

THINKING ELECTRONIC INDUSTRIAL CO., LTD.

HEAD OFFICE: 12F, No.93, Dashun 1st Rd., Zuoying Dist., Kaohsiung, Taiwan
 TEL: 886-7-5577660 FAX: 886-7-5570560

MANUFACTURING SITE

- KAOHSIUNG FACTORY: No.51, Kaifa Road, Nantze Export Processing Zone,
Kaohsiung City 81170, Taiwan
TEL: 886-7-9616668 FAX: 886-7-9616698
- KAOHSIUNG FACTORY 2:No. 2-2, Xinjian S. Rd., N.E.P.Z., Kaohsiung City 81170, Taiwan
TEL: 886-7-9630001 FAX: 886-7-3635113
- CHANGZHOU FACTORY: No.6 Longmen Road,wujian National High&New-Tech Industrial
Development Zone,ChangZhou,JiangSu,China
TEL:86-519-86578999 FAX:86-519-86558643
- DONG GUAN FACTORY: Chiao-Tou Tsun, Sha-Tao Hsiang, Chang-An Town,
Dong-Guan City 523863, Guangdong, China
TEL:86-769-85542016 FAX:86-769-85546890
- YICHANG FACTORY: No. 283 Xiaoting Avenue, Xiaoting Dist., Yichang
City 443007, Hubei, China
TEL:86-717-6510010 FAX:86-717-6511430



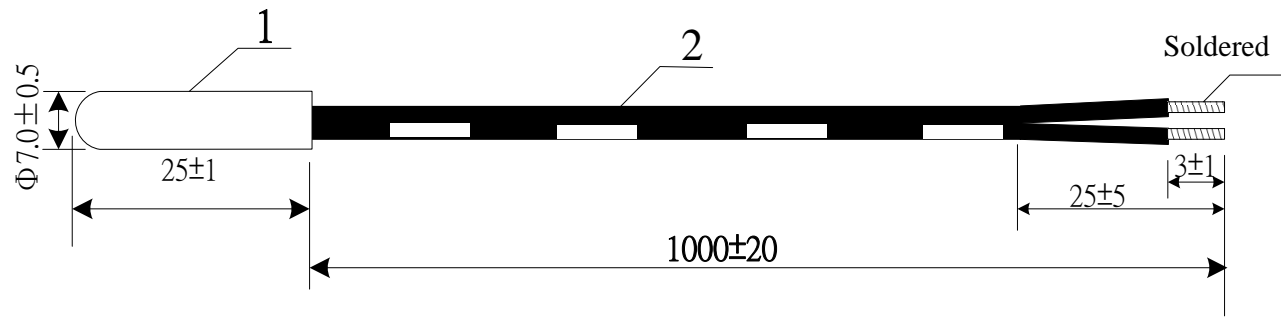
SPECIFICATION FOR APPROVAL

CUSTOMER	Ozdisan-Batel
MODEL NO.	NTSG0103
PART NO.	NTSG0103FZ516(RoHS)
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	Apr.14.2021
REV. NO	1.0
REV. DATE	

FOR CUSTOMER APPROVAL	CHECKED BY
	Hu Feng
	APPROVED BY
	FM CHU



A. Material List		
NO.	ITEM	DESCRIPTION
1	CAP	Φ7*25 PBT PLASTIC (white)
2	LEAD WIRE	UL2651#26*2C TS black wire(white mark)
*	ELEMENT	NTC Thermistor
B. Electrical Characteristic		
ITEM	VALUE	
R25	10KΩ ±1%	
B25/85	3970K±1%	



							Customer	Ozdisan-Batel	
							Customer P/N		
							Thinking P/N	NTSG0103FZ516	
							Drawing NO.	SG2104030	
							Date	2021/4/14	
							Tol: ±mm	Unit: mm	Scale:
1.0	2021/4/14	New Drawing		Hu Landan	Hu Feng	FM CHU	<i>THINKING ELECTRONIC INDUSTRIAL CO.,LTD</i>		
Rev.	Date	Subjects of Change	ECN No.	Designed by	Checked by	Approved by			

THINKING ELECTRONIC INDUSTRIAL CO.,LTD

CUSTOMER:Ozdisan-Batel

CUSTOMER P/N :

Part No :NTSG0103FZ516

NO	PART NAME	PART P/N	Q 'TY	UL FILE NO
1	CAP	Φ7*25 PBT PLASTIC (white)	1	
2	LEAD WIRE	UL2651#26*2C TS black wire(white mark)	1	
*	ELEMENT	NTC Thermistor	1	
REMARK				

Approved by: FM CHU

Checked by: Hu Feng

Designed by: Hu Landan

Specification of NTC Thermistor for Temperature Measurement and Control

PART NO. NTSG0103FZ516

CUSTOMER P/N.

