16.521	16.986	17.463	2.81%	2.74%	0.76	0.74
68	15.906	16.360	16.825	2.85%	2.78%	0.77	0.75
69	15.316	15.760	16.214	2.88%	2.81%	0.79	0.77
70	14.752	15.184	15.628	2.92%	2.85%	0.80	0.78

Temp. (°C)	R_Min (kΩ)	R_Typ (kΩ)	R_Max (kΩ)	Res TOL(+)	Res TOL(-)	Temp. TOL. (+)(°C)	Temp. TOL. (-)(°C)
71	14.209	14.631	15.064	2.96%	2.88%	0.82	0.80
72	13.689	14.101	14.523	3.00%	2.92%	0.83	0.81
73	13.190	13.592	14.004	3.04%	2.96%	0.85	0.83
74	12.712	13.104	13.506	3.07%	2.99%	0.86	0.84
75	12.253	12.635	13.029	3.11%	3.03%	0.88	0.85
76	11.814	12.187	12.571	3.15%	3.06%	0.89	0.87
77	11.393	11.757	12.131	3.19%	3.10%	0.91	0.88
78	10.988	11.344	11.709	3.22%	3.13%	0.92	0.90
79	10.600	10.947	11.304	3.26%	3.17%	0.94	0.91
80	10.228	10.566	10.914	3.30%	3.20%	0.96	0.93
81	9.870	10.200	10.539	3.33%	3.23%	0.97	0.94
82	9.526	9.848	10.180	3.37%	3.27%	0.99	0.96
83	9.196	9.510	9.834	3.40%	3.30%	1.00	0.97
84	8.879	9.185	9.501	3.44%	3.44%	1.02	0.99
85	8.574	8.873	9.181	3.48%	3.37%	1.03	1.00
86	8.281	8.572	8.873	3.51%	3.40%	1.05	1.02
87	7.999	8.283	8.577	3.55%	3.44%	1.07	1.03
88	7.728	8.006	8.292	3.58%	3.47%	1.08	1.05
89	7.467	7.738	8.018	3.62%	3.50%	1.10	1.06
90	7.217	7.481	7.754	3.65%	3.53%	1.12	1.08
91	6.976	7.234	7.501	3.69%	3.57%	1.13	1.09
92	6.745	6.997	7.258	3.72%	3.60%	1.15	1.11
93	6.523	6.769	7.023	3.76%	3.63%	1.17	1.13
94	6.309	6.548	6.797	3.79%	3.66%	1.18	1.14
95	6.102	6.337	6.579	3.83%	3.69%	1.20	1.16
96	5.903	6.132	6.368	3.86%	3.73%	1.22	1.17
97	5.711	5.934	6.165	3.89%	3.76%	1.23	1.19
98	5.526	5.744	5.969	3.93%	3.79%	1.25	1.20
99	5.348	5.561	5.781	3.96%	3.82%	1.27	1.22
100	5.177	5.384	5.599	3.99%	3.85%	1.28	1.24
101	5.012	5.214	5.424	4.03%	3.88%	1.30	1.25
102	4.853	5.051	5.256	4.06%	3.91%	1.32	1.27
103	4.700	4.893	5.093	4.09%	3.94%	1.34	1.29
104	4.553	4.741	4.937	4.13%	3.97%	1.35	1.30
105	4.410	4.594	4.785	4.16%	4.00%	1.37	1.32
106	4.273	4.453	4.639	4.19%	4.03%	1.39	1.34
107	4.141	4.316	4.498	4.22%	4.06%	1.41	1.35

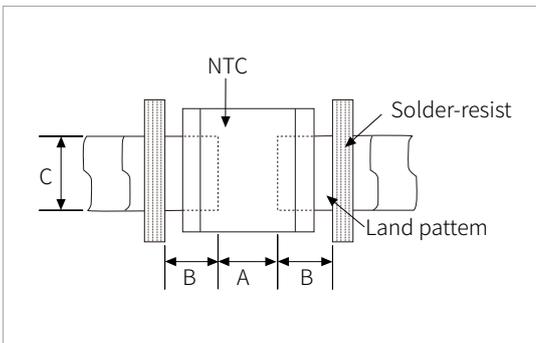
Temp. (°C)	R_Min (kΩ)	R_Typ (kΩ)	R_Max (kΩ)	Res TOL(+)	Res TOL(-)	Temp. TOL. (+)(°C)	Temp. TOL. (-)(°C)
108	4.013	4.184	4.362	4.26%	4.09%	1.42	1.37
109	3.890	4.057	4.231	4.29%	4.12%	1.44	1.38
110	3.771	3.934	4.104	4.32%	4.15%	1.46	1.40
111	3.656	3.816	3.982	4.35%	4.18%	1.48	1.42
112	3.545	3.701	3.863	4.38%	4.21%	1.49	1.44
113	3.438	3.591	3.749	4.42%	4.24%	1.51	1.45
114	3.335	3.484	3.639	4.45%	4.27%	1.53	1.47
115	3.235	3.380	3.532	4.48%	4.30%	1.55	1.49
116	3.139	3.281	3.429	4.51%	4.33%	1.57	1.50
117	3.047	3.185	3.330	4.54%	4.35%	1.59	1.52
118	2.957	3.093	3.234	4.57%	4.38%	1.60	1.54
119	2.871	3.003	3.141	4.60%	4.41%	1.62	1.56
120	2.787	2.916	3.052	4.63%	4.44%	1.64	1.57
121	2.706	2.832	2.964	4.66%	4.47%	1.66	1.59
122	2.627	2.751	2.880	4.70%	4.49%	1.68	1.61
123	2.551	2.672	2.798	4.73%	4.52%	1.70	1.63
124	2.478	2.596	2.719	4.76%	4.55%	1.72	1.64
125	2.407	2.522	2.643	4.79%	4.58%	1.74	1.66

## DIMENSION SPECIFICATION



Size	L(mm)	W(mm)	T(mm)	a(mm)
0402	1.0±0.05	0.5	0.5±0.05	0.25±0.10

## DIMENSION SPECIFICATION



A(mm)	B(mm)	C(mm)
0.4	0.4-0.5	0.5

## TAPING

Type	0201	0402	0603	0805
Tape thickness(mm)	0.5±0.15	0.5±0.15	0.8±0.15	0.85±0.2
Tape material	Paper Tape			
Quantity per Reel	15K	10K	4K	4K

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