NTC thermistors for temperature measurement

Miniature sensors
with bendable wires

Series/Type: **B57863**
Date: March 2006

Applications

- Heating systems
- Industrial electronics
- Automotive electronics

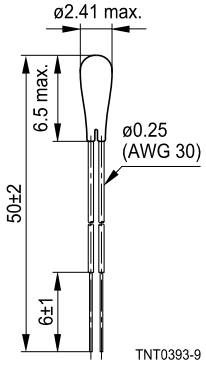
Features

- Uni curve sensor
- Fast response
- High temperature accuracy between 0 °C and 70 °C
- Excellent long-term stability
- Epoxy resin encapsulation
- PTFE-insulated leads of silver-plated nickel wire, AWG 30
- UL approval (E69802)

Delivery mode

Bulk

Dimensional drawing



Dimensions in mm
Approx. weight 60 mg

General technical data

Climatic category	(IEC 60068-1)		55/155/56	
Max. power	(at 25 °C)	P_{25}	60	mW
Temperature tolerance	(0 ... 70 °C)	ΔT	±0.2, ±0.5	K
Rated temperature		T_R	25	°C
Dissipation factor	(in air)	δ_{th}	approx. 1.5	mW/K
Thermal cooling time constant	(in air)	τ_c	approx. 15	s
Heat capacity		C_{th}	approx. 22.5	mJ/K

Electrical specification and ordering codes

R_{25} Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
3 k	8016	3988	B57863S0302+040
5 k	8016	3988	B57863S0502+040
10 k	8016	3988	B57863S0103+040
30 k	8018	3964	B57863S0303+040

+ = Temperature tolerance
F = ±0.2 K
G = ±0.5 K

Note

For calculation of the R/T characteristics refer to our special tool "NTC R/T calculation". You may download this tool from Internet (http://www.epcos.com → Design Tools → NTC Thermistors → NTC R/T Calculation).

Reliability data

Test	Standard	Test conditions	$\Delta R_{25}/R_{25}$ (typical)	Remarks
Storage in dry heat	IEC 60068-2-2	Storage at upper category temperature T: 155 °C t: 1000 h	< 2%	No visible damage
Storage in damp heat, steady state	IEC 60068-2-78	Temperature of air: 40 °C Relative humidity of air: 93% Duration: 56 days	< 1%	No visible damage
Rapid temperature cycling	IEC 60068-2-14	Lower test temperature: −55 °C Upper test temperature: 155 °C Number of cycles: 100	< 1%	No visible damage
Long-term stability (empirical value)		Temperature: 70 °C t: 10000 h	< 2%	No visible damage

R/T characteristics

	B57863S0302F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 3000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	288910	273940	303890	5.2	0.7	7.4
−50.0	201030	190980	211080	5.0	0.7	7.1
−45.0	141510	135650	147360	4.1	0.6	6.9
−40.0	100950	96918	104980	4.0	0.6	6.7
−35.0	72777	70436	75117	3.2	0.5	6.4
−30.0	53100	51450	54750	3.1	0.5	6.2
−25.0	39111	37936	40286	3.0	0.5	6.0
−20.0	29121	28444	29798	2.3	0.4	5.8
−15.0	21879	21386	22371	2.3	0.4	5.6
−10.0	16599	16328	16870	1.6	0.3	5.4
−5.0	12695	12494	12895	1.6	0.3	5.3
0.0	9795	9695	9895	1.0	0.2	5.1
5.0	7616	7541	7692	1.0	0.2	5.0
10.0	5970	5913	6027	1.0	0.2	4.8
15.0	4712	4668	4756	0.9	0.2	4.7
20.0	3747	3713	3781	0.9	0.2	4.5
25.0	**3000**	**2974**	**3026**	**0.9**	**0.2**	**4.4**
30.0	2417	2396	2438	0.9	0.2	4.3
35.0	1959	1943	1976	0.8	0.2	4.1
40.0	1598	1585	1611	0.8	0.2	4.0
45.0	1311	1300	1321	0.8	0.2	3.9
50.0	1081	1073	1089	0.8	0.2	3.8
55.0	895.9	889.2	902.5	0.7	0.2	3.7
60.0	746.4	741.0	751.8	0.7	0.2	3.6
65.0	624.9	620.5	629.3	0.7	0.2	3.5
70.0	525.6	522.0	529.2	0.7	0.2	3.4
75.0	444.4	440.0	448.8	1.0	0.3	3.3
80.0	377.4	373.7	381.1	1.0	0.3	3.2
85.0	321.7	317.6	325.8	1.3	0.4	3.2
90.0	275.3	271.9	278.7	1.2	0.4	3.1
95.0	236.6	233.0	240.1	1.5	0.5	3.0
100.0	204.0	201.0	207.0	1.5	0.5	2.9
105.0	176.6	173.6	179.6	1.7	0.6	2.9
110.0	153.4	150.8	155.9	1.7	0.6	2.8
115.0	133.6	131.1	136.2	1.9	0.7	2.7
120.0	116.8	114.6	119.0	1.9	0.7	2.7
125.0	102.5	100.4	104.6	2.1	0.8	2.6
130.0	90.27	88.44	92.10	2.0	0.8	2.5
135.0	79.63	77.86	81.41	2.2	0.9	2.5

