NTC thermistors for temperature measurement

Miniature sensors
with bendable wires

Series/Type: **B57862**
Date: March 2006

Applications

- Heating and air conditioning systems
- Industrial electronics
- Automotive electronics

Features

- Improved resistance to humidity
- Fast response
- High measuring accuracy
- Different tolerances available
- Epoxy resin encapsulation
- Insulated leads of silver-plated nickel wire, AWG 30
- UL approval (E69802)

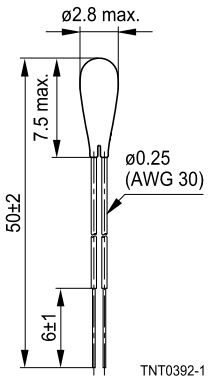
Options

Non-standard lead lengths

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
Resistance tolerance		$\Delta R_R/R_R$	±1, ±3, ±5	%
Rated temperature		T_R	25	°C
Dissipation factor	(in air)	δ_{th}	approx. 1.7	mW/K
Thermal cooling time constant	(in air)	τ_c	approx. 21	s
Heat capacity		C_{th}	approx. 36	mJ/K

Electrical specification and ordering codes

R_{25} Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
2.8 k	8016	3988 ±1%	B57862S0282+040
5 k	8016	3988 ±1%	B57862S0502+040
10 k	8016	3988 ±1%	B57862S0103+040

+ = Resistance tolerance
F = ±1%
H = ±3%
J = ±5%

Note

The type series S862 has a specially designed insulation (coating, wire coating) to withstand the immersion test in water of 1000 h, 25 °C. Therefore these sensors must be protected to avoid any damage of the insulation material during handling and in the application.

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
Immersion test		Test voltage 2.7 VDC on NTC over protective resistor, sensors immersed into water, ambient temperature (25 °C), voltage switched on 5 h switched off 1 h. t: 1000 h	< 2%	No visible damage
Long-term stability (empirical value)		Temperature: 70 °C t: 10000 h	< 2%	No visible damage

R/T characteristics

	B57862S0282F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 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	269650	253600	285710	6.0	0.8	7.4
−50.0	187630	177220	198030	5.5	0.8	7.1
−45.0	132070	125270	138880	5.2	0.7	6.9
−40.0	94220	89717	98723	4.8	0.7	6.7
−35.0	67925	64923	70927	4.4	0.7	6.4
−30.0	49560	47540	51580	4.1	0.7	6.2
−25.0	36504	35136	37871	3.7	0.6	6.0
−20.0	27180	26248	28111	3.4	0.6	5.8
−15.0	20420	19783	21058	3.1	0.6	5.6
−10.0	15492	15054	15931	2.8	0.5	5.4
−5.0	11848	11546	12150	2.5	0.5	5.3
0.0	9142	8934	9350	2.3	0.4	5.1
5.0	7109	6966	7252	2.0	0.4	5.0
10.0	5572	5474	5670	1.8	0.4	4.8
15.0	4398	4332	4465	1.5	0.3	4.7
20.0	3497	3453	3542	1.3	0.3	4.5
25.0	**2800**	**2772**	**2828**	**1.0**	**0.2**	**4.4**
30.0	2256	2227	2285	1.3	0.3	4.3
35.0	1829	1802	1856	1.5	0.4	4.1
40.0	1492	1466	1517	1.7	0.4	4.0
45.0	1223	1200	1246	1.9	0.5	3.9
50.0	1009	987.8	1030	2.1	0.5	3.8
55.0	836.1	817.1	855.1	2.3	0.6	3.7
60.0	696.6	679.5	713.7	2.5	0.7	3.6
65.0	583.3	567.9	598.6	2.6	0.8	3.5
70.0	490.6	476.8	504.3	2.8	0.8	3.4
75.0	414.8	402.5	427.1	3.0	0.9	3.3
80.0	352.2	341.2	363.3	3.1	1.0	3.2
85.0	300.3	290.4	310.1	3.3	1.0	3.2
90.0	257.0	248.1	265.8	3.4	1.1	3.1
95.0	220.8	212.9	228.7	3.6	1.2	3.0
100.0	190.4	183.3	197.5	3.7	1.3	2.9
105.0	164.8	158.4	171.2	3.9	1.4	2.9
110.0	143.1	137.4	148.9	4.0	1.4	2.8
115.0	124.7	119.5	129.9	4.2	1.5	2.7
120.0	109.0	104.3	113.7	4.3	1.6	2.7
125.0	95.68	91.46	99.89	4.4	1.7	2.6
130.0	84.25	80.43	88.07	4.5	1.8	2.5
135.0	74.32	70.86	77.78	4.7	1.9	2.5

