



## **NTC thermistors for temperature measurement**

Leaded NTCs,  
lead spacing 2.5 mm

**Series/Type:**        **B57871**  
**Date:**                **March 2006**

**Applications**

- Temperature measurement

**Features**

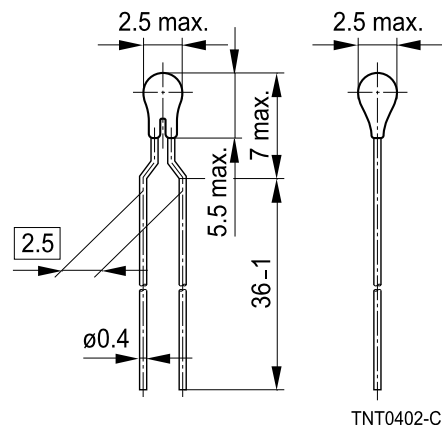
- High measuring accuracy
- Cost-effective
- Rugged design, epoxy resin encapsulation
- Tinned copper leads
- Lead spacing 2.5 mm

**Options**

Flexible coating of head and wires available on request

**Delivery mode**

Bulk (standard),  
cardboard tape, reeled or in Ammo pack

**Dimensional drawing**


Dimensions in mm  
Approx. weight 120 mg

**General technical data**

Climatic category	(IEC 60068-1)		55/155/56	
Max. power	(at 25 °C)	$P_{25}$	60	mW
Resistance tolerance		$\Delta R_R/R_R$	$\pm 1, \pm 3, \pm 5$	%
Rated temperature		$T_R$	25	°C
Dissipation factor	(in air)	$\delta_{th}$	approx. 3.8	mW/K
Thermal cooling time constant	(in air)	$\tau_c$	approx. 7.5	s
Heat capacity		$C_{th}$	approx. 28.5	mJ/K

**Electrical specification and ordering codes**

$R_{25}$ Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
2.1 k	1008	$3560 \pm 1\%$	B57871S0212+000
10 k	8016	$3988 \pm 1\%$	B57871S0103+001
10 k	2908	$3460 \pm 1\%$	B57871S0103+002
12 k	2901	$3760 \pm 1\%$	B57871S0123+000
30 k	8018	$3964 \pm 1\%$	B57871S0303+000

+ = Resistance tolerance  
F =  $\pm 1\%$   
H =  $\pm 3\%$   
J =  $\pm 5\%$

**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	< 2%	No visible damage
Endurance		$P_{\max}$ : 60 mW t: 1000 h	< 3%	No visible damage
Long-term stability (empirical value)		Temperature: 70 °C t: 10000 h	< 3%	No visible damage



R/T characteristics

<b>B57871S0212F000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 1%					
	R <sub>nom</sub> [Ω]	R <sub>min</sub> [Ω]	R <sub>max</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
-55.0	111520	105460	117570	5.4	0.9	6.1
-50.0	82567	78386	86747	5.1	0.8	6.0
-45.0	61583	58680	64486	4.7	0.8	5.8
-40.0	46263	44237	48289	4.4	0.8	5.7
-35.0	34999	33579	36420	4.1	0.7	5.5
-30.0	26661	25661	27661	3.8	0.7	5.4
-25.0	20423	19717	21128	3.5	0.7	5.2
-20.0	15786	15285	16287	3.2	0.6	5.1
-15.0	12254	11899	12609	2.9	0.6	4.9
-10.0	9594	9341	9847	2.6	0.5	4.8
-5.0	7570	7390	7751	2.4	0.5	4.7
0.0	6020	5891	6149	2.1	0.5	4.5
5.0	4811	4719	4902	1.9	0.4	4.4
10.0	3872	3807	3937	1.7	0.4	4.3
15.0	3133	3087	3179	1.5	0.4	4.1
20.0	2552	2520	2584	1.3	0.3	4.0
<b>25.0</b>	<b>2100</b>	<b>2079</b>	<b>2121</b>	<b>1.0</b>	<b>0.3</b>	<b>3.9</b>
30.0	1742	1721	1764	1.2	0.3	3.8
35.0	1441	1421	1462	1.4	0.4	3.7
40.0	1199	1180	1219	1.6	0.5	3.6
45.0	1008	990.2	1026	1.8	0.5	3.5
50.0	851.4	834.6	868.2	2.0	0.6	3.4
55.0	717.6	702.2	732.9	2.1	0.6	3.3
60.0	608.0	594.0	622.0	2.3	0.7	3.2
65.0	519.0	506.2	531.8	2.5	0.8	3.1
70.0	444.8	433.2	456.5	2.6	0.9	3.1
75.0	382.1	371.5	392.6	2.8	0.9	3.0
80.0	329.3	319.7	338.9	2.9	1.0	2.9
85.0	285.4	276.7	294.1	3.1	1.1	2.8
90.0	248.3	240.4	256.2	3.2	1.2	2.8
95.0	217.1	209.9	224.3	3.3	1.2	2.7
100.0	190.6	184.0	197.1	3.4	1.3	2.6
105.0	167.2	161.3	173.2	3.6	1.4	2.6
110.0	147.2	141.8	152.7	3.7	1.5	2.5
115.0	130.0	125.0	134.9	3.8	1.6	2.4
120.0	115.0	110.5	119.6	3.9	1.6	2.4
125.0	102.3	98.14	106.4	4.0	1.7	2.3
130.0	91.17	87.38	94.96	4.2	1.8	2.3
135.0	81.32	77.85	84.79	4.3	1.9	2.2