	B57863S0302F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 3000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
140.0	70.44	68.91	71.97	2.2	0.9	2.4
145.0	62.50	61.02	63.97	2.4	1.0	2.4
150.0	55.59	54.30	56.88	2.3	1.0	2.3
155.0	49.60	48.37	50.84	2.5	1.1	2.3

	B57863S0302G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 3000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	288910	241860	335970	16.3	2.2	7.4
−50.0	201030	172310	229750	14.3	2.0	7.1
−45.0	141510	122970	160040	13.1	1.9	6.9
−40.0	100950	89525	112380	11.3	1.7	6.7
−35.0	72777	65288	80266	10.3	1.6	6.4
−30.0	53100	48479	57721	8.7	1.4	6.2
−25.0	39111	36055	42167	7.8	1.3	6.0
−20.0	29121	27259	30983	6.4	1.1	5.8
−15.0	21879	20648	23110	5.6	1.0	5.6
−10.0	16599	15876	17322	4.4	0.8	5.4
−5.0	12695	12226	13163	3.7	0.7	5.3
0.0	9795	9545	10045	2.6	0.5	5.1
5.0	7616	7428	7805	2.5	0.5	5.0
10.0	5970	5827	6113	2.4	0.5	4.8
15.0	4712	4603	4822	2.3	0.5	4.7
20.0	3747	3662	3832	2.3	0.5	4.5
25.0	**3000**	**2934**	**3066**	**2.2**	**0.5**	**4.4**
30.0	2417	2366	2469	2.1	0.5	4.3
35.0	1959	1919	2000	2.1	0.5	4.1
40.0	1598	1566	1630	2.0	0.5	4.0
45.0	1311	1285	1336	2.0	0.5	3.9
50.0	1081	1060	1101	1.9	0.5	3.8
55.0	895.9	879.3	912.4	1.9	0.5	3.7
60.0	746.4	733.0	759.8	1.8	0.5	3.6
65.0	624.9	614.0	635.9	1.8	0.5	3.5
70.0	525.6	516.6	534.6	1.7	0.5	3.4
75.0	444.4	434.1	454.7	2.3	0.7	3.3
80.0	377.4	367.6	387.2	2.6	0.8	3.2
85.0	321.7	312.6	330.8	2.8	0.9	3.2
90.0	275.3	266.8	283.8	3.1	1.0	3.1

	B57863S0302G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 3000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
95.0	236.6	228.0	245.1	3.6	1.2	3.0
100.0	204.0	196.2	211.8	3.8	1.3	2.9
105.0	176.6	169.5	183.6	4.0	1.4	2.9
110.0	153.4	147.0	159.8	4.2	1.5	2.8
115.0	133.6	127.4	139.8	4.6	1.7	2.7
120.0	116.8	111.2	122.4	4.8	1.8	2.7
125.0	102.5	97.46	107.6	4.9	1.9	2.6
130.0	90.27	85.70	94.84	5.1	2.0	2.5
135.0	79.63	75.30	83.97	5.4	2.2	2.5
140.0	70.44	66.52	74.36	5.6	2.3	2.4
145.0	62.50	58.95	66.04	5.7	2.4	2.4
150.0	55.59	52.38	58.80	5.8	2.5	2.3
155.0	49.60	46.58	52.63	6.1	2.7	2.3

