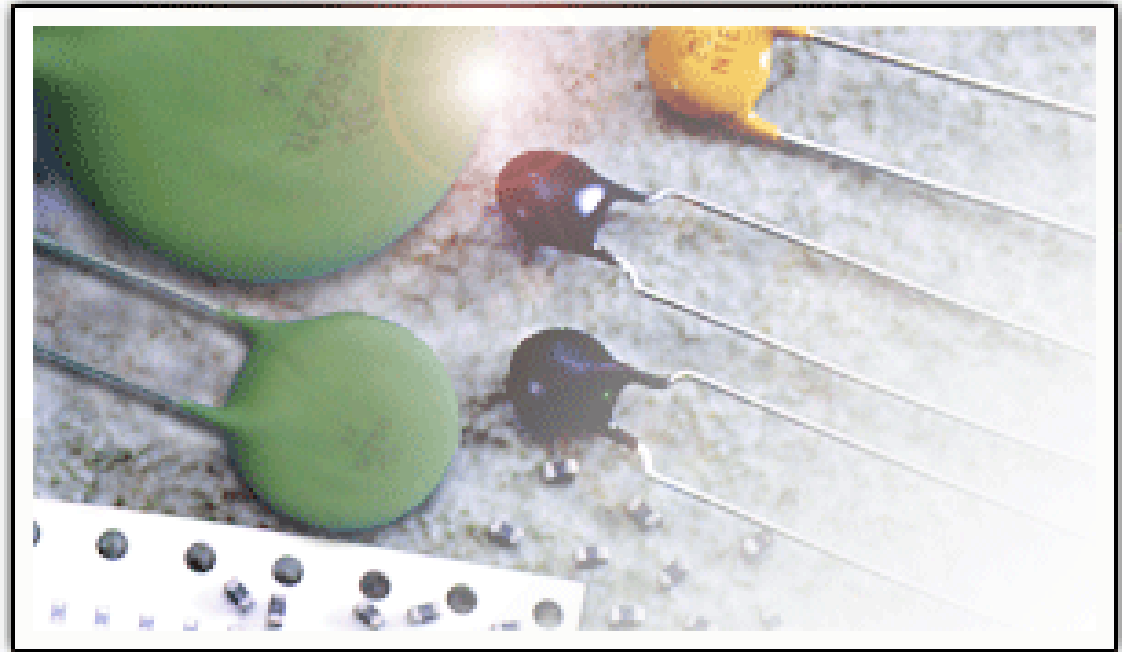


南京富聚科技有限公司

FUJUTEC TECHNOLOGY (HK) Co., LTD.



Products Catalogue

Tel: 0086 25-57902311 57902322

Fax: 0086 25-57713373

E-mail: sales@fujutec.com

Http://www.fujutec.com

Thermistor is the thermally sensitive resistor whose main function is to exhibit a change in electrical resistance with environmental temperature. Especially, NTC (Negative Temperature Coefficient) thermistor decreases in electrical resistance as temperature increases. With high sensitivity and low price, NTC thermistor has variety of application fields such as home electronics, automobile, mobile telecommunication, computer, medical field and other industrial usage.

Thermistor Resistance Value

In general, resistance value of a NTC thermistor is the zero-power resistance at the standard temperature of 25°C. The zero-power resistance means the value of DC resistance of a thermistor measured at a specified temperature with electric load being kept so small where there is no obvious change in the measured resistance by the influence of the applied electric load.

Temperature Dependence of Resistance

The dependence of the thermistor resistance on temperature can be approximately described by the following equation:

$$R_1 = R_0 \exp \{ B(1/T_1 - 1/T_0) \}$$

R_1 : resistance value at absolute temperature T_1 (K)

R_0 : resistance value at absolute temperature T_0 (K)

B : B constant

$$T(K) = T(^{\circ}C) + 273.15$$

From the above equation, B constant can be represented as

$$B = \ln(R_0/R_1) / (1/T_0 - 1/T_1)$$

Without special note, B constant is calculated from the resistance values at 25°C and 85°C [$B_{25/85}$], which is the most common.

The resistance-temperature coefficient is defined as the rate of change of the resistance, which can be described as

$$a = -(B/T^2) \times 100 (\%/^{\circ}C)$$

Dissipation Factor [δ]

Dissipation factor is defined as the ratio of the power dissipation and the resultant change in the temperature of thermistor body. The unit of dissipation factor is [mw/K] and the mathematical expression is

$$\delta = P / (T_2 - T_1)$$

where P, T_2 , and T_1 are the dissipated power, thermistor temperature, and ambient temperature, respectively.

Maximum Power Rating P

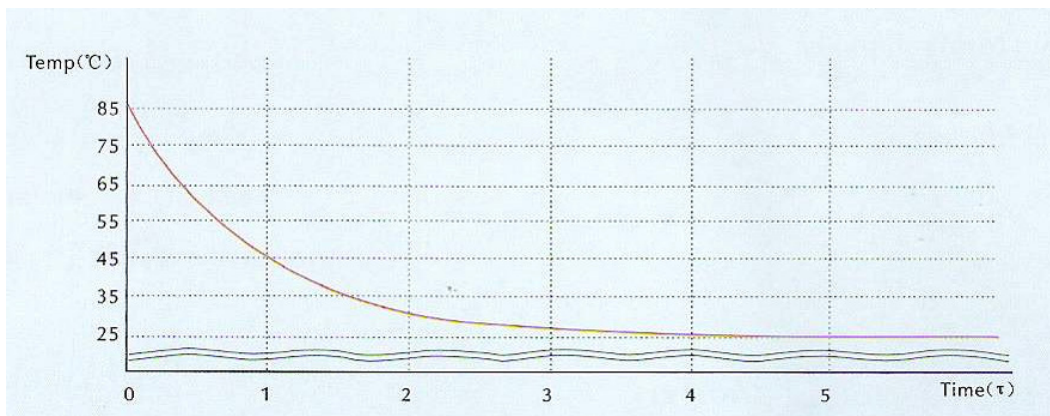
The maximum power rating P of a thermistor is the maximum handling power, keeping its temperature not exceeding the allowed maximum temperature for operation. With known dissipation factor δ , the maximum power can be calculated as

$$P_{\max} = \delta (T_{\max} - T_a)$$

in this catalog, T_a is selected as 25°C.

Thermal Time Constant [τ]

Thermal time constant means the time necessary for an unloaded thermistor to vary its temperature by 63.2% of the difference between its temperature and the ambient temperature. The values of T, specified in this catalog is determined in still air at an ambient temperature of 25°C.



Stability-Reliability

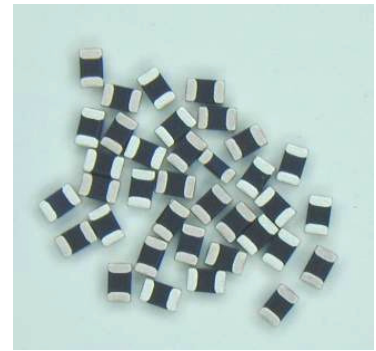
In the view of long time period the resistance value of a thermistor can be shifted. Physical reason of this maybe thermal stress can make a change in concentration of lattice imperfection and diffuse to the contact area of metalized surface; therefore, the stability and reliability tests are very important for NTC thermistors.

High Quality Thermistor

Shows exceptionally low drift of resistant with respect to the long duration period at elevated temperature. The best ceramic technology of E WAY gives high quality thermistors of various styles and properties.

DESCRIPTION

The thermistor is a thermally sensitive resistor whose primary function is to exhibit a change in electrical resistance as the body temperature changed. NTC thermistor is one whose zero-power resistance will decrease when the body temperature increases.



FEATURES

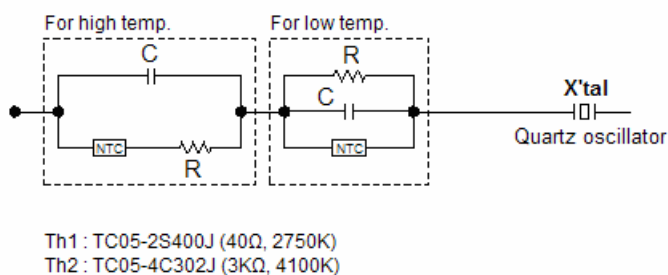
- Multilayer structure allows diverse resistance values in the same B constant.
- Ultra small size, low capacitor, high B value.
- Glass coating performs for long-term reliability.
- Non-polarized for mounting.
- Possibility for Flow/Reflow soldering.

APPLICATIONS

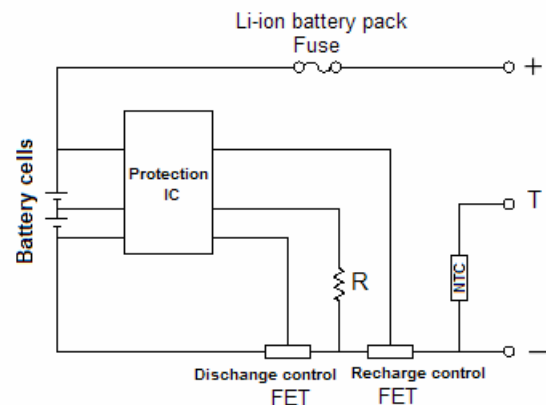
- Temperature compensation for crystal oscillators (TCXO).
- Temperature compensation for personal computers.
- Temperature detection for CPU and memory devices.
- Temperature detection for battery packs.
- Temperature compensation for contrast of LCDs.
- Temperature compensation and sensing of car audio equipments. (CD, MD, tuner).

an example

- **Temperature compensated crystal oscillator (TCXO)**
Chip thermistor is used for temperature compensation of TCXO, which is a key device for mobile phones.



- **Battery pack**
Chip thermistor with high precision is used for the protection circuit inside the battery pack for mobile electronic devices.



BASIC CHARACTERISTICS

1. Zero-power Resistance of Thermistor

$$R = R_0 \exp B (1/T - 1/T_0) \text{ ----- (1)}$$

R : Resistance in ambient temperature T (K)
(K : absolute temperature)

R₀ : Resistance in ambient temperature T₀ (K)

B : B-constant of Thermistor

2. B-Constant

As eq. (1)

$$B = \ln (R/R_0) / (1/T - 1/T_0) \text{ ----- (2)}$$

3. Thermal Dissipation Constant

When it spends electric power P (mW) in ambient temperature T₁ and the thermistor temperature rises T₂, there is a relationship as follows