1. Electrical characteristics

	Parameter	Symbol	Test Conditions	Min.	Nor.	Max.	Unit.
a.	Resistance At 25°C	R ₂₅	Ta=25°C±0.05°C P _T ≤0.02mW	9.9	10.00	10.1	KΩ
b.	B Constant	B25/85°C	1779.707* Ln(R25/R85)	3930	3970	4010	K
c.	Thermal Dissipation Constant(in air)	δ	Ta=25°C	-----	Approx.5.0	-----	mW/°C
d.	Thermal Time Constant(in water)	τ	^{25°C→85°C} T1=25+(85-25)*63.2%=62.9°C	-----	Approx.15	-----	Sec
e.	Hi-Pot Test	-----	1500V AC 5 sec	-----	-----	5	mA
f.	Insulation test	-----	DC 500 V 3 Sec	Min : 100 MΩ			

2. Maximum Ratings

	Parameter	Specification	Unit
a.	Operation Temperature Range	-30 ----- +105	°C

3. Reliability Test

Item	Test Conditions	Variable
Temp. cycle test	-30 °C X 30min → +25 °C X 5min +105°C X 30min → +25 °C X 5min } X 10Cycles	Within ± 3 %
Humidity test	40 °C 95 % RH X 1000 HRS	Within ± 3 %
High Temperature Storage	105± 5 °C , 1000 ± 24 hrs	Within ± 3 %
low Temperature Storage	-40°C± 5 °C , 1000 ± 24 hrs	Within ± 3 %

Install and use

1. Use this product within the specified temperature range.
2. Higher temperature may cause deterioration of the characteristics or the material quality of this product.
3. Do not melt the solder in resin head, when you solder this product. If you melt the solder in resin head, it has possibility that the break of wire, short and insulation damage.
4. Do not touch the resin head directly by solder iron. It may cause the melt of solder in resin head.
5. At least away from resin head 10mm above when lead dividing.
6. In case you cut the lead wire of this product less than 10mm from resin head, the heat of melted solder at lead wire edge is propagated easily to the resin head along the lead wire.
7. Radius of lead bending should be more than 1mm when lead bending.
Holding element by side lead wire is recommended when lead wire is bent or cut.
8. Do not apply an excessive force to the lead. Otherwise, it may cause junction between lead and element to break or crack.
9. The ceramic element of this product is fragile, and care must be taken not to load an excessive press-force or not to give a shock at handling. Such forces may cause cracking or chipping.
10. If you mold by resin this product, please evaluate the quality of this product before you use it.

Warehouse Storage Conditions of Products

To keep solderability of product from declining, the following storage condition is recommended.

1. Storage condition:

Temperature -10°C to +40°C

Humidity less than 75%RH (not dewing condition)

2. Storage term:

Use this product within 1 year after delivery by first-in and first-out stocking system.

3. Handling after unpacking:

After unpacking, reseal product promptly or store it in a sealed container with a drying agent.