	B57863S0502F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	481520	456570	506480	5.2	0.7	7.4
−50.0	335050	318300	351800	5.0	0.7	7.1
−45.0	235840	226090	245600	4.1	0.6	6.9
−40.0	168250	161530	174970	4.0	0.6	6.7
−35.0	121300	117390	125200	3.2	0.5	6.4
−30.0	88500	85749	91251	3.1	0.5	6.2
−25.0	65185	63226	67144	3.0	0.5	6.0
−20.0	48535	47406	49664	2.3	0.4	5.8
−15.0	36465	35644	37285	2.3	0.4	5.6
−10.0	27665	27213	28117	1.6	0.3	5.4
−5.0	21158	20823	21492	1.6	0.3	5.3
0.0	16325	16158	16492	1.0	0.2	5.1
5.0	12694	12568	12820	1.0	0.2	5.0
10.0	9950	9854	10046	1.0	0.2	4.8
15.0	7854	7781	7927	0.9	0.2	4.7
20.0	6245	6189	6301	0.9	0.2	4.5
25.0	**5000**	**4956**	**5044**	**0.9**	**0.2**	**4.4**
30.0	4029	3994	4063	0.9	0.2	4.3
35.0	3266	3239	3293	0.8	0.2	4.1
40.0	2664	2642	2685	0.8	0.2	4.0
45.0	2184	2167	2201	0.8	0.2	3.9

	B57863S0502F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
50.0	1802	1788	1815	0.8	0.2	3.8
55.0	1493	1482	1504	0.7	0.2	3.7
60.0	1244	1235	1253	0.7	0.2	3.6
65.0	1042	1034	1049	0.7	0.2	3.5
70.0	876.0	870.0	882.0	0.7	0.2	3.4
75.0	740.7	733.3	748.1	1.0	0.3	3.3
80.0	629.0	622.9	635.1	1.0	0.3	3.2
85.0	536.2	529.4	542.9	1.3	0.4	3.2
90.0	458.8	453.2	464.5	1.2	0.4	3.1
95.0	394.3	388.3	400.2	1.5	0.5	3.0
100.0	340.0	335.0	345.0	1.5	0.5	2.9
105.0	294.3	289.3	299.3	1.7	0.6	2.9
110.0	255.6	251.3	259.9	1.7	0.6	2.8
115.0	222.7	218.5	226.9	1.9	0.7	2.7
120.0	194.7	191.0	198.3	1.9	0.7	2.7
125.0	170.9	167.3	174.4	2.1	0.8	2.6
130.0	150.5	147.4	153.5	2.0	0.8	2.5
135.0	132.7	129.8	135.7	2.2	0.9	2.5
140.0	117.4	114.8	120.0	2.2	0.9	2.4
145.0	104.2	101.7	106.6	2.4	1.0	2.4
150.0	92.65	90.51	94.79	2.3	1.0	2.3
155.0	82.67	80.62	84.73	2.5	1.1	2.3

	B57863S0502G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	481520	403100	559950	16.3	2.2	7.4
−50.0	335050	287190	382910	14.3	2.0	7.1
−45.0	235840	204950	266740	13.1	1.9	6.9
−40.0	168250	149210	187290	11.3	1.7	6.7
−35.0	121300	108810	133780	10.3	1.6	6.4
−30.0	88500	80798	96202	8.7	1.4	6.2
−25.0	65185	60092	70278	7.8	1.3	6.0
−20.0	48535	45431	51639	6.4	1.1	5.8
−15.0	36465	34413	38516	5.6	1.0	5.6
−10.0	27665	26459	28871	4.4	0.8	5.4
−5.0	21158	20376	21939	3.7	0.7	5.3
0.0	16325	15908	16742	2.6	0.5	5.1