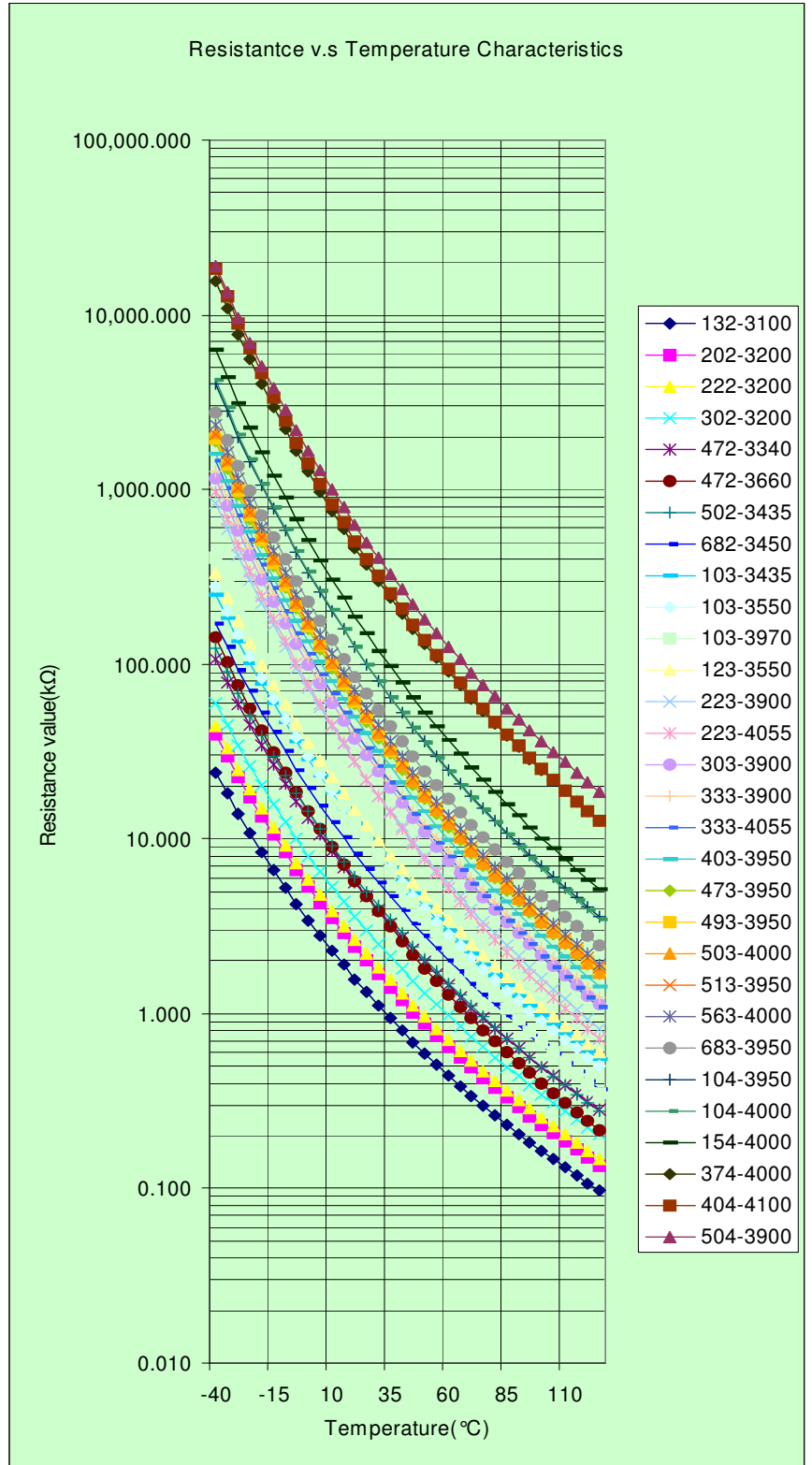
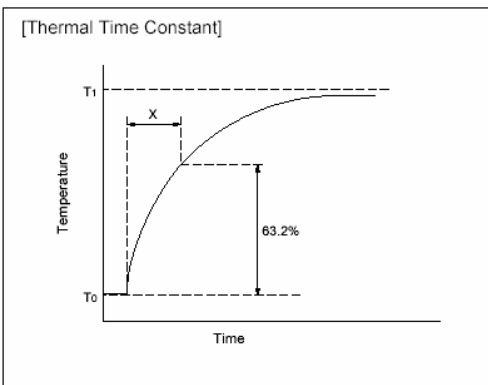
$$P = C (T_2 - T_1) \text{ ----- (3)}$$

C : Thermal dissipation constant (mW/°C)

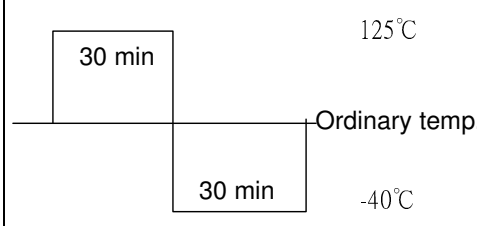
Thermal dissipation constant is changed by dimensions, measure, measured condition, etc.

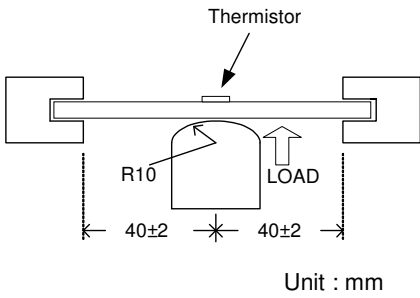
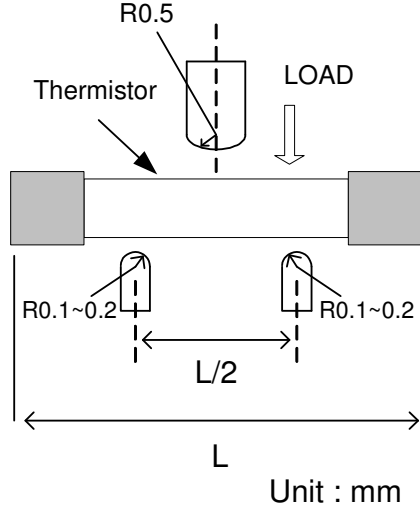
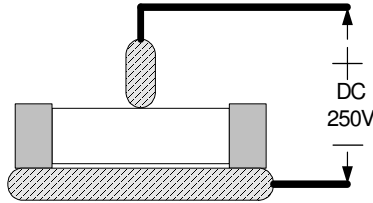
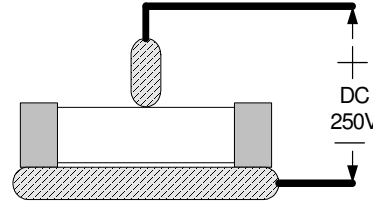
4. Thermal Time Constant

The Thermal Time Constant for a thermistor is the time required for a thermistor to change its body temperature by 63.2% of a specific temperature span from T₀(°C) to T₁(°C).

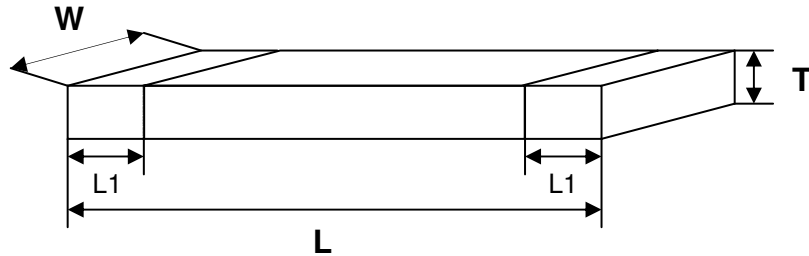


Reliability Test

Test Item		Standard	Test Method	$\Delta R_{25} / R_{25}$
Environmental test	Life	MIL-STD-202F Method 108A	Test temperature : 70°C Test duration : 1000 hrs Load power : 1206 – 6.5 mW , 0805 – 5.0 mW , 0603 – 4.5 mW , 0402 – 3.5 mW ◦	MAX. \pm 3%
	Humidity	MIL-STD-202F Method 103B	Test temperature : 40°C Test humidity : 95% Test duration : 1000 hrs Load power : 1206 – 6.5 mW , 0805 – 5.0 mW , 0603 – 4.5 mW , 0402 – 3.5 mW ◦	MAX. \pm 3%
	Thermal shock	MIL-STD-202F Method 107G	Test cycle : 10 times Test temperature : - 40°C and 125°C 	MAX. \pm 3%
	Storage in dry heat	IEC 68-2-2	Test temperature : 125°C Test duration : 1000 hrs	MAX. \pm 3%
Mechanical Performance test	Solderability	MIL-STD-202F Method 208 H	Soldering temperature : 235°C Duration of immersion : 2 seconds	95% min. coverage
	Resistance to soldering heat	MIL-R-55342D PARA 4.7.7	Soldering temperature : 260°C Duration of immersion : 10 seconds	MAX. \pm 3%

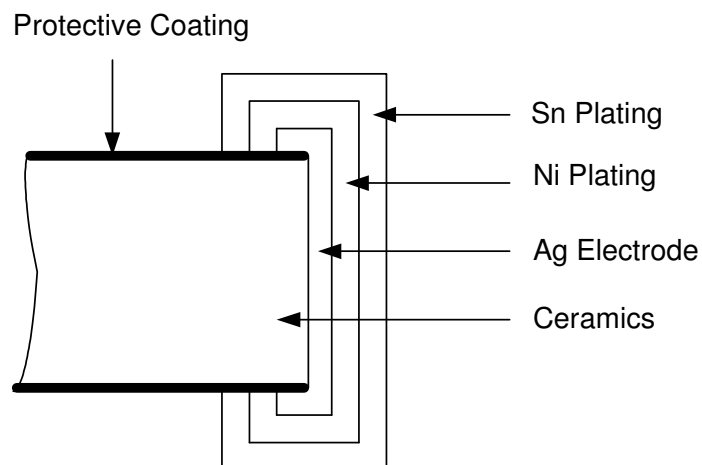
Test Item		Standard	Test Method	$\Delta R_{25} / R_{25}$
Mechanical Performance test	Bending strength	JIS C 5202 6.1.4	<p>Pressurizing rod at a rate of 1mm/sec Maintenance time : 5 sec Bending distance : 1 mm (min.)</p>  <p>Unit : mm</p>	Visual : No mechanical damage
	Resistance to flexure of substrate	JIS C 5202 6.2.1	<p>Pressurizing force shall be 3kg</p>  <p>Unit : mm</p>	MIN. 3Kg
Electrical Performance test	Insulation resistance	MIL-STD-202F Method 302	<p>DC 250V For 10 seconds</p> 	Over 1000MΩ
	Dielectric withstand voltage	MIL-STD-202F Method 301	<p>DC 250V For 10 seconds</p> 	NOT Short

SMD CHIP DIMENSION



ITEM	L (mm)	W (mm)	T (mm)	L1(mm)
1005 (0402)	1.00 ±0.10	0.50 ±0.10	0.60 max	0.15~0.30
1608 (0603)	1.60 ±0.15	0.80 ±0.15	0.95 max	0.20~0.50
2012 (0805)	2.00 ±0.20	1.25 ±0.20	1.20 max	0.20~0.60
3216 (1206)	3.20 ±0.20	1.60 ±0.20	1.40 max	0.25~0.60

SMD CHIP STRUCTURE



ORDERING INFORMATION

LBNS 03 - 103 J 3I - N

SMD NTC Series Code

Chip Size (mm):

- 02 (0402) – 1.0 x 0.5 x 0.6
- 03 (0603) – 1.6 x 0.8 x 0.9
- 05 (0805) – 2.0 x 1.2 x 1.2

Resistance at 25°C:

- 202 = 20 x 10² = 2000 Ω
- 103 = 10 x 10³ = 10000 Ω
- 564 = 56 x 10⁴ = 560000 Ω

Resistance Tolerance:

- F=±1% ; G=±2% ; H=±3% ; J =±5 % ; K=±10%

B Value (K):

1:1000	C:101~150	I:401~450	O:701~750
2:2000	D:151~200	J:451~500	P:751~800
3:3000	E:201~250	K:501~550	Q:801~850
4:4000	F:251~300	L:551~600	R:851~900
A:0~50	G:301~350	M:601~650	S:901~950
B:51~100	H:351~400	N:651~700	T:951~999

Coating Color:

- Blank = Blue
- N = New Color (Black)

SPECIFICATION

1005 (0402) SIZE

Part Number	Resistance (25°C) (Ω)	B-constant (25-85°C) (K)	Maximum Power Rating (25°C) (mW)	Thermal Dissipation Constant (mW/°C)	Operating Temp. Range (°C)
LBNS02-220 □3C-N	22	3150	250	2.5	-40 ~ 125
LBNS02-300 □3E-N	30	3250			
LBNS02-470 □3E-N	47	3250			
LBNS02-221 □3E-N	220	3250			
LBNS02-102 □4B-N	1,000	4100			
LBNS02-472 □3J-N	4,700	3500			
LBNS02-103 □3I-N	10,000	3435			
LBNS02-103 □3R-N	10,000	3900			
LBNS02-223 □3Q-N	22,000	3830			
LBNS02-473 □3S-N	47,000	3920			
LBNS02-473 □4A-N	47,000	4050			
LBNS02-683 □4C-N	68,000	4150			
LBNS02-104 □4A-N	100,000	4050			
LBNS02-104 □4F-N	100,000	4300			
LBNS02-474 □4A-N	470,000	4050			

Remark : 1. Maximum Power Rating = Thermal Dissipation Constant × (125°C - 25°C)

※ please inquire to our sales for other specifications.