<b>B57871S0212F000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 1%					
	R <sub>nom</sub> [Ω]	R <sub>min</sub> [Ω]	R <sub>max</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
140.0	72.69	69.51	75.87	4.4	2.0	2.2
145.0	65.20	62.28	68.12	4.5	2.1	2.1
150.0	58.61	55.93	61.29	4.6	2.2	2.1
155.0	52.91	50.43	55.38	4.7	2.3	2.0

<b>B57871S0212H000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 3%					
	R <sub>nom</sub> [Ω]	R <sub>min</sub> [Ω]	R <sub>max</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
-55.0	111520	103230	119800	7.4	1.2	6.1
-50.0	82567	76735	88399	7.1	1.2	6.0
-45.0	61583	57449	65717	6.7	1.2	5.8
-40.0	46263	43312	49214	6.4	1.1	5.7
-35.0	34999	32879	37120	6.1	1.1	5.5
-30.0	26661	25128	28194	5.8	1.1	5.4
-25.0	20423	19308	21537	5.5	1.0	5.2
-20.0	15786	14969	16602	5.2	1.0	5.1
-15.0	12254	11654	12854	4.9	1.0	4.9
-10.0	9594	9149	10039	4.6	1.0	4.8
-5.0	7570	7238	7903	4.4	0.9	4.7
0.0	6020	5770	6269	4.1	0.9	4.5
5.0	4811	4622	4999	3.9	0.9	4.4
10.0	3872	3729	4014	3.7	0.9	4.3
15.0	3133	3025	3242	3.5	0.8	4.1
20.0	2552	2469	2635	3.3	0.8	4.0
<b>25.0</b>	<b>2100</b>	<b>2037</b>	<b>2163</b>	<b>3.0</b>	<b>0.8</b>	<b>3.9</b>
30.0	1742	1686	1799	3.2	0.9	3.8
35.0	1441	1392	1491	3.4	0.9	3.7
40.0	1199	1156	1243	3.6	1.0	3.6
45.0	1008	970.0	1047	3.8	1.1	3.5
50.0	851.4	817.6	885.3	4.0	1.2	3.4
55.0	717.6	687.9	747.3	4.1	1.2	3.3
60.0	608.0	581.8	634.2	4.3	1.3	3.2
65.0	519.0	495.8	542.2	4.5	1.4	3.1
70.0	444.8	424.3	465.4	4.6	1.5	3.1
75.0	382.1	363.9	400.3	4.8	1.6	3.0
80.0	329.3	313.1	345.5	4.9	1.7	2.9
85.0	285.4	271.0	299.8	5.1	1.8	2.8
90.0	248.3	235.4	261.1	5.2	1.9	2.8