	B57863S0502G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
5.0	12694	12379	13008	2.5	0.5	5.0
10.0	9950	9711	10189	2.4	0.5	4.8
15.0	7854	7671	8037	2.3	0.5	4.7
20.0	6245	6104	6386	2.3	0.5	4.5
25.0	**5000**	**4890**	**5110**	**2.2**	**0.5**	**4.4**
30.0	4029	3943	4114	2.1	0.5	4.3
35.0	3266	3198	3333	2.1	0.5	4.1
40.0	2664	2610	2717	2.0	0.5	4.0
45.0	2184	2142	2227	2.0	0.5	3.9
50.0	1802	1767	1836	1.9	0.5	3.8
55.0	1493	1465	1521	1.9	0.5	3.7
60.0	1244	1222	1266	1.8	0.5	3.6
65.0	1042	1023	1060	1.8	0.5	3.5
70.0	876.0	861.1	890.9	1.7	0.5	3.4
75.0	740.7	723.5	757.9	2.3	0.7	3.3
80.0	629.0	612.7	645.3	2.6	0.8	3.2
85.0	536.2	520.9	551.4	2.8	0.9	3.2
90.0	458.8	444.7	473.0	3.1	1.0	3.1
95.0	394.3	380.1	408.4	3.6	1.2	3.0
100.0	340.0	327.1	352.9	3.8	1.3	2.9
105.0	294.3	282.5	306.1	4.0	1.4	2.9
110.0	255.6	244.9	266.3	4.2	1.5	2.8
115.0	222.7	212.4	233.0	4.6	1.7	2.7
120.0	194.7	185.3	204.0	4.8	1.8	2.7
125.0	170.9	162.4	179.3	4.9	1.9	2.6
130.0	150.5	142.8	158.1	5.1	2.0	2.5
135.0	132.7	125.5	139.9	5.4	2.2	2.5
140.0	117.4	110.9	123.9	5.6	2.3	2.4
145.0	104.2	98.25	110.1	5.7	2.4	2.4
150.0	92.65	87.30	98.00	5.8	2.5	2.3
155.0	82.67	77.63	87.72	6.1	2.7	2.3

	B57863S0103F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	963050	913140	1013000	5.2	0.7	7.4
−50.0	670100	636600	703600	5.0	0.7	7.1
−45.0	471690	452180	491200	4.1	0.6	6.9

	B57863S0103F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−40.0	336500	323060	349940	4.0	0.6	6.7
−35.0	242590	234790	250390	3.2	0.5	6.4
−30.0	177000	171500	182500	3.1	0.5	6.2
−25.0	130370	126450	134290	3.0	0.5	6.0
−20.0	97070	94813	99327	2.3	0.4	5.8
−15.0	72929	71288	74570	2.3	0.4	5.6
−10.0	55330	54426	56234	1.6	0.3	5.4
−5.0	42315	41645	42985	1.6	0.3	5.3
0.0	32650	32316	32984	1.0	0.2	5.1
5.0	25388	25136	25639	1.0	0.2	5.0
10.0	19900	19709	20091	1.0	0.2	4.8
15.0	15708	15561	15854	0.9	0.2	4.7
20.0	12490	12377	12603	0.9	0.2	4.5
25.0	**10000**	**9912**	**10088**	**0.9**	**0.2**	**4.4**
30.0	8057	7988	8126	0.9	0.2	4.3
35.0	6531	6477	6585	0.8	0.2	4.1
40.0	5327	5284	5370	0.8	0.2	4.0
45.0	4369	4335	4403	0.8	0.2	3.9
50.0	3603	3576	3630	0.8	0.2	3.8
55.0	2986	2964	3008	0.7	0.2	3.7
60.0	2488	2470	2506	0.7	0.2	3.6
65.0	2083	2068	2098	0.7	0.2	3.5
70.0	1752	1740	1764	0.7	0.2	3.4
75.0	1481	1467	1496	1.0	0.3	3.3
80.0	1258	1246	1270	1.0	0.3	3.2
85.0	1072	1059	1086	1.3	0.4	3.2
90.0	917.7	906.4	929.0	1.2	0.4	3.1
95.0	788.5	776.7	800.3	1.5	0.5	3.0
100.0	680.0	670.1	689.9	1.5	0.5	2.9
105.0	588.6	578.5	598.7	1.7	0.6	2.9
110.0	511.2	502.7	519.7	1.7	0.6	2.8
115.0	445.4	436.9	453.9	1.9	0.7	2.7
120.0	389.3	382.1	396.5	1.9	0.7	2.7
125.0	341.7	334.6	348.8	2.1	0.8	2.6
130.0	300.9	294.8	307.0	2.0	0.8	2.5
135.0	265.4	259.5	271.4	2.2	0.9	2.5
140.0	234.8	229.7	239.9	2.2	0.9	2.4
145.0	208.3	203.4	213.2	2.4	1.0	2.4
150.0	185.3	181.0	189.6	2.3	1.0	2.3
155.0	165.3	161.2	169.5	2.5	1.1	2.3