1608 (0603) SIZE

Part Number	Resistance (25°C) (Ω)	B-constant (25-85°C) (K)	Maximum Power Rating (25°C) (mW)	Thermal Dissipation Constant (mW/°C)	Operating Temp. Range (°C)
LBNS03-220 □3C-N	22	3150	350	3.5	-40 ~ 125
LBNS03-300 □3C-N	30	3150			
LBNS03-101 □3E-N	100	3250			
LBNS03-221 □3E-N	220	3250			
LBNS03-102 □2S-N	1,000	2950			
LBNS03-102 □4C-N	1,000	4150			
LBNS03-202 □4C-N	2,000	4150			
LBNS03-222 □3C	2,200	3150			
LBNS03-222 □4C-N	2,200	4150			
LBNS03-332 □3C	3,300	3150			
LBNS03-332 □3F-N	3,300	3300			
LBNS03-472 □3G-N	4,700	3340			
LBNS03-472 □4J-N	4,700	4500			
LBNS03-502 □3G-N	5,000	3340			
LBNS03-502 □3T-N	5,000	3980			
LBNS03-682 □3I-N	6,800	3435			
LBNS03-682 □4E-N	6,800	4250			
LBNS03-103 □3I-N	10,000	3435			
LBNS03-103 □3K-N	10,000	3550			
LBNS03-103 □3T-N	10,000	3970			
LBNS03-103 □4A-N	10,000	4050			
LBNS03-223 □3R	22,000	3900			
LBNS03-223 □4A-N	22,000	4050			
LBNS03-333 □3R	33,000	3900			
LBNS03-473 □3S-N	47,000	3950			
LBNS03-473 □4A-N	47,000	4050			

1608 (0603) SIZE

Part Number	Resistance (25°C) (Ω)	B-constant (25-85°C) (K)	Maximum Power Rating (25°C) (mW)	Thermal Dissipation Constant (mW/°C)	Operating Temp. Range (°C)
LBNS03-503 □4A-N	50,000	4000	350	3.5	-40 ~ 125
LBNS03-683 □4C-N	68,000	4150			
LBNS03-104 □3S-N	100,000	3950			
LBNS03-104 □4A-N	100,000	4050			
LBNS03-104 □4H-N	100,000	4400			
LBNS03-154 □4A	150,000	4000			
LBNS03-154 □4H-N	150,000	4400			
LBNS03-154 □4L-N	150,000	4600			
LBNS03-204 □4B-N	200,000	4055			
LBNS03-224 □3S	220,000	3950			
LBNS03-224 □4B-N	220,000	4055			
LBNS03-224 □4L-N	220,000	4600			
LBNS03-334 □4B-N	330,000	4100			
LBNS03-474 □4A-N	470,000	4050			
LBNS03-474 □4B-N	470,000	4100			
LBNS03-504 □4B	500,000	4100			
LBNS03-564 □4B-N	560,000	4100			

Remark : 1. Maximum Power Rating = Thermal Dissipation Constant × (125°C - 25°C)

※ please inquire to our sales for other specifications.

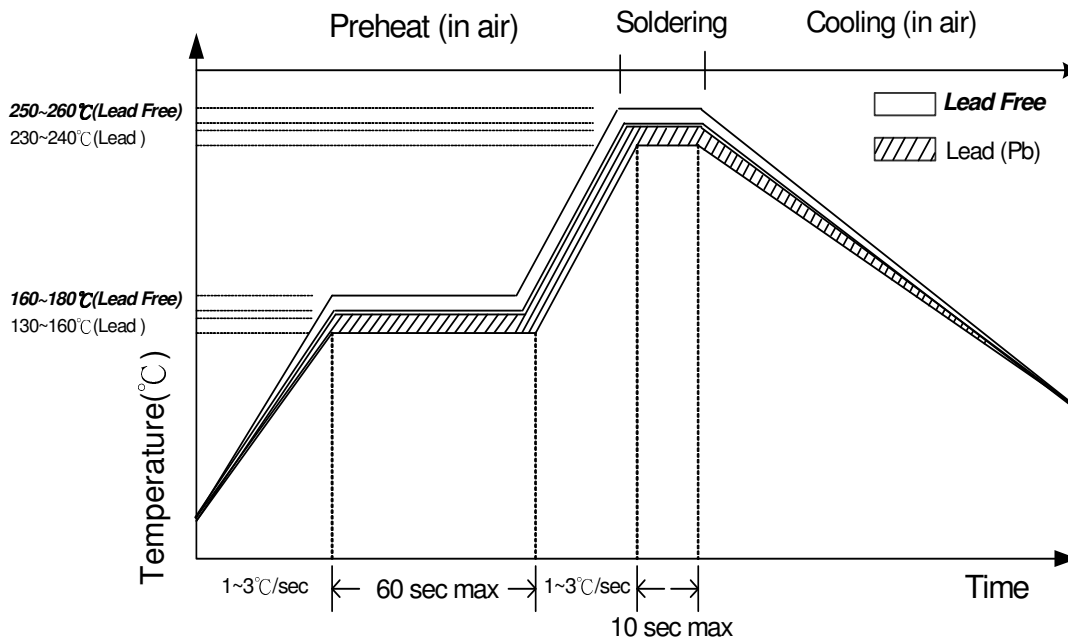
2012 (0805) SIZE

Part Number	Resistance (25°C) (Ω)	B-constant (25-85°C) (K)	Maximum Power Rating (25°C) (mW)	Thermal Dissipation Constant (mW/°C)	Operating Temp. Range (°C)
LBNS05-472 □3I-N	4,700	3435	400	4	-40 ~ 125
LBNS05-502 □3I-N	5,000	3435			
LBNS05-103 □3I-N	10,000	3435			
LBNS05-103 □3K-N	10,000	3550			
LBNS05-103 □3T-N	10,000	3970			
LBNS05-223 □3R-N	22,000	3900			
LBNS05-303 □3N-N	30,000	3700			
LBNS05-303 □3R	30,000	3900			
LBNS05-473 □4A-N	47,000	4000			
LBNS05-503 □4A-N	50,000	4000			
LBNS05-683 □4A	68,000	4000			
LBNS05-104 □4A-N	100,000	4000			
LBNS05-104 □4F-N	100,000	4300			
LBNS05-204 □3S	200,000	3950			
LBNS05-204 □4B-N	200,000	4100			
LBNS05-334 □4B	330,000	4100			

Remark : 1. Maximum Power Rating = Thermal Dissipation Constant × (125°C - 25°C)

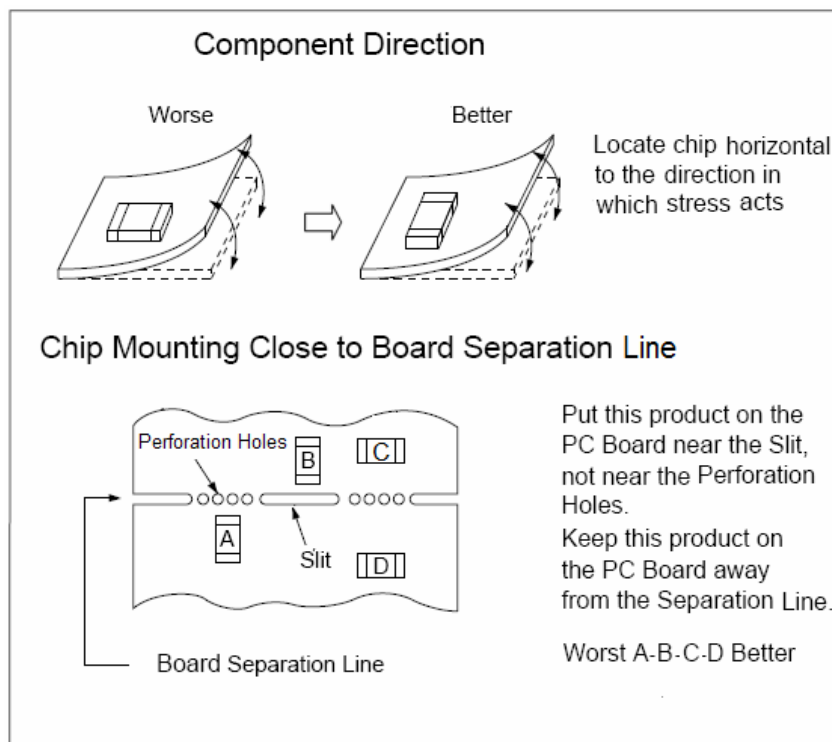
※ please inquire to our sales for other specifications.

REFLOW SOLDERING PROFILE

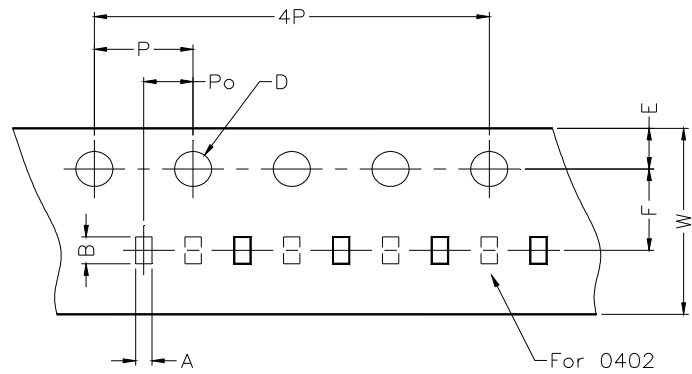


MOUNTING POSITION

Choose a mounting position that minimizes the stress imposed on the chip during flexing or bending of the board.



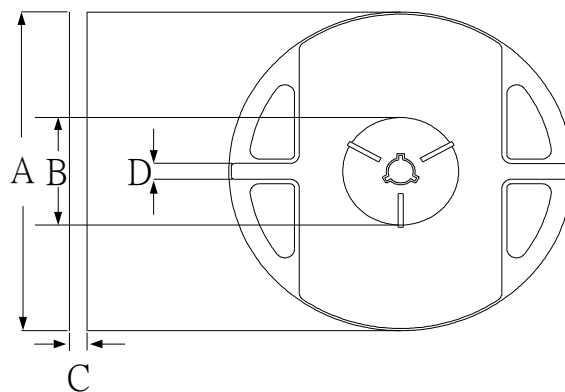
TAPE DIMENSIONS



Unit : mm

Dimension	1206	0805	0603	0402
A	2.00 ± 0.05	1.50 ± 0.05	1.08 ± 0.05	0.66 ± 0.03
B	3.57 ± 0.05	2.30 ± 0.05	1.85 ± 0.05	1.15 ± 0.03
W	8.00 ± 0.02	8.00 ± 0.05	8.00 ± 0.05	8.00 ± 0.05
D	1.55 ± 0.05	1.50 ± 0.10	1.50 ± 0.10	1.50 ± 0.10
E	1.75 ± 0.10	1.75 ± 0.05	1.75 ± 0.05	1.75 ± 0.05
F	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05
P	4.00 ± 0.10	4.00 ± 0.05	4.00 ± 0.05	4.00 ± 0.05
Po	2.00 ± 0.05	2.00 ± 0.05	2.00 ± 0.05	2.00 ± 0.05
4P	16.00 ± 0.05	16.00 ± 0.05	16.00 ± 0.05	16.00 ± 0.05