	B57862S0282F040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 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	65.74	62.61	68.88	4.8	2.0	2.4
145.0	58.33	55.48	61.18	4.9	2.1	2.4
150.0	51.88	49.29	54.48	5.0	2.2	2.3
155.0	46.30	43.93	48.66	5.1	2.3	2.3

	B57862S0282H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	269650	248200	291110	8.0	1.1	7.4
−50.0	187630	173470	201790	7.5	1.1	7.1
−45.0	132070	122620	141520	7.2	1.0	6.9
−40.0	94220	87833	100610	6.8	1.0	6.7
−35.0	67925	63564	72286	6.4	1.0	6.4
−30.0	49560	46549	52571	6.1	1.0	6.2
−25.0	36504	34406	38601	5.7	1.0	6.0
−20.0	27180	25704	28655	5.4	0.9	5.8
−15.0	20420	19374	21466	5.1	0.9	5.6
−10.0	15492	14744	16241	4.8	0.9	5.4
−5.0	11848	11310	12387	4.5	0.9	5.3
0.0	9142	8751	9533	4.3	0.8	5.1
5.0	7109	6823	7394	4.0	0.8	5.0
10.0	5572	5363	5781	3.8	0.8	4.8
15.0	4398	4244	4553	3.5	0.8	4.7
20.0	3497	3383	3612	3.3	0.7	4.5
25.0	**2800**	**2716**	**2884**	**3.0**	**0.7**	**4.4**
30.0	2256	2182	2330	3.3	0.8	4.3
35.0	1829	1765	1892	3.5	0.8	4.1
40.0	1492	1437	1547	3.7	0.9	4.0
45.0	1223	1176	1271	3.9	1.0	3.9
50.0	1009	967.6	1050	4.1	1.1	3.8
55.0	836.1	800.4	871.9	4.3	1.2	3.7
60.0	696.6	665.6	727.7	4.5	1.2	3.6
65.0	583.3	556.2	610.3	4.6	1.3	3.5
70.0	490.6	467.0	514.1	4.8	1.4	3.4
75.0	414.8	394.2	435.4	5.0	1.5	3.3
80.0	352.2	334.2	370.3	5.1	1.6	3.2
85.0	300.3	284.4	316.1	5.3	1.7	3.2
90.0	257.0	243.0	270.9	5.4	1.8	3.1

	B57862S0282H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
95.0	220.8	208.4	233.1	5.6	1.9	3.0
100.0	190.4	179.5	201.3	5.7	2.0	2.9
105.0	164.8	155.1	174.5	5.9	2.1	2.9
110.0	143.1	134.5	151.7	6.0	2.2	2.8
115.0	124.7	117.0	132.4	6.2	2.3	2.7
120.0	109.0	102.2	115.9	6.3	2.4	2.7
125.0	95.68	89.54	101.8	6.4	2.5	2.6
130.0	84.25	78.75	89.76	6.5	2.6	2.5
135.0	74.32	69.38	79.27	6.7	2.7	2.5
140.0	65.74	61.29	70.20	6.8	2.8	2.4
145.0	58.33	54.31	62.35	6.9	2.9	2.4
150.0	51.88	48.25	55.52	7.0	3.0	2.3
155.0	46.30	43.00	49.59	7.1	3.1	2.3