	B57863S0103G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	963050	806190	1119900	16.3	2.2	7.4
−50.0	670100	574370	765830	14.3	2.0	7.1
−45.0	471690	409900	533470	13.1	1.9	6.9
−40.0	336500	298420	374580	11.3	1.7	6.7
−35.0	242590	217630	267550	10.3	1.6	6.4
−30.0	177000	161600	192400	8.7	1.4	6.2
−25.0	130370	120180	140560	7.8	1.3	6.0
−20.0	97070	90862	103280	6.4	1.1	5.8
−15.0	72929	68826	77032	5.6	1.0	5.6
−10.0	55330	52919	57741	4.4	0.8	5.4
−5.0	42315	40752	43878	3.7	0.7	5.3
0.0	32650	31816	33484	2.6	0.5	5.1
5.0	25388	24759	26016	2.5	0.5	5.0
10.0	19900	19422	20378	2.4	0.5	4.8
15.0	15708	15342	16074	2.3	0.5	4.7
20.0	12490	12208	12772	2.3	0.5	4.5
25.0	**10000**	**9781**	**10219**	**2.2**	**0.5**	**4.4**
30.0	8057	7885	8229	2.1	0.5	4.3
35.0	6531	6396	6667	2.1	0.5	4.1
40.0	5327	5220	5434	2.0	0.5	4.0
45.0	4369	4283	4454	2.0	0.5	3.9
50.0	3603	3534	3672	1.9	0.5	3.8
55.0	2986	2931	3041	1.9	0.5	3.7
60.0	2488	2443	2533	1.8	0.5	3.6
65.0	2083	2047	2120	1.8	0.5	3.5
70.0	1752	1722	1782	1.7	0.5	3.4
75.0	1481	1447	1516	2.3	0.7	3.3
80.0	1258	1225	1291	2.6	0.8	3.2
85.0	1072	1042	1103	2.8	0.9	3.2
90.0	917.7	889.5	945.9	3.1	1.0	3.1
95.0	788.5	760.1	816.9	3.6	1.2	3.0
100.0	680.0	654.1	705.9	3.8	1.3	2.9
105.0	588.6	565.1	612.1	4.0	1.4	2.9
110.0	511.2	489.8	532.6	4.2	1.5	2.8
115.0	445.4	424.8	466.0	4.6	1.7	2.7
120.0	389.3	370.7	407.9	4.8	1.8	2.7
125.0	341.7	324.9	358.5	4.9	1.9	2.6
130.0	300.9	285.7	316.1	5.1	2.0	2.5
135.0	265.4	251.0	279.9	5.4	2.2	2.5

	B57863S0103G040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
140.0	234.8	221.7	247.9	5.6	2.3	2.4
145.0	208.3	196.5	220.1	5.7	2.4	2.4
150.0	185.3	174.6	196.0	5.8	2.5	2.3
155.0	165.3	155.3	175.4	6.1	2.7	2.3