REEL DIMENSIONS



Unit : mm

ITEM	A	B	C	D
Dimension	178.0 ± 1.0	60.0 ± 1.0	9.0 ± 0.1	13.0 ± 0.1

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0402-220-5%-3150-N			0402-300-5%-3250-N			0402-470-5%-3250-N			0402-221-5%-3250-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	311	356	406	464	533	610	727	834	955	3403	3905	4470
-35	240	273	309	356	405	460	557	634	720	2608	2969	3370
-30	188	212	238	276	311	351	432	488	549	2021	2282	2571
-25	148	166	185	216	242	270	338	379	423	1582	1773	1982
-20	118	131	145	171	190	211	267	297	330	1250	1391	1544
-15	95	105	115	136	150	165	213	235	259	997	1101	1213
-10	77	84	92	109	120	131	171	188	206	801	879	962
-5	63	68	74	88	96	105	139	151	164	649	707	769
0	51	56	60	72	78	84	113	122	132	529	573	619
5	42	46	49	59	64	68	93	100	107	434	467	502
10	35	38	40	49	52	56	77	82	88	359	384	410
15	29	31	33	41	43	46	64	68	72	298	317	337
20	25	26	28	34	36	38	53	56	59	249	263	278
25	21	22	23	29	30	32	45	47	49	209	220	231
30	18	19	20	24	25	27	37	39	42	175	185	195
35	15	16	17	20	21	23	31	33	35	146	156	165
40	13	13	14	17	18	19	26	28	30	124	132	141
45	11	11	12	14	15	16	22	24	26	105	112	120
50	9	10	11	12	13	14	19	21	22	89	96	103
55	8	8	9	10	11	12	16	18	19	76	82	89
60	7	7	8	9	10	11	14	15	16	65	71	77
65	6	6	7	8	8	9	12	13	14	56	61	67
70	5	6	6	7	7	8	10	11	12	48	53	58
75	4	5	5	6	6	7	9	10	11	42	46	51
80	4	4	5	5	6	6	8	9	10	37	40	45
85	3	4	4	4	5	5	7	8	8	32	35	39
90	3	3	4	4	4	5	6	7	7	28	31	35
95	3	3	3	3	4	4	5	6	7	24	27	31
100	2	3	3	3	3	4	5	5	6	22	24	27
105	2	2	3	3	3	3	4	5	5	19	21	24
110	2	2	2	2	3	3	4	4	5	17	19	22
115	2	2	2	2	2	3	3	4	4	15	17	19
120	1	2	2	2	2	2	3	3	4	13	15	17
125	1	1	2	2	2	2	3	3	3	12	14	15

Temp. (°C)	0402-102-5%-4100-N			0402-472-5%-3500-N			0402-103-5%-3435-N			0402-103-5%-3900-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	33443	39301	46071	94852	109742	126652	163925	188442	216084	278944	325978	379991
-35	23797	27673	32100	70124	80378	91900	126572	144343	164197	201987	233701	269717
-30	17174	19771	22703	52653	59819	67791	98453	111407	125751	148231	169871	194184
-25	12556	14316	16281	40088	45162	50750	77132	86624	97041	110135	125059	141651
-20	9292	10496	11826	30906	34538	38501	60849	67838	75440	82773	93163	104595
-15	6954	7785	8694	24098	26724	29562	48327	53495	59068	62875	70168	78111
-10	5260	5838	6463	18983	20897	22947	38632	42469	46569	48237	53392	58951
-5	4017	4421	4854	15095	16499	17989	31077	33934	36961	37352	41018	44932
0	3097	3381	3682	12106	13142	14231	25152	27285	29525	29175	31795	34564
5	2408	2608	2819	9785	10553	11352	20476	22072	23733	22975	24854	26819
10	1887	2029	2176	7966	8537	9125	16765	17960	19192	18232	19582	20980
15	1491	1591	1694	6529	6953	7387	13801	14696	15610	14573	15544	16539
20	1186	1257	1329	5384	5700	6020	11421	12091	12768	11728	12426	13133
25	950	1000	1050	4465	4700	4935	9500	10000	10500	9500	10000	10500
30	756	801	847	3681	3897	4115	7853	8313	8777	7645	8098	8557
35	605	646	687	3051	3248	3448	6525	6944	7371	6190	6598	7015
40	488	524	560	2542	2720	2903	5447	5828	6219	5042	5406	5782
45	395	427	460	2127	2288	2455	4569	4913	5270	4129	4454	4791
50	322	350	379	1788	1933	2084	3850	4161	4485	3400	3688	3990
55	264	289	315	1509	1640	1777	3258	3538	3833	2814	3069	3339
60	218	239	262	1279	1396	1520	2769	3021	3288	2340	2566	2806
65	180	199	219	1088	1193	1305	2363	2590	2832	1955	2155	2369
70	150	166	184	929	1023	1125	2024	2229	2448	1641	1818	2009
75	125	140	156	795	880	972	1741	1925	2124	1383	1540	1710
80	105	118	132	683	760	843	1502	1669	1849	1170	1309	1461
85	89	100	112	589	658	733	1301	1451	1615	994	1118	1253
90	75	85	96	509	571	639	1131	1267	1415	848	958	1079
95	64	72	82	441	497	558	986	1109	1244	726	823	932
100	54	62	71	384	434	489	863	974	1096	623	710	807
105	46	53	61	334	380	430	757	858	969	537	615	702
110	40	46	53	292	333	379	666	758	860	464	534	612
115	34	40	46	256	293	334	588	671	764	403	465	535
120	30	35	40	225	258	296	520	596	681	350	406	469
125	26	30	35	198	228	262	462	531	609	306	356	413

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0402-223-5%-3830-N			0402-473-5%-3920-N			0402-473-5%-4050-N			0402-683-5%-4150-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	575924	671714	781478	1335035	1561020	1820694	1502108	1762791	2063541	2379598	2800408	3287395
-35	419593	484611	558305	965030	1117114	1289931	1073539	1246825	1444462	1685880	1962977	2279905
-30	309735	354388	404464	707018	810603	927040	777998	894626	1026164	1211574	1396372	1605333
-25	231431	262418	296811	524467	595778	675092	571121	650488	739031	882285	1006931	1146315
-20	174876	196581	220426	393560	443118	497670	424289	478829	539029	650413	735334	829265
-15	133529	148855	165524	298507	333235	371073	318725	356527	397815	484976	543342	607211
-10	102955	113852	125588	228684	253193	279629	241917	268311	296841	365485	405904	449666
-5	80106	87900	96211	176835	194237	212817	185403	203947	223784	278186	306354	336531
0	62861	68462	74375	137942	150356	163479	143386	156478	170339	213722	233451	254364
5	49724	53763	57985	108489	117378	126678	111839	121116	130835	165639	179509	194054
10	39629	42549	45569	85986	92365	98969	87934	94523	101351	129436	139208	149345
15	31808	33920	36082	68648	73229	77920	69663	74345	79144	101934	108823	115887
20	25702	27229	28773	55184	58470	61797	55584	58907	62273	80866	85716	90629
25	20900	22000	23100	44650	47000	49350	44650	47000	49350	64600	68000	71400
30	16886	17886	18897	35890	38021	40176	35626	37748	39897	51251	54313	57414
35	13726	14626	15547	29029	30942	32900	28609	30508	32451	40930	43661	46457
40	11221	12028	12860	23618	25327	27091	23116	24803	26548	32895	35314	37815
45	9224	9943	10692	19324	20844	22426	18786	20280	21838	26596	28729	30955
50	7622	8262	8934	15896	17243	18658	15353	16671	18058	21627	23503	25477
55	6329	6898	7500	13143	14336	15599	12614	13776	15007	17682	19329	21076
60	5281	5786	6324	10919	11975	13101	10416	11439	12531	14533	15977	17521
65	4426	4875	5355	9115	10049	11051	8643	9544	10512	12004	13271	14634
70	3726	4124	4554	7642	8469	9362	7205	7998	8856	9963	11074	12278
75	3150	3503	3887	6435	7167	7962	6033	6732	7493	8307	9282	10346
80	2673	2988	3331	5441	6090	6799	5074	5690	6365	6956	7813	8754
85	2278	2557	2864	4619	5194	5826	4284	4828	5428	5850	6604	7437
90	1948	2197	2472	3936	4447	5011	3632	4113	4646	4939	5604	6341
95	1672	1894	2140	3366	3820	4325	3090	3516	3991	4187	4773	5427
100	1439	1638	1859	2889	3293	3745	2639	3017	3440	3563	4080	4662
105	1244	1421	1620	2488	2848	3253	2262	2597	2975	3042	3500	4017
110	1078	1237	1416	2149	2471	2835	1945	2243	2581	2607	3013	3474
115	937	1080	1241	1863	2151	2477	1678	1944	2246	2241	2602	3013
120	817	945	1091	1619	1877	2171	1453	1689	1960	1933	2254	2621
125	714	830	961	1412	1643	1908	1261	1473	1716	1673	1959	2288

Temp. (°C)	0402-104-5%-4050-N			0402-104-5%-4300-N			0402-474-5%-4050-N			0603-220-5%-3150-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	2805013	3278549	3822447	4009418	4738344	5585791	15877428	18664843	21886757	311	356	406
-35	2053338	2376935	2744651	2818041	3294249	3841302	11226203	13056325	15146837	240	273	309
-30	1518479	1741457	1992183	2006631	2321215	2678404	8063111	9282084	10658626	188	212	238
-25	1133855	1288659	1460937	1446529	1656452	1892097	5875140	6697442	7615748	148	166	185
-20	854475	962676	1081867	1054957	1196318	1353229	4337854	4898816	5518490	118	131	145
-15	649594	725672	808634	777895	873858	979204	3242095	3628533	4050880	95	105	115
-10	497973	551740	609783	579609	645212	716445	2450602	2719060	3009385	77	84	92
-5	384790	422950	463731	436159	481274	529729	1871808	2059626	2260624	63	68	74
0	299597	326770	355515	331308	362483	395599	1443688	1575840	1715789	51	56	60
5	234965	254356	274660	253920	275536	298245	1123631	1217015	1314865	42	46	49
10	185558	199411	213762	196268	211286	226886	881973	948146	1016735	35	38	40
15	147516	157408	167543	152937	163374	174088	697808	744749	792860	29	31	33
20	118021	125069	132207	120094	127335	134674	556231	589499	623195	25	26	28
25	95000	100000	105000	95000	100000	105000	446500	470000	493500	21	22	23
30	75920	80439	85014	74621	79103	83644	356070	377289	398774	18	19	20
35	61034	65079	69220	59033	63007	67080	285845	304824	324250	15	16	17
40	49348	52946	56664	47019	50518	54142	230916	247783	265217	13	13	14
45	40119	43304	46626	37695	40762	43968	187655	202583	218151	11	11	12
50	32789	35601	38557	30409	33089	35916	153364	166539	180394	9	10	11
55	26935	29412	32038	24678	27017	29504	126013	137624	149929	8	8	9
60	22234	24415	26744	20142	22182	24367	104072	114296	125211	7	7	8
65	18440	20360	22424	16530	18309	20229	86371	95373	105049	6	6	7
70	15363	17053	18882	13637	15190	16877	72015	79943	88522	5	6	6
75	12856	14344	15965	11308	12664	14148	60314	67300	74908	4	5	5
80	10803	12115	13553	9422	10608	11914	50729	56891	63642	4	4	5
85	9115	10273	11549	7887	8927	10078	42842	48283	54279	3	4	4
90	7721	8744	9878	6632	7544	8560	36323	41133	46464	3	3	4
95	6565	7470	8479	5601	6403	7301	30912	35171	39916	3	3	3
100	5603	6405	7303	4750	5456	6251	26402	30178	34407	2	3	3
105	4799	5510	6311	4045	4668	5373	22629	25981	29756	2	2	3
110	4124	4756	5472	3457	4008	4635	19459	22441	25814	2	2	2
115	3556	4119	4759	2966	3454	4012	16788	19444	22463	2	2	2
120	3076	3578	4151	2554	2987	3485	14528	16897	19604	1	2	2
125	2669	3117	3632	2207	2592	3037	12611	14728	17157	1	1	2