	B57862S0282J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	269650	242810	296500	10.0	1.3	7.4
−50.0	187630	169720	205540	9.5	1.3	7.1
−45.0	132070	119980	144160	9.2	1.3	6.9
−40.0	94220	85948	102490	8.8	1.3	6.7
−35.0	67925	62206	73644	8.4	1.3	6.4
−30.0	49560	45558	53562	8.1	1.3	6.2
−25.0	36504	33676	39331	7.7	1.3	6.0
−20.0	27180	25161	29198	7.4	1.3	5.8
−15.0	20420	18966	21875	7.1	1.3	5.6
−10.0	15492	14434	16550	6.8	1.3	5.4
−5.0	11848	11073	12624	6.5	1.2	5.3
0.0	9142	8568	9716	6.3	1.2	5.1
5.0	7109	6681	7536	6.0	1.2	5.0
10.0	5572	5251	5893	5.8	1.2	4.8
15.0	4398	4156	4641	5.5	1.2	4.7
20.0	3497	3313	3682	5.3	1.2	4.5
25.0	**2800**	**2660**	**2940**	**5.0**	**1.1**	**4.4**
30.0	2256	2137	2375	5.3	1.2	4.3
35.0	1829	1728	1929	5.5	1.3	4.1
40.0	1492	1407	1576	5.7	1.4	4.0
45.0	1223	1151	1295	5.9	1.5	3.9

	B57862S0282J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 2800 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
50.0	1009	947.5	1070	6.1	1.6	3.8
55.0	836.1	783.7	888.6	6.3	1.7	3.7
60.0	696.6	651.7	741.6	6.5	1.8	3.6
65.0	583.3	544.6	621.9	6.6	1.9	3.5
70.0	490.6	457.2	523.9	6.8	2.0	3.4
75.0	414.8	385.9	443.7	7.0	2.1	3.3
80.0	352.2	327.1	377.4	7.1	2.2	3.2
85.0	300.3	278.4	322.1	7.3	2.3	3.2
90.0	257.0	237.8	276.1	7.4	2.4	3.1
95.0	220.8	204.0	237.5	7.6	2.5	3.0
100.0	190.4	175.7	205.1	7.7	2.6	2.9
105.0	164.8	151.8	177.8	7.9	2.8	2.9
110.0	143.1	131.7	154.6	8.0	2.9	2.8
115.0	124.7	114.5	134.9	8.2	3.0	2.7
120.0	109.0	99.98	118.0	8.3	3.1	2.7
125.0	95.68	87.63	103.7	8.4	3.2	2.6
130.0	84.25	77.06	91.44	8.5	3.4	2.5
135.0	74.32	67.89	80.76	8.7	3.5	2.5
140.0	65.74	59.98	71.51	8.8	3.6	2.4
145.0	58.33	53.15	63.51	8.9	3.8	2.4
150.0	51.88	47.21	56.55	9.0	3.9	2.3
155.0	46.30	42.08	50.52	9.1	4.0	2.3

	B57862S0502F040					
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	452850	510200	6.0	0.8	7.4
−50.0	335050	316470	353630	5.5	0.8	7.1
−45.0	235840	223690	248000	5.2	0.7	6.9
−40.0	168250	160210	176290	4.8	0.7	6.7
−35.0	121300	115930	126660	4.4	0.7	6.4
−30.0	88500	84893	92107	4.1	0.7	6.2
−25.0	65185	62744	67626	3.7	0.6	6.0
−20.0	48535	46871	50199	3.4	0.6	5.8
−15.0	36465	35326	37603	3.1	0.6	5.6
−10.0	27665	26882	28448	2.8	0.5	5.4
−5.0	21158	20619	21696	2.5	0.5	5.3
0.0	16325	15954	16696	2.3	0.4	5.1