	B57863S0303F040					
R/T No.	8018					
T (°C)	$B_{25/100}$ = 3964 K, R_{25} = 30000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	2472200	2350700	2593800	4.9	0.7	7.0
−50.0	1750300	1667100	1833500	4.8	0.7	6.8
−45.0	1253200	1203800	1302700	3.9	0.6	6.6
−40.0	907060	872440	941670	3.8	0.6	6.4
−35.0	663280	642850	683710	3.1	0.5	6.2
−30.0	489810	475190	504430	3.0	0.5	6.0
−25.0	365130	354570	375690	2.9	0.5	5.8
−20.0	274640	268480	280800	2.2	0.4	5.6
−15.0	208370	203840	212910	2.2	0.4	5.4
−10.0	159410	156880	161930	1.6	0.3	5.3
−5.0	122920	121030	124800	1.5	0.3	5.1
0.0	95501	94551	96451	1.0	0.2	5.0
5.0	74745	74023	75467	1.0	0.2	4.8
10.0	58911	58358	59464	0.9	0.2	4.7
15.0	46745	46318	47171	0.9	0.2	4.6
20.0	37332	37001	37663	0.9	0.2	4.4
25.0	**30000**	**29741**	**30259**	**0.9**	**0.2**	**4.3**
30.0	24253	24049	24456	0.8	0.2	4.2
35.0	19720	19559	19881	0.8	0.2	4.1
40.0	16123	15995	16251	0.8	0.2	4.0
45.0	13252	13150	13355	0.8	0.2	3.9
50.0	10949	10867	11032	0.8	0.2	3.8
55.0	9091	9024	9158	0.7	0.2	3.7
60.0	7584	7530	7638	0.7	0.2	3.6
65.0	6356	6312	6401	0.7	0.2	3.5
70.0	5351	5314	5387	0.7	0.2	3.4
75.0	4524	4479	4569	1.0	0.3	3.3
80.0	3840	3803	3877	1.0	0.3	3.2
85.0	3273	3232	3314	1.3	0.4	3.2
90.0	2800	2766	2835	1.2	0.4	3.1

	B57863S0303F040					
R/T No.	8018					
T (°C)	$B_{25/100}$ = 3964 K, R_{25} = 30000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 1%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
95.0	2405	2369	2441	1.5	0.5	3.0
100.0	2073	2042	2103	1.5	0.5	2.9
105.0	1792	1762	1823	1.7	0.6	2.9
110.0	1555	1529	1582	1.7	0.6	2.8
115.0	1354	1328	1380	1.9	0.7	2.7
120.0	1182	1160	1205	1.9	0.7	2.7
125.0	1036	1014	1057	2.1	0.8	2.6
130.0	910.0	891.3	928.6	2.0	0.8	2.6
135.0	801.7	783.6	819.8	2.3	0.9	2.5
140.0	708.3	692.7	723.9	2.2	0.9	2.5
145.0	627.4	612.4	642.5	2.4	1.0	2.4
150.0	557.2	544.2	570.3	2.3	1.0	2.3
155.0	496.1	483.6	508.7	2.5	1.1	2.3

	B57863S0303G040					
R/T No.	8018					
T (°C)	$B_{25/100}$ = 3964 K, R_{25} = 30000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	2472200	2090300	2854200	15.5	2.2	7.0
−50.0	1750300	1512500	1988100	13.6	2.0	6.8
−45.0	1253200	1096800	1409700	12.5	1.9	6.6
−40.0	907060	808970	1005100	10.8	1.7	6.4
−35.0	663280	597910	728650	9.9	1.6	6.2
−30.0	489810	448890	530740	8.4	1.4	6.0
−25.0	365130	337670	392580	7.5	1.3	5.8
−20.0	274640	257700	291590	6.2	1.1	5.6
−15.0	208370	197040	219710	5.4	1.0	5.4
−10.0	159410	152680	166130	4.2	0.8	5.3
−5.0	122920	118510	127320	3.6	0.7	5.1
0.0	95501	93126	97875	2.5	0.5	5.0
5.0	74745	72940	76550	2.4	0.5	4.8
10.0	58911	57528	60293	2.3	0.5	4.7
15.0	46745	45679	47811	2.3	0.5	4.6
20.0	37332	36504	38159	2.2	0.5	4.4
25.0	**30000**	**29353**	**30647**	**2.2**	**0.5**	**4.3**
30.0	24253	23744	24761	2.1	0.5	4.2
35.0	19720	19317	20122	2.0	0.5	4.1
40.0	16123	15802	16443	2.0	0.5	4.0
45.0	13252	12996	13509	1.9	0.5	3.9