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0603-300-5%-3150-N			0603-101-5%-3250-N			0603-221-5%-3250-N			0603-102-5%-2950-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	424	485	554	1547	1775	2032	3403	3905	4470	12590	14356	16328
-35	328	372	421	1186	1349	1532	2608	2969	3370	9880	11181	12622
-30	256	288	324	919	1037	1168	2021	2282	2571	7820	8786	9846
-25	202	226	252	719	806	901	1582	1773	1982	6239	6961	7748
-20	161	179	198	568	632	702	1250	1391	1544	5017	5560	6147
-15	129	143	157	453	501	552	997	1101	1213	4065	4475	4915
-10	105	115	125	364	400	437	801	879	962	3316	3629	3960
-5	85	93	101	295	321	350	649	707	769	2724	2963	3214
0	70	76	82	240	260	281	529	573	619	2252	2435	2626
5	58	62	67	197	212	228	434	467	502	1874	2014	2160
10	48	51	55	163	174	186	359	384	410	1568	1677	1788
15	40	43	45	135	144	153	298	317	337	1320	1404	1489
20	34	36	38	113	120	126	249	263	278	1117	1182	1247
25	29	30	32	95	100	105	209	220	231	950	1000	1050
30	24	25	27	79	84	89	175	185	195	804	851	898
35	20	21	23	67	71	75	146	156	165	684	727	771
40	17	18	19	56	60	64	124	132	141	585	625	665
45	15	16	17	48	51	55	105	112	120	503	539	576
50	12	13	14	40	44	47	89	96	103	434	467	502
55	11	12	13	35	37	41	76	82	89	376	406	438
60	9	10	11	30	32	35	65	71	77	327	355	384
65	8	9	9	26	28	30	56	61	67	285	311	338
70	7	8	8	22	24	27	48	53	58	250	274	299
75	6	7	7	19	21	23	42	46	51	220	242	265
80	5	6	6	17	18	20	37	40	45	194	214	236
85	5	5	6	14	16	18	32	35	39	172	191	210
90	4	5	5	13	14	16	28	31	35	153	170	188
95	4	4	4	11	12	14	24	27	31	137	152	169
100	3	4	4	10	11	12	22	24	27	122	136	152
105	3	3	4	9	10	11	19	21	24	109	123	137
110	2	3	3	8	9	10	17	19	22	98	111	124
115	2	2	3	7	8	9	15	17	19	89	100	113
120	2	2	3	6	7	8	13	15	17	80	91	102
125	2	2	2	5	6	7	12	14	15	73	83	93

Temp. (°C)	0603-102-5%-4150-N			0603-202-5%-4150-N			0603-222-5%-3150			0603-222-5%-4150-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	34994	41182	48344	69988	82365	96688	33208	38077	43551	76987	90601	106357
-35	24792	28867	33528	49585	57735	67056	25606	29125	33046	54543	63508	73762
-30	17817	20535	23608	35635	41070	47216	19928	22492	25322	39198	45177	51937
-25	12975	14808	16858	25950	29616	33715	15647	17528	19587	28545	32577	37087
-20	9565	10814	12195	19130	21627	24390	12389	13779	15287	21043	23790	26829
-15	7132	7990	8930	14264	15981	17859	9889	10922	12033	15690	17579	19645
-10	5375	5969	6613	10750	11938	13225	7954	8726	9549	11825	13132	14548
-5	4091	4505	4949	8182	9010	9898	6445	7025	7637	9000	9911	10888
0	3143	3433	3741	6286	6866	7481	5259	5696	6154	6915	7553	8229
5	2436	2640	2854	4872	5280	5707	4320	4650	4994	5359	5808	6278
10	1903	2047	2196	3807	4094	4392	3571	3821	4080	4188	4504	4832
15	1499	1600	1704	2998	3201	3408	2970	3160	3355	3298	3521	3749
20	1189	1261	1333	2378	2521	2666	2484	2629	2775	2616	2773	2932
25	950	1000	1050	1900	2000	2100	2090	2200	2310	2090	2200	2310
30	754	799	844	1507	1597	1689	1749	1851	1954	1658	1757	1858
35	602	642	683	1204	1284	1366	1472	1566	1661	1324	1413	1503
40	484	519	556	967	1039	1112	1245	1331	1419	1064	1143	1223
45	391	422	455	782	845	910	1059	1137	1217	860	929	1002
50	318	346	375	636	691	749	904	975	1049	700	760	824
55	260	284	310	520	568	620	776	841	909	572	625	682
60	214	235	258	427	470	515	669	728	790	470	517	567
65	177	195	215	353	390	430	579	633	689	388	429	473
70	147	163	181	293	326	361	503	552	604	322	358	397
75	122	137	152	244	273	304	439	483	531	269	300	335
80	102	115	129	205	230	257	384	425	469	225	253	283
85	86	97	109	172	194	219	338	375	415	189	214	241
90	73	82	93	145	165	187	298	332	369	160	181	205
95	62	70	80	123	140	160	263	294	328	135	154	176
100	52	60	69	105	120	137	234	262	293	115	132	151
105	45	51	59	89	103	118	208	234	263	98	113	130
110	38	44	51	77	89	102	186	210	236	84	97	112
115	33	38	44	66	77	89	166	188	213	73	84	97
120	28	33	39	57	66	77	149	170	192	63	73	85
125	25	29	34	49	58	67	134	153	174	54	63	74

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0603-332-5%-3150			0603-332-5%-3300-N			0603-472-5%-3340-N			0603-472-5%-4500-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Min.	Min.	Min.	Center	Max.	Min.	Center	Max.
-40	49281	56488	64587	53417	61383	70359	84286	97162	111724	225924	268499	318301
-35	38080	43303	49119	40762	46450	52799	64003	73154	83405	155241	182368	213700
-30	29689	33501	37709	31455	35558	40096	49065	55621	62896	108343	125867	145859
-25	23344	26147	29214	24526	27513	30786	37958	42690	47892	76708	88168	101088
-20	18507	20580	22829	19307	21498	23878	29624	33062	36808	55041	62618	71060
-15	14786	16330	17989	15333	16952	18696	23315	25829	28543	39989	45046	50617
-10	11903	13057	14288	12278	13482	14766	18497	20346	22323	29392	32796	36502
-5	9651	10518	11435	9908	10807	11759	14789	16155	17603	21840	24146	26629
0	7878	8533	9218	8053	8727	9435	11912	12925	13990	16395	17966	19638
5	6474	6969	7484	6589	7097	7625	9663	10417	11202	12425	13500	14631
10	5353	5729	6116	5425	5809	6203	7892	8455	9035	9503	10239	11005
15	4453	4739	5030	4494	4784	5079	6487	6908	7338	7329	7834	8353
20	3726	3943	4163	3744	3962	4183	5366	5681	5999	5699	6044	6395
25	3135	3300	3465	3135	3300	3465	4465	4700	4935	4465	4700	4935
30	2624	2777	2931	2611	2763	2916	3696	3912	4130	3472	3682	3895
35	2209	2349	2491	2185	2324	2466	3077	3274	3475	2720	2905	3095
40	1868	1997	2128	1837	1965	2095	2576	2755	2940	2146	2307	2475
45	1588	1705	1826	1552	1668	1787	2168	2331	2499	1704	1844	1992
50	1357	1463	1574	1317	1422	1531	1834	1981	2135	1361	1483	1612
55	1164	1261	1363	1122	1217	1317	1559	1692	1832	1094	1200	1313
60	1003	1092	1185	960	1046	1137	1332	1452	1580	885	976	1074
65	868	949	1034	824	902	985	1143	1252	1368	719	798	884
70	755	828	906	711	781	856	985	1084	1189	588	656	731
75	658	725	797	615	678	747	852	942	1038	483	542	607
80	576	637	703	533	591	654	741	822	909	398	450	507
85	506	562	622	464	517	574	646	720	799	330	375	425
90	447	497	553	405	453	505	566	632	705	275	314	357
95	395	442	493	355	398	446	497	558	624	230	264	302
100	351	393	440	312	351	394	438	494	555	193	223	256
105	312	351	395	275	310	350	388	438	494	163	189	218
110	279	315	355	243	275	311	344	390	442	138	161	186
115	250	283	320	215	245	278	306	349	396	117	137	160
120	224	255	289	191	218	248	273	312	356	100	117	138
125	202	230	262	170	195	222	245	280	321	85	101	119

Temp. (°C)	0603-502-5%-3340-N			0603-502-5%-3980-N			0603-682-5%-3435-N			0603-682-5%-4250-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	89666	103364	118856	149968	175649	205213	124410	143504	165114	260552	307490	361976
-35	68003	77724	88611	107838	125023	144583	94545	108134	123365	182989	213606	248723
-30	52089	59046	66764	78610	90250	103355	72501	82243	93060	130410	150643	173581
-25	40279	45297	50812	58033	66003	74881	56081	63113	70849	94206	107733	122895
-20	31429	35074	39044	43346	48857	54931	43742	48850	54419	68914	78051	88179
-15	24735	27400	30277	32731	36573	40764	34392	38124	42155	51005	57233	64060
-10	19628	21587	23684	24968	27666	30579	27249	29989	32922	38165	42442	47081
-5	15697	17145	18681	19228	21134	23171	21750	23770	25914	28850	31807	34979
0	12648	13723	14852	14939	16293	17724	17483	18978	20550	22018	24073	26254
5	10264	11064	11898	11705	12669	13679	14149	15259	16415	16956	18389	19894
10	8386	8984	9600	9243	9931	10645	11525	12351	13202	13169	14170	15210
15	6896	7343	7800	7353	7845	8349	9447	10061	10689	10309	11010	11729
20	5706	6041	6379	5890	6242	6597	7789	8247	8710	8132	8621	9116
25	4750	5000	5250	4750	5000	5250	6460	6800	7140	6460	6800	7140
30	3933	4163	4395	3805	4031	4260	5327	5639	5954	5096	5401	5711
35	3275	3485	3699	3067	3270	3478	4417	4702	4992	4047	4319	4597
40	2743	2934	3130	2488	2668	2855	3683	3941	4206	3236	3475	3723
45	2309	2482	2661	2029	2190	2357	3086	3319	3561	2602	2813	3033
50	1953	2110	2274	1664	1806	1955	2599	2810	3030	2106	2290	2484
55	1661	1803	1952	1372	1497	1630	2200	2389	2589	1713	1875	2046
60	1419	1547	1682	1137	1247	1365	1870	2041	2222	1401	1542	1693
65	1217	1333	1456	946	1044	1149	1597	1751	1915	1152	1275	1408
70	1049	1154	1266	791	877	971	1370	1508	1657	952	1060	1177
75	908	1002	1105	665	741	824	1179	1305	1439	790	885	987
80	788	874	967	560	628	702	1020	1133	1255	659	742	832
85	687	765	850	475	534	600	885	987	1098	552	624	704
90	602	673	750	403	456	515	771	863	964	464	528	598
95	528	593	664	344	391	443	674	757	849	392	448	510
100	466	524	589	295	336	383	591	667	751	332	381	437
105	412	465	525	253	290	332	520	589	665	283	326	375
110	365	414	468	218	251	289	459	522	592	241	280	323
115	325	370	420	189	218	252	406	463	527	207	241	279
120	290	331	377	164	190	220	361	413	472	178	208	242
125	259	297	339	143	166	193	321	369	423	153	180	211