4. Storage place:

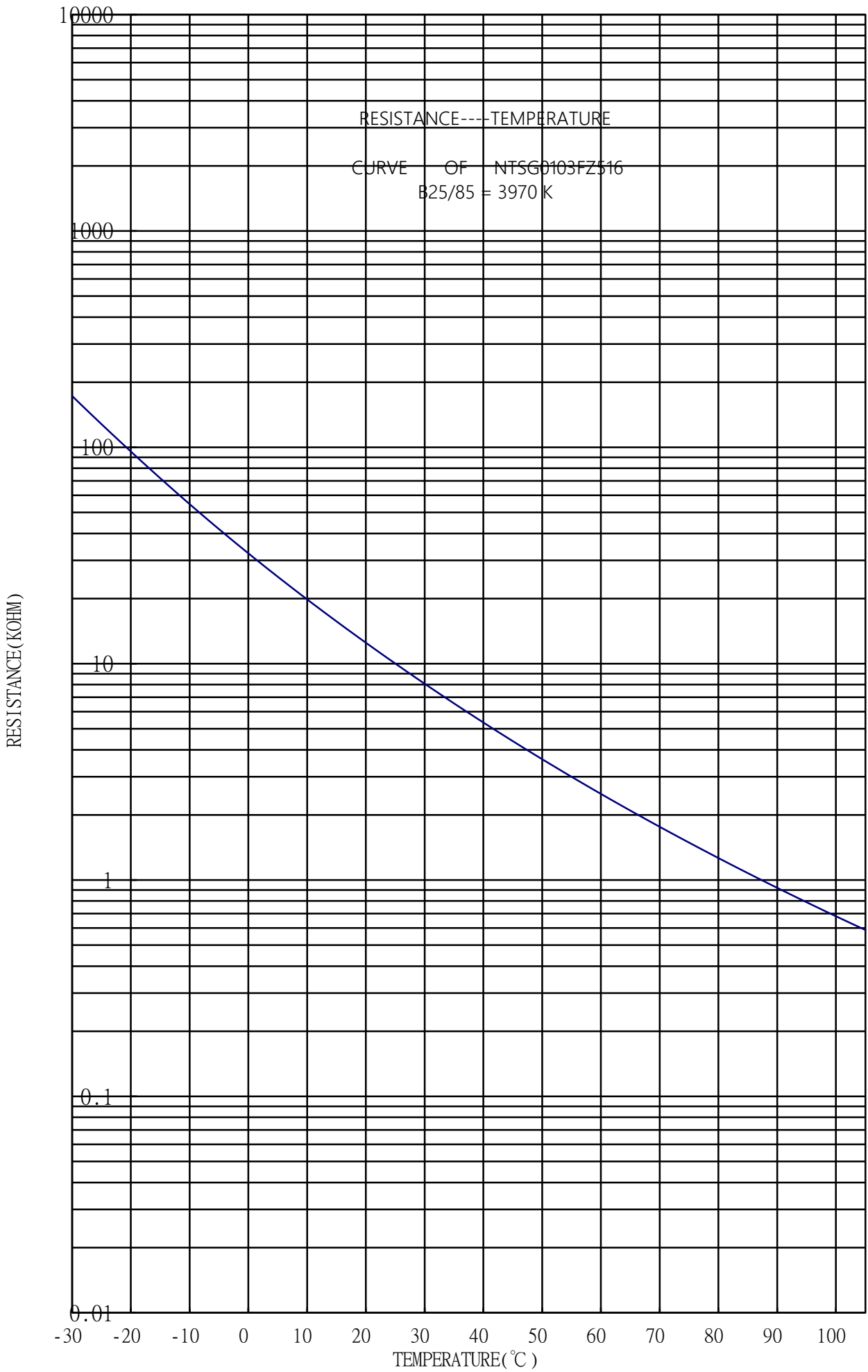
Do not store this product in corrosive gas (Sulfuric acid gas, Chlorine gas, etc.) or in direct sunlight.

Warn and note item

This product is designed for application in an ordinary environment (normal room temperature, humidity and atmospheric pressure).

Do not use under the following conditions because all of these factors can deteriorate the product characteristics or cause failures and burn-out.

1. Corrosive gas or deoxidizing gas (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, etc.)
2. Volatile or flammable gas
3. Dusty conditions
4. Under vacuum, or under high or low pressure
5. Wet or humid locations; soak in the liquid or wash with liquid
6. Places with salt water, oils, chemical liquids or organic solvents and do not use directly with quick-drying glue.
7. Strong vibrations
8. Other places where similar hazardous conditions exist
9. Be sure to provide an appropriate fail-safe function on your product to prevent secondary damages that may be caused by the abnormal function or the failure of our product.