	B57862S0502F040					
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)
5.0	12694	12438	12949	2.0	0.4	5.0
10.0	9950	9775	10125	1.8	0.4	4.8
15.0	7854	7735	7973	1.5	0.3	4.7
20.0	6245	6165	6325	1.3	0.3	4.5
25.0	**5000**	**4950**	**5050**	**1.0**	**0.2**	**4.4**
30.0	4029	3977	4080	1.3	0.3	4.3
35.0	3266	3217	3314	1.5	0.4	4.1
40.0	2664	2618	2709	1.7	0.4	4.0
45.0	2184	2143	2226	1.9	0.5	3.9
50.0	1802	1764	1839	2.1	0.5	3.8
55.0	1493	1459	1527	2.3	0.6	3.7
60.0	1244	1213	1275	2.5	0.7	3.6
65.0	1042	1014	1069	2.6	0.8	3.5
70.0	876.0	851.4	900.6	2.8	0.8	3.4
75.0	740.7	718.7	762.7	3.0	0.9	3.3
80.0	629.0	609.3	648.7	3.1	1.0	3.2
85.0	536.2	518.5	553.8	3.3	1.0	3.2
90.0	458.8	443.0	474.7	3.4	1.1	3.1
95.0	394.3	380.1	408.4	3.6	1.2	3.0
100.0	340.0	327.3	352.7	3.7	1.3	2.9
105.0	294.3	282.9	305.7	3.9	1.4	2.9
110.0	255.6	245.3	265.9	4.0	1.4	2.8
115.0	222.7	213.5	231.9	4.2	1.5	2.7
120.0	194.7	186.3	203.0	4.3	1.6	2.7
125.0	170.9	163.3	178.4	4.4	1.7	2.6
130.0	150.5	143.6	157.3	4.5	1.8	2.5
135.0	132.7	126.5	138.9	4.7	1.9	2.5
140.0	117.4	111.8	123.0	4.8	2.0	2.4
145.0	104.2	99.07	109.3	4.9	2.1	2.4
150.0	92.65	88.02	97.28	5.0	2.2	2.3
155.0	82.67	78.45	86.90	5.1	2.3	2.3

	B57862S0502H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	481520	443220	519830	8.0	1.1	7.4
−50.0	335050	309770	360330	7.5	1.1	7.1
−45.0	235840	218970	252720	7.2	1.0	6.9

	B57862S0502H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−40.0	168250	156840	179660	6.8	1.0	6.7
−35.0	121300	113510	129080	6.4	1.0	6.4
−30.0	88500	83123	93877	6.1	1.0	6.2
−25.0	65185	61440	68930	5.7	1.0	6.0
−20.0	48535	45901	51169	5.4	0.9	5.8
−15.0	36465	34597	38332	5.1	0.9	5.6
−10.0	27665	26329	29001	4.8	0.9	5.4
−5.0	21158	20196	22119	4.5	0.9	5.3
0.0	16325	15627	17023	4.3	0.8	5.1
5.0	12694	12185	13203	4.0	0.8	5.0
10.0	9950	9576	10324	3.8	0.8	4.8
15.0	7854	7578	8130	3.5	0.8	4.7
20.0	6245	6040	6450	3.3	0.7	4.5
25.0	**5000**	**4850**	**5150**	**3.0**	**0.7**	**4.4**
30.0	4029	3897	4160	3.3	0.8	4.3
35.0	3266	3152	3379	3.5	0.8	4.1
40.0	2664	2565	2762	3.7	0.9	4.0
45.0	2184	2099	2269	3.9	1.0	3.9
50.0	1802	1728	1875	4.1	1.1	3.8
55.0	1493	1429	1557	4.3	1.2	3.7
60.0	1244	1189	1299	4.5	1.2	3.6
65.0	1042	993.3	1090	4.6	1.3	3.5
70.0	876.0	833.9	918.1	4.8	1.4	3.4
75.0	740.7	703.9	777.5	5.0	1.5	3.3
80.0	629.0	596.7	661.3	5.1	1.6	3.2
85.0	536.2	507.8	564.5	5.3	1.7	3.2
90.0	458.8	433.9	483.8	5.4	1.8	3.1
95.0	394.3	372.2	416.3	5.6	1.9	3.0
100.0	340.0	320.5	359.5	5.7	2.0	2.9
105.0	294.3	277.0	311.6	5.9	2.1	2.9
110.0	255.6	240.2	271.0	6.0	2.2	2.8
115.0	222.7	209.0	236.4	6.2	2.3	2.7
120.0	194.7	182.4	206.9	6.3	2.4	2.7
125.0	170.9	159.9	181.8	6.4	2.5	2.6
130.0	150.5	140.6	160.3	6.5	2.6	2.5
135.0	132.7	123.9	141.6	6.7	2.7	2.5
140.0	117.4	109.4	125.4	6.8	2.8	2.4
145.0	104.2	96.99	111.3	6.9	2.9	2.4
150.0	92.65	86.16	99.14	7.0	3.0	2.3
155.0	82.67	76.79	88.55	7.1	3.1	2.3