RESISTANCE- TEMPERATURE TABLE

Temp. ($^{\circ}$ C)	0603-103-5%-3435-N			0603-103-5%-3550-N			0603-103-5%-3970-N			0603-103-5%-4050-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	163925	188442	216084	198434	229464	264683	287047	335745	391724	319598	375062	439051
-35	126572	144343	164197	149580	171465	196060	209068	242152	279769	228413	265282	307332
-30	98453	111407	125751	113840	129398	146715	153911	176586	202094	165532	190346	218333
-25	77132	86624	97041	87434	98576	110859	114470	130136	147577	121515	138402	157241
-20	60849	67838	75440	67741	75773	84545	85970	96875	108890	90274	101879	114687
-15	48327	53495	59068	52921	58745	65048	65171	72811	81143	67814	75857	84642
-10	38632	42469	46569	41672	45918	50470	49846	55230	61042	51472	57087	63158
-5	31077	33934	36961	33064	36173	39475	38451	42263	46337	39447	43393	47614
0	25152	27285	29525	26424	28709	31114	29903	32614	35481	30508	33293	36242
5	20476	22072	23733	21264	22948	24704	23438	25370	27393	23796	25769	27837
10	16765	17960	19192	17225	18469	19752	18508	19888	21317	18709	20111	21564
15	13801	14696	15610	14042	14961	15900	14719	15705	16715	14822	15818	16839
20	11421	12091	12768	11516	12195	12881	11786	12490	13202	11826	12533	13249
25	9500	10000	10500	9500	10000	10500	9500	10000	10500	9500	10000	10500
30	7853	8313	8777	7790	8247	8710	7606	8059	8516	7580	8032	8489
35	6525	6944	7371	6423	6839	7263	6129	6534	6949	6087	6491	6904
40	5447	5828	6219	5326	5701	6088	4969	5330	5703	4918	5277	5648
45	4569	4913	5270	4438	4777	5128	4052	4373	4707	3997	4315	4646
50	3850	4161	4485	3718	4022	4340	3323	3607	3905	3267	3547	3842
55	3258	3538	3833	3129	3402	3689	2740	2991	3256	2684	2931	3193
60	2769	3021	3288	2645	2890	3150	2272	2493	2729	2216	2434	2666
65	2363	2590	2832	2246	2466	2701	1892	2088	2298	1839	2031	2237
70	2024	2229	2448	1916	2113	2325	1584	1757	1943	1533	1702	1884
75	1741	1925	2124	1641	1818	2009	1332	1485	1651	1284	1432	1594
80	1502	1669	1849	1411	1570	1742	1125	1261	1408	1080	1211	1354
85	1301	1451	1615	1217	1361	1517	955	1075	1206	912	1027	1155
90	1131	1267	1415	1055	1183	1325	813	920	1037	773	875	988
95	986	1109	1244	917	1033	1161	696	790	895	658	748	849
100	863	974	1096	800	904	1021	597	681	776	562	642	732
105	757	858	969	700	795	900	515	590	674	481	553	633
110	666	758	860	614	700	796	445	512	588	414	477	549
115	588	671	764	541	619	706	386	446	515	357	414	478
120	520	596	681	478	548	628	336	390	452	309	359	417
125	462	531	609	423	488	560	294	342	398	268	313	365

Temp. ($^{\circ}$ C)	0603-223-5%-3900			0603-223-5%-4050-N			0603-333-5%-3900			0603-473-5%-3950-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	613676	717152	835981	703115	825136	965913	920514	1075728	1253971	1403565	1643693	1920090
-35	446667	516880	596634	502508	583620	676131	519939	596969	683697	1010385	1171279	1354399
-30	328895	377009	431081	364169	418761	480332	324609	367309	414588	737065	846141	968930
-25	244840	278107	315105	267333	304484	345929	219738	245661	273955	544363	619091	702318
-20	184163	207352	232877	198603	224133	252312	158716	175664	193936	406700	458379	515333
-15	139888	156168	173907	149190	166885	186211	120700	132462	145006	307141	343176	382480
-10	107250	118752	131158	113238	125592	138947	95570	104128	113170	234306	259614	286935
-5	82956	91125	99849	86784	95464	104750	78061	84521	91287	180445	198327	217435
0	64705	70533	76694	67117	73245	79733	65268	70280	75486	140210	152906	166335
5	50873	55044	59409	52350	56693	61242	55506	59469	63556	109865	118913	128385
10	40303	43294	46392	41161	44245	47441	47758	50931	54178	86773	93236	99931
15	32161	34308	36506	32608	34800	37046	41393	43948	46544	69050	73671	78405
20	25841	27380	28938	26018	27573	29149	36009	38068	40143	55339	58640	61982
25	20900	22000	23100	20900	22000	23100	31350	33000	34650	44650	47000	49350
30	16795	17792	18801	16676	17669	18675	27014	28559	30118	35793	37920	40073
35	13583	14478	15394	13391	14280	15190	23190	24626	26085	28878	30787	32739
40	11052	11852	12677	10820	11610	12427	19801	21124	22479	23443	25145	26902
45	9045	9757	10497	8794	9493	10222	16794	18003	19250	19143	20654	22228
50	7445	8076	8738	7186	7804	8453	14136	15229	16366	15719	17057	18463
55	6160	6719	7311	5904	6448	7025	11799	12778	13805	12977	14160	15413
60	5123	5619	6146	4876	5354	5866	9761	10629	11547	10768	11814	12929
65	4282	4721	5191	4046	4467	4920	8000	8763	9574	8978	9903	10895
70	3596	3985	4404	3373	3744	4146	6495	7157	7868	7521	8339	9222
75	3034	3378	3752	2824	3151	3507	5222	5792	6407	6329	7053	7839
80	2571	2876	3210	2375	2663	2979	4159	4643	5171	5349	5990	6690
85	2187	2459	2757	2005	2260	2541	3281	3688	4136	4539	5107	5732
90	1869	2110	2377	1700	1925	2175	2564	2903	3279	3868	4372	4929
95	1603	1818	2057	1447	1646	1868	1985	2265	2577	3308	3756	4255
100	1380	1572	1786	1235	1412	1610	1524	1751	2008	2840	3239	3685
105	1192	1364	1557	1059	1216	1392	1159	1343	1552	2446	2802	3202
110	1033	1187	1361	911	1050	1208	875	1022	1191	2114	2432	2791
115	899	1037	1194	786	910	1051	654	771	906	1834	2118	2441
120	785	909	1050	680	791	917	486	578	685	1595	1850	2141
125	687	799	926	590	689	803	358	430	514	1392	1621	1883

RESISTANCE- TEMPERATURE TABLE

Temp. ($^{\circ}$ C)	0603-473-5%-4050-N			0603-503-5%-4000-N			0603-683-5%-4150-N			0603-104-5%-3950-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	1502108	1762791	2063541	1614198	1894924	2218910	2379598	2800408	3287395	2918852	3415807	3987378
-35	1073539	1246825	1444462	1158075	1345586	1559549	1685880	1962977	2279905	2115135	2450718	2832445
-30	777998	894626	1026164	840831	967349	1110123	1211574	1396372	1605333	1550880	1779777	2037351
-25	571121	650488	739031	617491	703653	799833	882285	1006931	1146315	1149872	1307430	1482861
-20	424289	478829	539029	458429	517606	582961	650413	735334	829265	861569	970917	1091407
-15	318725	356527	397815	343885	384839	429594	484976	543342	607211	652015	728460	811834
-10	241917	268311	296841	260524	289058	319915	365485	405904	449666	498111	551897	609962
-5	185403	203947	223784	199240	219236	240635	278186	306354	336531	383960	422010	462670
0	143386	156478	170339	153749	167829	182739	213722	233451	254364	298500	325536	354132
5	111839	121116	130835	119668	129618	140044	165639	179509	194054	233947	253220	273396
10	87934	94523	101351	93908	100957	108263	129436	139208	149345	184772	198539	212800
15	69663	74345	79144	74273	79271	84393	101934	108823	115887	147008	156849	166930
20	55584	58907	62273	59185	62725	66311	80866	85716	90629	117783	124809	131924
25	44650	47000	49350	47500	50000	52500	64600	68000	71400	95000	100000	105000
30	35626	37748	39897	37881	40139	42424	51251	54313	57414	76125	80650	85231
35	28609	30508	32451	30421	32441	34508	40930	43661	46457	61396	65455	69607
40	23116	24803	26548	24593	26389	28245	32895	35314	37815	49824	53442	57179
45	18786	20280	21838	20009	21599	23257	26596	28729	30955	40673	43885	47232
50	15353	16671	18058	16379	17784	19261	21627	23503	25477	33392	36236	39225
55	12614	13776	15007	13486	14726	16040	17682	19329	21076	27563	30079	32742
60	10416	11439	12531	11166	12260	13428	14533	15977	17521	22871	25094	27464
65	8643	9544	10512	9296	10261	11298	12004	13271	14634	19072	21037	23147
70	7205	7998	8856	7778	8631	9553	9963	11074	12278	15981	17718	19596
75	6033	6732	7493	6541	7295	8115	8307	9282	10346	13453	14990	16662
80	5074	5690	6365	5527	6194	6924	6956	7813	8754	11374	12737	14226
85	4284	4828	5428	4691	5283	5934	5850	6604	7437	9658	10867	12196
90	3632	4113	4646	4000	4525	5106	4939	5604	6341	8235	9308	10495
95	3090	3516	3991	3425	3892	4412	4187	4773	5427	7049	8004	9065
100	2639	3017	3440	2944	3360	3826	3563	4080	4662	6057	6908	7859
105	2262	2597	2975	2541	2913	3331	3042	3500	4017	5223	5983	6836
110	1945	2243	2581	2201	2534	2910	2607	3013	3474	4520	5200	5966
115	1678	1944	2246	1914	2212	2550	2241	2602	3013	3925	4534	5224
120	1453	1689	1960	1670	1938	2243	1933	2254	2621	3420	3966	4588
125	1261	1473	1716	1462	1703	1979	1673	1959	2288	2989	3480	4041

Temp. ($^{\circ}$ C)	0603-104-5%-4050-N			0603-104-5%-4400-N			0603-154-5%-4000			0603-154-5%-4400-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	2805013	3278549	3822447	3938451	4651904	5480863	4581409	5368951	6276140	6585122	7804181	9225793
-35	2053338	2376935	2744651	2795243	3266778	3808312	3288611	3814606	4413668	4564606	5348651	6251700
-30	1518479	1741457	1992183	2005387	2319732	2676641	2393271	2748909	3149501	3212423	3723532	4305170
-25	1133855	1288659	1460937	1453728	1664952	1902099	1763953	2007047	2277932	2292790	2630006	3009276
-20	854475	962676	1081867	1064391	1207349	1366083	1315518	1483295	1668287	1657915	1882781	2132801
-15	649594	725672	808634	786836	884213	991158	991888	1108665	1236092	1213488	1364840	1531231
-10	497973	551740	609783	587041	653742	726203	755549	837423	925848	898324	1001013	1112652
-5	384790	422950	463731	441872	487775	537100	581041	638795	700533	672105	742245	817655
0	299597	326770	355515	335442	367146	400842	450852	491792	535107	507880	566043	607251
5	234965	254356	274660	256735	278686	301758	352782	381908	412405	387386	420585	455487
10	185558	199411	213762	198044	213258	229066	278233	299001	320516	298091	321025	344859
15	147516	157408	167543	153926	164463	175283	221078	235896	251078	231291	247139	263412
20	118021	125069	132207	120505	127784	135164	176903	187463	198157	180873	191802	202883
25	95000	100000	105000	95000	100000	105000	142500	150000	157500	142500	150000	157500
30	75920	80439	85014	74326	78799	83332	114023	120806	127673	111454	118162	124962
35	61034	65079	69220	58549	62505	66562	91819	97896	104116	87792	93726	99810
40	49348	52946	56664	46425	49898	53497	74386	79798	85389	69622	74831	80229
45	40119	43304	46626	37045	40079	43253	60611	65409	70411	55568	60119	64881
50	32789	35601	38557	29740	32383	35172	49658	53901	58361	44623	48587	52772
55	26935	29412	32038	24016	26313	28758	40898	44644	48612	36044	39491	43159
60	22234	24415	26744	19503	21499	23639	33852	37157	40683	29277	32272	35484
65	18440	20360	22424	15925	17658	19531	28154	31069	34200	23908	26510	29321
70	15363	17053	18882	13071	14577	16216	23522	26094	28875	19624	21884	24344
75	12856	14344	15965	10782	12093	13528	19739	22009	24479	16186	18152	20306
80	10803	12115	13553	8938	10079	11337	16634	18640	20836	13413	15125	17013
85	9115	10273	11549	7444	8439	9543	14074	15848	17802	11166	12658	14315
90	7721	8744	9878	6228	7097	8067	11955	13526	15265	9335	10638	12093
95	6565	7470	8479	5233	5993	6848	10192	11586	13136	7837	8977	10257
100	5603	6405	7303	4415	5082	5835	8721	9958	11343	6606	7605	8732
105	4799	5510	6311	3741	4327	4992	7488	8589	9826	5590	6466	7461
110	4124	4756	5472	3182	3697	4286	6451	7431	8539	4748	5518	6398
115	3556	4119	4759	2717	3171	3693	5575	6450	7443	4047	4726	5504
120	3076	3578	4151	2328	2730	3193	4834	5615	6506	3461	4060	4751
125	2669	3117	3632	2002	2358	2770	4203	4902	5704	2971	3500	4114