R - T Table

Part No. :NTSG0103FZ516

R25 =10 K Ω \pm 1%

B25/85 = 3970 K \pm 1%

Temperature ($^{\circ}$ C)	Rmax. (K Ω)	Rnor. (K Ω)	Rmin. (K Ω)	Temperature Tol. ($^{\circ}$ C)	
-30	179.230	172.473	165.955	-0.62	0.64
-29	168.569	162.312	156.273	-0.62	0.64
-28	158.606	152.812	147.215	-0.61	0.63
-27	149.290	143.922	138.733	-0.60	0.62
-26	140.570	135.597	130.786	-0.60	0.62
-25	132.404	127.795	123.334	-0.59	0.61
-24	124.752	120.481	116.344	-0.58	0.60
-23	117.579	113.620	109.783	-0.58	0.60
-22	110.852	107.182	103.623	-0.57	0.59
-21	104.541	101.139	97.8371	-0.56	0.58
-20	98.6198	95.4651	92.4020	-0.56	0.57
-19	93.0622	90.1370	87.2950	-0.55	0.57
-18	87.8453	85.1326	82.4955	-0.54	0.56
-17	82.9472	80.4315	77.9843	-0.54	0.55
-16	78.3478	76.0145	73.7434	-0.53	0.55
-15	74.0282	71.8639	69.7559	-0.52	0.54
-14	69.9706	67.9629	66.0061	-0.51	0.53
-13	66.1585	64.2958	62.4793	-0.51	0.53
-12	62.5763	60.8480	59.1614	-0.50	0.52
-11	59.2093	57.6055	56.0396	-0.49	0.51
-10	56.0440	54.5556	53.1014	-0.49	0.51
-9	53.0673	51.6859	50.3354	-0.48	0.50
-8	50.2673	48.9850	47.7307	-0.47	0.49
-7	47.6326	46.4423	45.2772	-0.47	0.49
-6	45.1528	44.0477	42.9655	-0.46	0.48
-5	42.8178	41.7919	40.7865	-0.45	0.47
-4	40.6185	39.6660	38.7319	-0.45	0.47
-3	38.5461	37.6617	36.7940	-0.44	0.46
-2	36.5927	35.7715	34.9653	-0.43	0.45
-1	34.7506	33.9881	33.2391	-0.43	0.44
0	33.0128	32.3049	31.6090	-0.42	0.44
1	31.3727	30.7155	30.0690	-0.41	0.43
2	29.8243	29.2141	28.6136	-0.41	0.42
3	28.3617	27.7953	27.2375	-0.40	0.42
4	26.9797	26.4540	25.9359	-0.39	0.41
5	25.6734	25.1855	24.7044	-0.38	0.40
6	24.4380	23.9852	23.5386	-0.38	0.39
7	23.2692	22.8492	22.4346	-0.37	0.39
8	22.1631	21.7736	21.3887	-0.36	0.38
9	21.1158	20.7547	20.3976	-0.35	0.37
10	20.1240	19.7892	19.4580	-0.35	0.36

R - T Table

Part No. :NTSG0103FZ516

R25 =10 K Ω \pm 1%

B25/85 = 3970 K \pm 1%

Temperature ($^{\circ}$ C)	Rmax. (K Ω)	Rnor. (K Ω)	Rmin. (K Ω)	Temperature Tol. ($^{\circ}$ C)	
11	19.1842	18.8740	18.5670	-0.34	0.35
12	18.2935	18.0062	17.7216	-0.33	0.35
13	17.4490	17.1830	16.9193	-0.32	0.34
14	16.6481	16.4019	16.1577	-0.32	0.33
15	15.8882	15.6605	15.4345	-0.31	0.32
16	15.1670	14.9565	14.7475	-0.30	0.31
17	14.4824	14.2879	14.0947	-0.29	0.30
18	13.8322	13.6527	13.4742	-0.28	0.30
19	13.2147	13.0490	12.8842	-0.27	0.29
20	12.6279	12.4752	12.3232	-0.27	0.28
21	12.0702	11.9296	11.7895	-0.26	0.27
22	11.5400	11.4106	11.2816	-0.25	0.26
23	11.0358	10.9170	10.7983	-0.24	0.25
24	10.5562	10.4472	10.3382	-0.23	0.24
25	10.1000	10.0000	9.90000	-0.22	0.23
26	9.67423	9.57428	9.47442	-0.23	0.25
27	9.26860	9.16888	9.06932	-0.25	0.26
28	8.88208	8.78273	8.68362	-0.26	0.27
29	8.51366	8.41483	8.31632	-0.27	0.28
30	8.16244	8.06425	7.96645	-0.28	0.29
31	7.82752	7.73009	7.63311	-0.29	0.30
32	7.50809	7.41151	7.31545	-0.30	0.32
33	7.20335	7.10772	7.01266	-0.31	0.33
34	6.91257	6.81796	6.72398	-0.33	0.34
35	6.63504	6.54153	6.44869	-0.34	0.35
36	6.37012	6.27775	6.18610	-0.35	0.36
37	6.11716	6.02599	5.93559	-0.36	0.38
38	5.87557	5.78565	5.69654	-0.37	0.39
39	5.64480	5.55616	5.46837	-0.39	0.40
40	5.42430	5.33698	5.25054	-0.40	0.41
41	5.21359	5.12760	5.04253	-0.41	0.43
42	5.01217	4.92754	4.84386	-0.42	0.44
43	4.81959	4.73635	4.65407	-0.44	0.45
44	4.63543	4.55358	4.47272	-0.45	0.46
45	4.45929	4.37883	4.29939	-0.46	0.48
46	4.29076	4.21170	4.13369	-0.47	0.49
47	4.12950	4.05184	3.97524	-0.49	0.50
48	3.97514	3.89888	3.82371	-0.50	0.51
49	3.82737	3.75251	3.67875	-0.51	0.53
50	3.68586	3.61240	3.54004	-0.52	0.54
51	3.55033	3.47825	3.40729	-0.54	0.55