	B57862S0502J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	481520	433590	529460	10.0	1.3	7.4
−50.0	335050	303070	367030	9.5	1.3	7.1
−45.0	235840	214260	257430	9.2	1.3	6.9
−40.0	168250	153480	183020	8.8	1.3	6.7
−35.0	121300	111080	131510	8.4	1.3	6.4
−30.0	88500	81353	95647	8.1	1.3	6.2
−25.0	65185	60136	70234	7.7	1.3	6.0
−20.0	48535	44930	52140	7.4	1.3	5.8
−15.0	36465	33867	39062	7.1	1.3	5.6
−10.0	27665	25776	29554	6.8	1.3	5.4
−5.0	21158	19772	22543	6.5	1.2	5.3
0.0	16325	15301	17349	6.3	1.2	5.1
5.0	12694	11931	13457	6.0	1.2	5.0
10.0	9950	9377	10523	5.8	1.2	4.8
15.0	7854	7421	8287	5.5	1.2	4.7
20.0	6245	5915	6575	5.3	1.2	4.5
25.0	**5000**	**4750**	**5250**	**5.0**	**1.1**	**4.4**
30.0	4029	3816	4241	5.3	1.2	4.3
35.0	3266	3087	3445	5.5	1.3	4.1
40.0	2664	2512	2815	5.7	1.4	4.0
45.0	2184	2056	2313	5.9	1.5	3.9
50.0	1802	1692	1911	6.1	1.6	3.8
55.0	1493	1399	1587	6.3	1.7	3.7
60.0	1244	1164	1324	6.5	1.8	3.6
65.0	1042	972.4	1111	6.6	1.9	3.5
70.0	876.0	816.4	935.6	6.8	2.0	3.4
75.0	740.7	689.1	792.3	7.0	2.1	3.3
80.0	629.0	584.1	673.9	7.1	2.2	3.2
85.0	536.2	497.1	575.3	7.3	2.3	3.2
90.0	458.8	424.7	493.0	7.4	2.4	3.1
95.0	394.3	364.3	424.2	7.6	2.5	3.0
100.0	340.0	313.7	366.3	7.7	2.6	2.9
105.0	294.3	271.1	317.5	7.9	2.8	2.9
110.0	255.6	235.1	276.1	8.0	2.9	2.8
115.0	222.7	204.6	240.9	8.2	3.0	2.7
120.0	194.7	178.5	210.8	8.3	3.1	2.7
125.0	170.9	156.5	185.2	8.4	3.2	2.6
130.0	150.5	137.6	163.3	8.5	3.4	2.5
135.0	132.7	121.2	144.2	8.7	3.5	2.5

	B57862S0502J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 5000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
140.0	117.4	107.1	127.7	8.8	3.6	2.4
145.0	104.2	94.90	113.4	8.9	3.8	2.4
150.0	92.65	84.31	101.0	9.0	3.9	2.3
155.0	82.67	75.14	90.21	9.1	4.0	2.3