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0603-154-5%-4600-N			0603-204-5%-4055-N			0603-224-5%-3950			0603-224-5%-4055-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	7894893	9409061	11185599	6421004	7536390	8823414	6421476	7514777	8772234	6740463	7899910	9235649
-35	5377726	6333468	7440419	4587013	5328103	6173454	4653525	5391851	6231702	4833532	5606995	6487968
-30	3721801	4333636	5033436	3322835	3821386	4383751	3412212	3915836	4482557	3515907	4038573	4627340
-25	2613984	3010623	3458777	2438282	2777401	3155776	2529969	2876640	3262636	2591095	2948318	3346402
-20	1861207	2121222	2411516	1810713	2043654	2300795	1895654	2136252	2401367	1932595	2179181	2451087
-15	1342214	1514336	1704258	1359699	1521083	1697367	1434585	1602788	1786237	1457480	1629166	1816523
-10	979531	1094428	1219746	1031662	1144298	1266058	1095953	1214299	1342060	1110473	1230887	1360947
-5	722857	800092	883366	790387	869487	954112	844789	928507	1017971	854153	939120	1029957
0	539045	591251	646891	611062	666887	725993	656750	716235	779154	662826	723067	786812
5	405941	441368	478687	476467	516010	557438	514714	557119	601511	518614	561471	606351
10	308546	332638	357716	374511	402583	431678	406516	436807	468183	408920	439471	471123
15	236573	252959	269804	296607	316548	336985	323426	345077	367257	324770	346555	368878
20	182892	194010	205288	236592	250739	265068	259126	274584	290237	259698	275209	290917
25	142500	150000	157500	190000	200000	210000	209000	220000	231000	209000	220000	231000
30	110191	116862	123628	151555	160586	169729	167473	177429	187506	167026	176968	187034
35	85846	91707	97725	121672	129749	138017	135069	143997	153131	134296	143198	152307
40	67355	72465	77767	98283	105461	112881	109610	117568	125789	108606	116522	124704
45	53206	57637	62280	79855	86207	92832	89478	96544	103907	88313	95323	102632
50	42301	46130	50181	65245	70850	76745	73459	79716	86290	72187	78376	84882
55	33838	37142	40667	53591	58530	63764	60636	66170	72028	59300	64754	70532
60	27227	30076	33139	44243	48591	53233	50313	55204	60419	48945	53746	58871
65	22032	24487	27148	36704	40531	44645	41957	46280	50920	40582	44807	49348
70	17924	20041	22353	30591	33960	37607	35157	38979	43109	33795	37512	41534
75	14657	16485	18495	25610	28578	31811	29595	32978	36655	28260	31532	35096
80	12045	13625	15374	21532	24149	27017	25023	28020	31297	23726	26608	29767
85	9945	11313	12836	18178	20488	23035	21248	23907	26830	19996	22537	25338
90	8249	9435	10764	15407	17449	19712	18117	20479	23090	16914	19157	21643
95	6873	7902	9063	13108	14915	16929	15508	17609	19945	14359	16340	18549
100	5750	6646	7662	11193	12795	14589	13326	15198	17290	12231	13984	15949
105	4830	5611	6502	9591	11013	12615	11492	13163	15040	10453	12006	13755
110	4073	4755	5538	8246	9511	10942	9946	11441	13127	8961	10339	11999
115	3448	4045	4733	7113	8240	9520	8637	9976	11493	7707	8931	10323
120	2929	3453	4060	6156	7160	8308	7525	8727	10095	6647	7736	8981
125	2497	2957	3493	5343	6241	7271	6578	7658	8893	5750	6720	7835

Temp. (°C)	0603-224-5%-4600-N			0603-334-5%-4100-N			0603-474-5%-4050-N			0603-474-5%-4100-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	11579176	13799956	16405545	11665190	13732359	16125433	15877428	18664843	21886757	16793092	19775522	23229409
-35	7887332	9289086	10912614	8254383	9613740	11168967	11226203	13056325	15146837	11947938	13922524	16182882
-30	5458642	6355999	7382373	5923676	6828771	7852478	8063111	9282084	10658626	8601541	9921728	11415931
-25	3833844	4415580	5072873	4307248	4916669	5598285	5875140	6697442	7615748	6263049	7153776	8150754
-20	2729771	3111125	3536890	3170573	3585036	4043544	4337854	4898816	5518490	4610299	5216311	5887226
-15	1968581	2221026	2499579	2360840	2645218	2956441	3242095	3628533	4050880	3429391	3844827	4299812
-10	1436645	1605161	1788961	1776966	1973594	2186499	2450602	2719060	3009385	2576708	2863421	3174082
-5	1060190	1173469	1295604	1351121	1487966	1634574	1871808	2059626	2260624	1954765	2153793	2367154
0	790599	867168	948774	1037183	1132929	1234419	1443688	1575840	1715789	1496690	1635516	1782752
5	595381	647340	702074	803392	870650	941180	1123631	1217015	1314865	1156139	1253331	1355295
10	452534	487869	524650	627615	674984	724112	881973	948146	1016735	900677	968882	1039645
15	346974	371007	395713	494259	527650	561888	697808	744749	792860	707383	755286	804417
20	268242	284547	301090	392216	415730	439551	556231	589499	623195	559911	593521	627574
25	209000	220000	231000	313500	330000	346500	446500	470000	493500	446500	470000	493500
30	161613	171398	181321	248942	263810	278867	356070	377289	398774	353784	374937	396362
35	125907	134504	143330	199054	212321	225906	285845	304824	324250	282366	301221	320532
40	98788	106282	114058	160217	171980	184144	230916	247783	265217	226942	243641	260916
45	78036	84534	91344	129772	140156	150994	187655	202583	218151	183619	198351	213729
50	62041	67658	73599	105744	114889	124513	153364	166539	180394	149523	162488	176136
55	49629	54475	59645	86660	94702	103232	126013	137624	149929	122508	133906	145999
60	39934	44111	48604	71410	78478	86030	104072	114296	125211	100969	110986	121692
65	32313	35915	39818	59153	65365	72049	86371	95373	105049	83689	92496	101975
70	26288	29394	32785	49245	54709	60626	72015	79943	88522	69745	77495	85891
75	21497	24178	27126	41195	46004	51245	60314	67300	74908	58428	65257	72701
80	17666	19983	22548	34619	38857	43504	50729	56891	63642	49194	55219	61827
85	14587	16592	18826	29222	32962	37086	42842	48283	54279	41620	46945	52820
90	12099	13838	15787	24772	28076	31742	36323	41133	46464	35375	40091	45322
95	10080	11590	13293	21085	24010	27272	30912	35171	39916	30202	34386	39052
100	8433	9747	11237	18017	20610	23518	26402	30178	34407	25896	29616	33786
105	7084	8229	9536	15453	17757	20354	22629	25981	29756	22296	25610	29344
110	5974	6974	8122	13303	15353	17675	19459	22441	25814	19273	22232	25581
115	5057	5932	6942	11492	13320	15399	16788	19444	22463	16724	19371	22382
120	4296	5064	5954	9961	11593	13460	14528	16897	19604	14565	16939	19650
125	3663	4337	5124	8662	10123	11800	12611	14728	17157	12730	14863	17310

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0603-504-5%-4100			0603-564-5%-4100-N			0805-472-5%-3435-N			0805-502-5%-3435-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	17674530	20806605	24432474	19795474	23303397	27364371	90892	105021	121043	94608	109242	125823
-35	12506646	14566278	16922685	14007441	16314229	18953403	67988	77855	88930	71252	81555	93113
-30	8975273	10346630	11897702	10052303	11588222	13325422	51500	58469	66216	54254	61578	69715
-25	6526139	7449505	8482258	7309273	8343443	9500125	39465	44438	49913	41738	46989	52769
-20	4803902	5431877	6126588	5380368	6083700	6861775	30568	34149	38055	32421	36216	40354
-15	3577034	4007910	4479460	4006277	4488857	5016993	23913	26513	29321	25413	28174	31158
-10	2692374	2990296	3312881	3015458	3349130	3710425	18880	20780	22814	20090	22112	24277
-5	2047155	2254496	2476630	2292812	2525034	2773825	15035	16432	17914	16011	17500	19078
0	1571491	1716560	1870333	1760069	1922546	2094772	12070	13102	14187	12858	13958	15114
5	1217261	1319168	1426032	1363332	1477467	1597155	9762	10528	11325	10400	11216	12066
10	950932	1022703	1097140	1065044	1145427	1228797	7952	8521	9108	8470	9077	9702
15	748877	799469	851346	838742	895405	953507	6520	6944	7377	6943	7394	7856
20	594267	629894	665986	665579	705481	745905	5380	5696	6015	5726	6062	6402
25	475000	500000	525000	532000	560000	588000	4465	4700	4935	4750	5000	5250
30	377185	399712	422526	422447	447678	473229	3685	3901	4119	3918	4148	4380
35	301597	321698	342282	337788	360302	383356	3058	3255	3456	3250	3460	3673
40	242753	260575	279006	271884	291844	312487	2552	2730	2914	2711	2901	3096
45	196624	212358	228779	220218	237841	256232	2140	2301	2469	2273	2444	2622
50	160218	174074	188656	179444	194963	211295	1803	1949	2101	1915	2069	2231
55	131303	143488	156412	147059	160706	175181	1526	1658	1796	1620	1760	1907
60	108197	118906	130349	121181	133175	145991	1298	1416	1541	1378	1503	1637
65	89625	99038	109166	100380	110922	122265	1108	1215	1328	1176	1290	1410
70	74614	82892	91858	83568	92839	102880	950	1046	1149	1009	1111	1220
75	62416	69702	77644	69906	78067	86961	817	904	997	868	960	1059
80	52454	58874	65915	58748	65939	73825	706	784	868	750	833	923
85	44276	49942	56191	49590	55935	62934	612	682	759	651	726	807
90	37533	42540	48094	42037	47644	53865	532	596	665	566	634	708
95	31946	36378	41321	35780	40744	46280	464	522	585	494	556	623
100	27298	31228	35634	30574	34975	39910	406	458	516	433	489	550
105	23414	26905	30839	26224	30134	34539	356	404	456	381	431	487
110	20156	23262	26780	22575	26054	29994	314	357	405	336	382	433
115	17412	20181	23332	19502	22603	26132	277	316	360	297	338	385
120	15093	17566	20393	16904	19674	22840	245	281	321	263	301	344
125	13125	15338	17879	14699	17178	20024	217	250	286	234	269	308