	B57863S0303G040					
R/T No.	8018					
T (°C)	$B_{25/100}$ = 3964 K, R_{25} = 30000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± %					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
50.0	10949	10743	11155	1.9	0.5	3.8
55.0	9091	8924	9258	1.8	0.5	3.7
60.0	7584	7448	7720	1.8	0.5	3.6
65.0	6356	6245	6467	1.7	0.5	3.5
70.0	5351	5260	5442	1.7	0.5	3.4
75.0	4524	4419	4629	2.3	0.7	3.3
80.0	3840	3741	3940	2.6	0.8	3.2
85.0	3273	3180	3366	2.8	0.9	3.2
90.0	2800	2714	2887	3.1	1.0	3.1
95.0	2405	2318	2492	3.6	1.2	3.0
100.0	2073	1993	2152	3.8	1.3	2.9
105.0	1792	1720	1864	4.0	1.4	2.9
110.0	1555	1490	1621	4.2	1.5	2.8
115.0	1354	1291	1417	4.7	1.7	2.7
120.0	1182	1125	1239	4.8	1.8	2.7
125.0	1036	984.3	1087	5.0	1.9	2.6
130.0	910.0	863.4	956.6	5.1	2.0	2.6
135.0	801.7	757.5	845.9	5.5	2.2	2.5
140.0	708.3	668.4	748.2	5.6	2.3	2.5
145.0	627.4	591.3	663.5	5.8	2.4	2.4
150.0	557.2	524.5	589.9	5.9	2.5	2.3
155.0	496.1	465.4	526.9	6.2	2.7	2.3

Cautions and warnings

General

See "Important notes" at the end of this document.

Storage

- Store thermistors only in original packaging. Do not open the package before storage.
- Storage conditions in original packaging: storage temperature −25 °C ... +45 °C, relative humidity ≤75% annual mean, maximum 95%, dew precipitation is inadmissible.
- Do not store SMDs where they are exposed to heat or direct sunlight. Otherwise, the packing material may be deformed or SMDs may stick together, causing problems during mounting.
- Avoid contamination of thermistors surface during storage, handling and processing.
- Avoid storage of thermistor in harmful environments like corrosive gases (SOx, Cl etc).
- After opening the factory seals, such as polyvinyl-sealed packages, use the SMDs as soon as possible.
- Solder thermistors after shipment from EPCOS within the time specified:
  SMDs: 12 months
  Leaded components: 24 months

Handling

- NTC thermistors must not be dropped. Chip-offs must not be caused during handling of NTCs.
- Components must not be touched with bare hands. Gloves are recommended.
- Avoid contamination of thermistor surface during handling.

Soldering

- Use resin-type flux or non-activated flux.
- Insufficient preheating may cause ceramic cracks.
- Rapid cooling by dipping in solvent is not recommended.
- Complete removal of flux is recommended.

Mounting

- When NTC thermistors are encapsulated with sealing material or overmolded with plastic material, the precautions given in chapter “Mounting instructions”, “Sealing, potting and overmolding” must be observed.
- Electrode must not be scratched before/during/after the mounting process.
- Contacts and housings used for assembly with thermistor have to be clean before mounting.
- During operation, the thermistor’s surface temperature can be very high (ICL). Ensure that adjacent components are placed at a sufficient distance from the thermistor to allow for proper cooling ot the thermistors.
- Ensure that adjacent materials are designed for operation at temperatures comparable to the surface temperature of the thermistor. Be sure that surrounding parts and materials can withstand this temperature.
- Make sure that thermistors (ICLs) are adequately ventilated to avoid overheating.
- Avoid contamination of thermistor surface during processing.

Operation

- Use thermistors only within the specified operating temperature range.
- Use thermistors only within the specified voltage and current ranges (ICLs).
- Environmental conditions must not harm the thermistors. Use thermistors only in normal atmospheric conditions.
- Contact of NTC thermistors with any liquids and solvents should be prevented. It must be ensured that no water enters the NTC thermistor (e.g. through plug terminals). For measurement purposes (checking the specified resistance vs. temperature), the component must not be immersed in water but in suitable liquids (e.g. Galden).
- Avoid dewing and condensation.
- Be sure to provide an appropriate fail-safe function to prevent secondary product damage caused by malfunction (e.g. use VDR for limitation of overvoltage condition).

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of passive electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of a passive electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of a passive electronic component.
3. **The warnings, cautions and product-specific notes must be observed**.
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as "hazardous")**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, EPCOS-JONES, Baoke, CeraDiode, CSSP, MLSC, PhaseCap, PhaseMod, SIFI, SIKOREL, SilverCap, SIMID, SIOV, SIP5D, SIP5K, UltraCap, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.