	B57862S0103F040					
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	905700	1020400	6.0	0.8	7.4
−50.0	670100	632940	707260	5.5	0.8	7.1
−45.0	471690	447380	496000	5.2	0.7	6.9
−40.0	336500	320420	352580	4.8	0.7	6.7
−35.0	242590	231870	253310	4.4	0.7	6.4
−30.0	177000	169790	184210	4.1	0.7	6.2
−25.0	130370	125490	135250	3.7	0.6	6.0
−20.0	97070	93743	100400	3.4	0.6	5.8
−15.0	72929	70652	75206	3.1	0.6	5.6
−10.0	55330	53765	56895	2.8	0.5	5.4
−5.0	42315	41237	43393	2.5	0.5	5.3
0.0	32650	31907	33393	2.3	0.4	5.1
5.0	25388	24877	25898	2.0	0.4	5.0
10.0	19900	19550	20250	1.8	0.4	4.8
15.0	15708	15470	15946	1.5	0.3	4.7
20.0	12490	12330	12650	1.3	0.3	4.5
25.0	**10000**	**9900**	**10100**	**1.0**	**0.2**	**4.4**
30.0	8057	7955	8159	1.3	0.3	4.3
35.0	6531	6434	6628	1.5	0.4	4.1
40.0	5327	5237	5417	1.7	0.4	4.0
45.0	4369	4286	4451	1.9	0.5	3.9
50.0	3603	3528	3678	2.1	0.5	3.8
55.0	2986	2918	3054	2.3	0.6	3.7
60.0	2488	2427	2549	2.5	0.7	3.6
65.0	2083	2028	2138	2.6	0.8	3.5
70.0	1752	1703	1801	2.8	0.8	3.4
75.0	1481	1437	1525	3.0	0.9	3.3
80.0	1258	1219	1297	3.1	1.0	3.2
85.0	1072	1037	1108	3.3	1.0	3.2
90.0	917.7	886.1	949.3	3.4	1.1	3.1

	B57862S0103F040					
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)
95.0	788.5	760.2	816.9	3.6	1.2	3.0
100.0	680.0	654.6	705.4	3.7	1.3	2.9
105.0	588.6	565.8	611.4	3.9	1.4	2.9
110.0	511.2	490.7	531.7	4.0	1.4	2.8
115.0	445.4	426.9	463.9	4.2	1.5	2.7
120.0	389.3	372.6	406.0	4.3	1.6	2.7
125.0	341.7	326.6	356.8	4.4	1.7	2.6
130.0	300.9	287.3	314.5	4.5	1.8	2.5
135.0	265.4	253.1	277.8	4.7	1.9	2.5
140.0	234.8	223.6	246.0	4.8	2.0	2.4
145.0	208.3	198.1	218.5	4.9	2.1	2.4
150.0	185.3	176.0	194.6	5.0	2.2	2.3
155.0	165.3	156.9	173.8	5.1	2.3	2.3

	B57862S0103H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	963050	886440	1039700	8.0	1.1	7.4
−50.0	670100	619540	720660	7.5	1.1	7.1
−45.0	471690	437940	505430	7.2	1.0	6.9
−40.0	336500	313690	359310	6.8	1.0	6.7
−35.0	242590	227020	258160	6.4	1.0	6.4
−30.0	177000	166250	187750	6.1	1.0	6.2
−25.0	130370	122880	137860	5.7	1.0	6.0
−20.0	97070	91801	102340	5.4	0.9	5.8
−15.0	72929	69193	76665	5.1	0.9	5.6
−10.0	55330	52658	58002	4.8	0.9	5.4
−5.0	42315	40391	44239	4.5	0.9	5.3
0.0	32650	31254	34046	4.3	0.8	5.1
5.0	25388	24369	26406	4.0	0.8	5.0
10.0	19900	19152	20648	3.8	0.8	4.8
15.0	15708	15156	16260	3.5	0.8	4.7
20.0	12490	12081	12899	3.3	0.7	4.5
25.0	**10000**	**9700**	**10300**	**3.0**	**0.7**	**4.4**
30.0	8057	7793	8321	3.3	0.8	4.3
35.0	6531	6304	6759	3.5	0.8	4.1
40.0	5327	5130	5524	3.7	0.9	4.0
45.0	4369	4199	4539	3.9	1.0	3.9