Temp. (°C)	0805-103-5%-3435-N			0805-103-5%-3550-N			0805-103-5%-3970-N			0805-223-5%-3900-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	163925	188442	216084	198434	229464	264683	287047	335745	391724	613676	717152	835981
-35	126572	144343	164197	149580	171465	196060	209068	242152	279769	446667	516880	596634
-30	98453	111407	125751	113840	129398	146715	153911	176586	202094	328895	377009	431081
-25	77132	86624	97041	87434	98576	110859	114470	130136	147577	244840	278107	315105
-20	60849	67838	75440	67741	75773	84545	85970	96875	108890	184163	207352	232877
-15	48327	53495	59068	52921	58745	65048	65171	72811	81143	139888	156168	173907
-10	38632	42469	46569	41672	45918	50470	49846	55230	61042	107250	118752	131158
-5	31077	33934	36961	33064	36173	39475	38451	42263	46337	82956	91125	99849
0	25152	27285	29525	26424	28709	31114	29903	32614	35481	64705	70533	76694
5	20476	22072	23733	21264	22948	24704	23438	25370	27393	50873	55044	59409
10	16765	17960	19192	17225	18469	19752	18508	19888	21317	40303	43294	46392
15	13801	14696	15610	14042	14961	15900	14719	15705	16715	32161	34308	36506
20	11421	12091	12768	11516	12195	12881	11786	12490	13202	25841	27380	28938
25	9500	10000	10500	9500	10000	10500	9500	10000	10500	20900	22000	23100
30	7853	8313	8777	7790	8247	8710	7606	8059	8516	16795	17792	18801
35	6525	6944	7371	6423	6839	7263	6129	6534	6949	13583	14478	15394
40	5447	5828	6219	5326	5701	6088	4969	5330	5703	11052	11852	12677
45	4569	4913	5270	4438	4777	5128	4052	4373	4707	9045	9757	10497
50	3850	4161	4485	3718	4022	4340	3323	3607	3905	7445	8076	8738
55	3258	3538	3833	3129	3402	3689	2740	2991	3256	6160	6719	7311
60	2769	3021	3288	2645	2890	3150	2272	2493	2729	5123	5619	6146
65	2363	2590	2832	2246	2466	2701	1892	2088	2298	4282	4721	5191
70	2024	2229	2448	1916	2113	2325	1584	1757	1943	3596	3985	4404
75	1741	1925	2124	1641	1818	2009	1332	1485	1651	3034	3378	3752
80	1502	1669	1849	1411	1570	1742	1125	1261	1408	2571	2876	3210
85	1301	1451	1615	1217	1361	1517	955	1075	1206	2187	2459	2757
90	1131	1267	1415	1055	1183	1325	813	920	1037	1869	2110	2377
95	986	1109	1244	917	1033	1161	696	790	895	1603	1818	2057
100	863	974	1096	800	904	1021	597	681	776	1380	1572	1786
105	757	858	969	700	795	900	515	590	674	1192	1364	1557
110	666	758	860	614	700	796	445	512	588	1033	1187	1361
115	588	671	764	541	619	706	386	446	515	899	1037	1194
120	520	596	681	478	548	628	336	390	452	785	909	1050
125	462	531	609	423	488	560	294	342	398	687	799	926

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0805-303-5%-3700-N			0805-303-5%-3900			0805-473-5%-4000-N			0805-503-5%-4000-N		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	698000	811131	940241	884538	1035460	1209103	1451887	1702063	1990358	1614198	1894924	2218910
-35	514339	592084	679878	640162	741931	857729	1045263	1212983	1404095	1158075	1345586	1559549
-30	383832	437869	498265	468704	538003	616005	761838	875474	1003545	840831	967349	1110123
-25	289807	327747	369726	346985	394601	447630	561737	639472	726143	617491	703653	799833
-20	221196	248072	277518	259601	292588	328942	418748	472383	531557	458429	517606	582961
-15	170535	189723	210542	196187	219209	244321	315397	352689	393405	343885	384839	429594
-10	132713	146505	161326	149694	165867	183328	239886	265989	294195	260524	289058	319915
-5	104187	114157	124768	115271	126697	138907	184149	202524	222176	199240	219236	240635
0	82465	89705	97337	89543	97653	106231	142608	155603	169357	153749	167829	182739
5	65775	71051	76558	70140	75917	81965	111361	120583	130242	119668	129618	140044
10	52843	56696	60679	55382	59507	63780	87651	94209	101005	93908	100957	108263
15	42743	45560	48442	44063	47012	50032	69510	74177	78960	74273	79271	84393
20	34796	36855	38937	35314	37420	39553	55521	58838	62197	59185	62725	66311
25	28500	30000	31500	28500	30000	31500	44650	47000	49350	47500	50000	52500
30	23198	24566	25949	22859	24217	25592	35673	37797	39947	37881	40139	42424
35	18992	20229	21493	18458	19677	20924	28689	30591	32537	30421	32441	34508
40	15634	16748	17895	15002	16090	17213	23219	24911	26659	24593	26389	28245
45	12938	13936	14973	12269	13236	14243	18905	20405	21968	20009	21599	23257
50	10761	11653	12588	10093	10951	11851	15482	16807	18201	16379	17784	19261
55	8992	9789	10630	8351	9111	9914	12749	13919	15158	13486	14726	16040
60	7549	8260	9015	6947	7620	8337	10554	11586	12687	11166	12260	13428
65	6365	6999	7677	5810	6406	7045	8781	9692	10670	9296	10261	11298
70	5389	5955	6563	4883	5411	5982	7342	8145	9014	7778	8631	9553
75	4581	5086	5633	4124	4593	5102	6167	6877	7650	6541	7295	8115
80	3910	4360	4851	3499	3916	4370	5204	5832	6519	5527	6194	6924
85	3349	3752	4193	2983	3353	3760	4410	4966	5578	4691	5283	5934
90	2878	3239	3636	2553	2883	3247	3753	4246	4791	4000	4525	5106
95	2483	2806	3163	2194	2489	2816	3206	3644	4131	3425	3892	4412
100	2148	2438	2760	1893	2157	2451	2750	3139	3575	2944	3360	3826
105	1865	2125	2416	1640	1876	2141	2367	2714	3105	2541	2913	3331
110	1624	1858	2121	1426	1638	1876	2045	2355	2705	2201	2534	2910
115	1418	1629	1867	1244	1435	1650	1773	2050	2365	1914	2212	2550
120	1242	1432	1647	1089	1261	1456	1542	1790	2073	1670	1938	2243
125	1091	1262	1458	957	1112	1288	1345	1568	1824	1462	1703	1979

Temp. (°C)	0805-683-5%-4000			0805-104-5%-4000-N			0805-104-5%-4300-N			0805-204-5%-3950		
	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40	2076905	2433924	2845184	3050787	3575089	4179024	4009418	4738344	5585791	5837706	6831615	7974758
-35	1490837	1729288	2000863	2201142	2553517	2954896	2818041	3294249	3841302	4208743	4875723	5638423
-30	1084950	1246172	1427774	1607281	1846541	2116113	2006631	2321215	2678404	3075747	3528782	4038424
-25	796659	909861	1032663	1187000	1350973	1533752	1446529	1656452	1892097	2276099	2587148	2933353
-20	596368	672427	756290	886045	999364	1124358	1054957	1196318	1353229	1704031	1919639	2251721
-15	449656	502595	560362	668124	747022	833149	777895	873858	979204	1289600	1440303	1604597
-10	342516	379632	419718	508656	563946	623683	579609	645212	716445	985837	1091934	1206426
-5	263405	289587	317575	390788	429748	471411	436159	481274	529729	760750	835895	916168
0	204386	222945	242582	302837	330413	359599	331308	362483	395599	592252	645734	702286
5	159928	173132	186957	236615	256199	276709	253920	275536	298245	464906	503107	543086
10	126132	135547	145301	186324	200259	214699	196268	211286	226886	367794	395142	423462
15	100222	106939	113822	147816	157738	167905	152937	163374	174088	293111	312703	332770
20	80196	84983	89831	118101	125157	132303	120094	127335	134674	235217	249237	263433
25	64600	68000	71400	95000	100000	105000	95000	100000	105000	190000	200000	210000
30	51690	54765	57878	75914	80433	85008	74621	79103	83644	152465	161521	170688
35	41624	44380	47199	61061	65107	69248	59033	63007	67080	123113	131241	139556
40	33722	36175	38710	49422	53023	56744	47019	50518	54142	100006	107255	114743
45	27477	29652	31920	40242	43433	46760	37695	40762	43968	81697	88137	94847
50	22512	24435	26457	32956	35777	38742	30409	33089	35916	67101	72807	78800
55	18540	20239	22037	27137	29627	32265	24678	27017	29504	55398	60445	65787
60	15346	16844	18443	22464	24661	27004	20142	22182	24367	45962	50423	55178
65	12763	14085	15504	18690	20628	22709	16530	18309	20229	38313	42255	46486
70	10663	11829	13090	15625	17336	19185	13637	15190	16877	32081	35566	39330
75	8948	9978	11097	13124	14635	16279	11308	12664	14148	26980	30061	33411
80	7541	8450	9445	11073	12409	13871	9422	10608	11914	22784	25511	28493
85	6380	7185	8070	9383	10566	11868	7887	8927	10078	19317	21733	24391
90	5420	6132	6920	7984	9032	10193	6632	7544	8560	16440	18584	20955
95	4621	5252	5955	6820	7752	8788	5601	6403	7301	14044	15948	18065
100	3954	4514	5142	5849	6677	7604	4750	5456	6251	12039	13733	15626
105	3395	3893	4454	5034	5772	6602	4045	4668	5373	10356	11865	13560
110	2924	3369	3871	4348	5008	5752	3457	4008	4635	8937	10284	11803
115	2528	2924	3374	3769	4359	5027	2966	3454	4012	7738	8941	10305
120	2191	2545	2950	3278	3806	4408	2554	2987	3485	6719	7796	9023
125	1905	2222	2586	2860	3334	3876	2207	2592	3037	5853	6818	7922

RESISTANCE- TEMPERATURE TABLE

Temp. (°C)	0805-204-5%-4100-N			0805-334-5%-4100			Resistance (Ω)			Resistance (Ω)		
	Resistance (Ω)			Resistance (Ω)			Min.	Center	Max.	Min.	Center	Max.
	Min.	Center	Max.	Min.	Center	Max.						
-40	6688504	7860273	9214232	11665190	13732359	16125433						
-35	4759364	5534610	6420045	8254383	9613740	11168967						
-30	3434716	3954101	4540646	5923676	6828771	7852478						
-25	2511280	2863163	3256191	4307248	4916669	5598285						
-20	1858455	2099226	2365263	3170573	3585036	4043544						
-15	1390896	1557075	1738750	2360840	2645218	2956441						
-10	1051947	1167501	1292508	1776966	1973594	2186499						
-5	803440	884294	970852	1351121	1487966	1634574						
0	619305	676163	736396	1037183	1132929	1234419						
5	481509	521640	563704	803392	870650	941180						
10	377427	405815	435248	627615	674984	724112						
15	298117	318210	338808	494259	527650	561888						
20	237183	251385	265771	392216	415730	439551						
25	190000	200000	210000	313500	330000	346500						
30	151167	160186	169319	248942	263810	278867						
35	121060	129116	137363	199054	212321	225906						
40	97554	104701	112092	160217	171980	184144						
45	79078	85393	91981	129772	140156	150994						
50	64465	70028	75881	105744	114889	124513						
55	52835	57728	62917	86660	94702	103232						
60	43527	47827	52421	71410	78478	86030						
65	36035	39814	43878	59153	65365	72049						
70	29974	33295	36891	49245	54709	60626						
75	25045	27966	31149	41195	46004	51245						
80	21017	23588	26408	34619	38857	43504						
85	17711	19977	22476	29222	32962	37086						
90	14984	16984	19202	24772	28076	31742						
95	12726	14493	16465	21085	24010	27272						
100	10848	12412	14166	18017	20610	23518						
105	9281	10667	12230	15453	17757	20354						
110	7967	9198	10592	13303	15353	17675						
115	6862	7956	9203	11492	13320	15399						
120	5929	6904	8019	9961	11593	13460						
125	5138	6009	7009	8662	10123	11800						

Temp. (°C)	Resistance (Ω)			Resistance (Ω)			Resistance (Ω)			Resistance (Ω)		
	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.	Min.	Center	Max.
-40												
-35												
-30												
-25												
-20												
-15												
-10												
-5												
0												
5												
10												
15												
20												
25												
30												
35												
40												
45												
50												
55												
60												
65												
70												
75												
80												
85												
90												
95												
100												
105												
110												
115												
120												
125												