<b>B57871S0212H000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 3%					
	R <sub>nomL</sub> [Ω]	R <sub>minL</sub> [Ω]	R <sub>maxL</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
95.0	217.1	205.6	228.7	5.3	2.0	2.7
100.0	190.6	180.2	200.9	5.4	2.1	2.6
105.0	167.2	157.9	176.6	5.6	2.2	2.6
110.0	147.2	138.8	155.6	5.7	2.3	2.5
115.0	130.0	122.4	137.5	5.8	2.4	2.4
120.0	115.0	108.2	121.9	5.9	2.5	2.4
125.0	102.3	96.10	108.5	6.0	2.6	2.3
130.0	91.17	85.56	96.79	6.2	2.7	2.3
135.0	81.32	76.22	86.41	6.3	2.8	2.2
140.0	72.69	68.06	77.33	6.4	2.9	2.2
145.0	65.20	60.98	69.42	6.5	3.0	2.1
150.0	58.61	54.76	62.47	6.6	3.2	2.1
155.0	52.91	49.37	56.44	6.7	3.3	2.0
<b>B57871S0212J000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 5%					
	R <sub>nomL</sub> [Ω]	R <sub>minL</sub> [Ω]	R <sub>maxL</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
-55.0	111520	101000	122030	9.4	1.5	6.1
-50.0	82567	75084	90050	9.1	1.5	6.0
-45.0	61583	56217	66949	8.7	1.5	5.8
-40.0	46263	42387	50139	8.4	1.5	5.7
-35.0	34999	32179	37820	8.1	1.5	5.5
-30.0	26661	24595	28728	7.8	1.4	5.4
-25.0	20423	18900	21945	7.5	1.4	5.2
-20.0	15786	14654	16918	7.2	1.4	5.1
-15.0	12254	11408	13100	6.9	1.4	4.9
-10.0	9594	8957	10231	6.6	1.4	4.8
-5.0	7570	7087	8054	6.4	1.4	4.7
0.0	6020	5650	6389	6.1	1.4	4.5
5.0	4811	4526	5095	5.9	1.3	4.4
10.0	3872	3652	4092	5.7	1.3	4.3
15.0	3133	2962	3304	5.5	1.3	4.1
20.0	2552	2418	2687	5.3	1.3	4.0
<b>25.0</b>	<b>2100</b>	<b>1995</b>	<b>2205</b>	<b>5.0</b>	<b>1.3</b>	<b>3.9</b>
30.0	1742	1651	1834	5.2	1.4	3.8
35.0	1441	1363	1520	5.4	1.5	3.7
40.0	1199	1132	1267	5.6	1.6	3.6
45.0	1008	949.8	1067	5.8	1.7	3.5

<b>B57871S0212J000</b>						
R/T No.	1008					
T (°C)	B <sub>25/100</sub> = 3560 K, R <sub>25</sub> = 2100 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 5%					
	R <sub>nom</sub> [Ω]	R <sub>min</sub> [Ω]	R <sub>max</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
50.0	851.4	800.6	902.3	6.0	1.8	3.4
55.0	717.6	673.5	761.6	6.1	1.9	3.3
60.0	608.0	569.7	646.3	6.3	2.0	3.2
65.0	519.0	485.5	552.5	6.5	2.1	3.1
70.0	444.8	415.4	474.3	6.6	2.2	3.1
75.0	382.1	356.2	407.9	6.8	2.3	3.0
80.0	329.3	306.5	352.0	6.9	2.4	2.9
85.0	285.4	265.3	305.5	7.1	2.5	2.8
90.0	248.3	230.4	266.1	7.2	2.6	2.8
95.0	217.1	201.2	233.0	7.3	2.7	2.7
100.0	190.6	176.4	204.8	7.4	2.8	2.6
105.0	167.2	154.6	179.9	7.6	3.0	2.6
110.0	147.2	135.9	158.5	7.7	3.1	2.5
115.0	130.0	119.8	140.1	7.8	3.2	2.4
120.0	115.0	105.9	124.2	7.9	3.3	2.4
125.0	102.3	94.05	110.5	8.0	3.4	2.3
130.0	91.17	83.73	98.61	8.2	3.6	2.3
135.0	81.32	74.59	88.04	8.3	3.7	2.2
140.0	72.69	66.61	78.78	8.4	3.8	2.2
145.0	65.20	59.67	70.73	8.5	4.0	2.1
150.0	58.61	53.58	63.64	8.6	4.1	2.1
155.0	52.91	48.32	57.50	8.7	4.3	2.0

<b>B57871S0103F001</b>						
R/T No.	8016					
T (°C)	B <sub>25/100</sub> = 3988 K, R <sub>25</sub> = 10000 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 1%					
	R <sub>nom</sub> [Ω]	R <sub>min</sub> [Ω]	R <sub>max</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	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

<b>B57871S0103F001</b>						
R/T No.	8016					
T (°C)	B <sub>25/100</sub> = 3988 K, R <sub>25</sub> = 10000 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 1%					
	R <sub>nomL</sub> [Ω]	R <sub>minL</sub> [Ω]	R <sub>maxL</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	ΔT[±°C]	α (%/K)
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
<b>25.0</b>	<b>10000</b>	<b>9900</b>	<b>10100</b>	<b>1.0</b>	<b>0.2</b>	<b>4.4</b>
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
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

<b>B57871S0103H001</b>						
R/T No.	8016					
T (°C)	B <sub>25/100</sub> = 3988 K, R <sub>25</sub> = 10000 Ω, T <sub>R</sub> = 25 °C, ΔR <sub>R</sub> /R <sub>R</sub> = ± 3%					
	R <sub>nomL</sub> [Ω]	R <sub>minL</sub> [Ω]	R <sub>maxL</sub> [Ω]	ΔR <sub>R</sub> /R <sub>R</sub> [±%]	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