	B57862S0103H040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 3%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
50.0	3603	3456	3750	4.1	1.1	3.8
55.0	2986	2859	3114	4.3	1.2	3.7
60.0	2488	2377	2599	4.5	1.2	3.6
65.0	2083	1987	2180	4.6	1.3	3.5
70.0	1752	1668	1836	4.8	1.4	3.4
75.0	1481	1408	1555	5.0	1.5	3.3
80.0	1258	1193	1323	5.1	1.6	3.2
85.0	1072	1016	1129	5.3	1.7	3.2
90.0	917.7	867.7	967.7	5.4	1.8	3.1
95.0	788.5	744.4	832.6	5.6	1.9	3.0
100.0	680.0	641.0	719.0	5.7	2.0	2.9
105.0	588.6	554.0	623.2	5.9	2.1	2.9
110.0	511.2	480.4	542.0	6.0	2.2	2.8
115.0	445.4	418.0	472.8	6.2	2.3	2.7
120.0	389.3	364.8	413.8	6.3	2.4	2.7
125.0	341.7	319.8	363.6	6.4	2.5	2.6
130.0	300.9	281.2	320.6	6.5	2.6	2.5
135.0	265.4	247.8	283.1	6.7	2.7	2.5
140.0	234.8	218.9	250.7	6.8	2.8	2.4
145.0	208.3	194.0	222.7	6.9	2.9	2.4
150.0	185.3	172.3	198.3	7.0	3.0	2.3
155.0	165.3	153.6	177.1	7.1	3.1	2.3

	B57862S0103J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
−55.0	963050	867180	1058900	10.0	1.3	7.4
−50.0	670100	606140	734070	9.5	1.3	7.1
−45.0	471690	428510	514870	9.2	1.3	6.9
−40.0	336500	306960	366040	8.8	1.3	6.7
−35.0	242590	222160	263020	8.4	1.3	6.4
−30.0	177000	162710	191290	8.1	1.3	6.2
−25.0	130370	120270	140470	7.7	1.3	6.0
−20.0	97070	89860	104280	7.4	1.3	5.8
−15.0	72929	67735	78124	7.1	1.3	5.6
−10.0	55330	51551	59108	6.8	1.3	5.4
−5.0	42315	39545	45085	6.5	1.2	5.3
0.0	32650	30601	34699	6.3	1.2	5.1

	B57862S0103J040					
R/T No.	8016					
T (°C)	$B_{25/100}$ = 3988 K, R_{25} = 10000 Ω, T_R = 25 °C, $\Delta R_R/R_R$ = ± 5%					
	R_{nom}[Ω]	R_{min}[Ω]	R_{max}[Ω]	$\Delta R_R/R_R$[±%]	ΔT[±°C]	α (%/K)
5.0	25388	23861	26914	6.0	1.2	5.0
10.0	19900	18754	21046	5.8	1.2	4.8
15.0	15708	14842	16574	5.5	1.2	4.7
20.0	12490	11831	13149	5.3	1.2	4.5
25.0	**10000**	**9500**	**10500**	**5.0**	**1.1**	**4.4**
30.0	8057	7632	8482	5.3	1.2	4.3
35.0	6531	6173	6889	5.5	1.3	4.1
40.0	5327	5024	5630	5.7	1.4	4.0
45.0	4369	4111	4626	5.9	1.5	3.9
50.0	3603	3384	3822	6.1	1.6	3.8
55.0	2986	2799	3174	6.3	1.7	3.7
60.0	2488	2327	2649	6.5	1.8	3.6
65.0	2083	1945	2221	6.6	1.9	3.5
70.0	1752	1633	1871	6.8	2.0	3.4
75.0	1481	1378	1585	7.0	2.1	3.3
80.0	1258	1168	1348	7.1	2.2	3.2
85.0	1072	994.2	1151	7.3	2.3	3.2
90.0	917.7	849.4	986.0	7.4	2.4	3.1
95.0	788.5	728.6	848.4	7.6	2.5	3.0
100.0	680.0	627.4	732.6	7.7	2.6	2.9
105.0	588.6	542.2	635.0	7.9	2.8	2.9
110.0	511.2	470.2	552.2	8.0	2.9	2.8
115.0	445.4	409.1	481.7	8.2	3.0	2.7
120.0	389.3	357.1	421.5	8.3	3.1	2.7
125.0	341.7	313.0	370.4	8.4	3.2	2.6
130.0	300.9	275.2	326.6	8.5	3.4	2.5
135.0	265.4	242.5	288.4	8.7	3.5	2.5
140.0	234.8	214.2	255.4	8.8	3.6	2.4
145.0	208.3	189.8	226.8	8.9	3.8	2.4
150.0	185.3	168.6	202.0	9.0	3.9	2.3
155.0	165.3	150.3	180.4	9.1	4.0	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)**.
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