R - T Table

Part No. :NTSG0103FZ516

R25 =10 K Ω \pm 1%

B25/85 = 3970 K \pm 1%

Temperature ($^{\circ}$ C)	Rmax. (K Ω)	Rnor. (K Ω)	Rmin. (K Ω)	Temperature Tol. ($^{\circ}$ C)	
52	3.42049	3.34978	3.28021	-0.55	0.57
53	3.29607	3.22673	3.15854	-0.56	0.58
54	3.17683	3.10884	3.04200	-0.58	0.59
55	3.06252	2.99587	2.93037	-0.59	0.60
56	2.95291	2.88758	2.82341	-0.60	0.62
57	2.84779	2.78376	2.72091	-0.62	0.63
58	2.74694	2.68421	2.62265	-0.63	0.64
59	2.65018	2.58872	2.52843	-0.64	0.66
60	2.55732	2.49712	2.43808	-0.66	0.67
61	2.46819	2.40921	2.35142	-0.67	0.69
62	2.38260	2.32485	2.26826	-0.68	0.70
63	2.30042	2.24386	2.18847	-0.70	0.71
64	2.22147	2.16609	2.11188	-0.71	0.73
65	2.14563	2.09140	2.03834	-0.73	0.74
66	2.07275	2.01966	1.96773	-0.74	0.75
67	2.00270	1.95072	1.89991	-0.75	0.77
68	1.93535	1.88448	1.83476	-0.77	0.78
69	1.87060	1.82080	1.77215	-0.78	0.79
70	1.80833	1.75959	1.71198	-0.80	0.81
71	1.74843	1.70072	1.65415	-0.81	0.82
72	1.69080	1.64410	1.59854	-0.82	0.84
73	1.63534	1.58964	1.54507	-0.84	0.85
74	1.58196	1.53724	1.49364	-0.85	0.86
75	1.53058	1.48681	1.44416	-0.87	0.88
76	1.48110	1.43828	1.39655	-0.88	0.89
77	1.43346	1.39155	1.35073	-0.90	0.91
78	1.38757	1.34656	1.30663	-0.91	0.92
79	1.34336	1.30323	1.26417	-0.93	0.94
80	1.30076	1.26149	1.22329	-0.94	0.95
81	1.25971	1.22128	1.18391	-0.96	0.96
82	1.22014	1.18254	1.14599	-0.97	0.98
83	1.18200	1.14521	1.10945	-0.99	0.99
84	1.14522	1.10922	1.07424	-1.00	1.01
85	1.10975	1.07453	1.04031	-1.02	1.02
86	1.07555	1.04108	1.00761	-1.03	1.04
87	1.04255	1.00882	0.97608	-1.05	1.05
88	1.01071	0.97771	0.94568	-1.06	1.07
89	0.98000	0.94770	0.91637	-1.08	1.08
90	0.95035	0.91874	0.88810	-1.09	1.10
91	0.92173	0.89080	0.86082	-1.11	1.11
92	0.89411	0.86384	0.83451	-1.12	1.13

R - T Table

Part No. :NTSG0103FZ516

R25 =10 K Ω \pm 1%B25/85 = 3970 K \pm 1%

Temperature (°C)	Rmax. (K Ω)	Rnor. (K Ω)	Rmin. (K Ω)	Temperature Tol. (°C)	
93	0.86743	0.83781	0.80912	-1.14	1.14
94	0.84168	0.81269	0.78462	-1.15	1.16
95	0.81680	0.78843	0.76097	-1.17	1.17
96	0.79278	0.76501	0.73814	-1.19	1.19
97	0.76956	0.74239	0.71610	-1.20	1.20
98	0.74714	0.72054	0.69481	-1.22	1.22
99	0.72547	0.69943	0.67426	-1.23	1.23
100	0.70452	0.67904	0.65440	-1.25	1.25
101	0.68428	0.65933	0.63523	-1.27	1.27
102	0.66471	0.64029	0.61670	-1.28	1.28
103	0.64579	0.62188	0.59879	-1.30	1.30
104	0.62749	0.60408	0.58149	-1.32	1.31
105	0.60980	0.58688	0.56477	-1.33	1.33