



NTC thermistors for temperature measurement

Probe assemblies

Series/Type: B57045
Date: March 2006

Applications

- Temperature compensation (chassis mounting)
- Temperature measurement (chassis mounting)
- Temperature control (chassis mounting)

Features

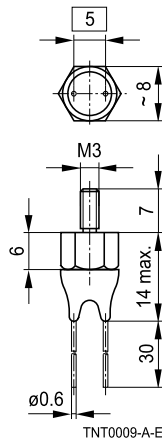
- Cost-effective
- Good thermal coupling through screw-type case (thread M3)
- Electrically isolated aluminum case
- Tinned copper leads

Options

Tighter resistance tolerance available on request

Delivery mode

Bulk

Dimensional drawing


Dimensions in mm
Approx. weight 1 g

General technical data

Climatic category	(IEC 60068-1)		55/125/56	
Max. power	(at 25 °C)	P_{25}	450	mW
Resistance tolerance		$\Delta R_R/R_R$	± 10	%
Rated temperature		T_R	25	°C
Dissipation factor	(in air)	δ_{th}	approx. 9	mW/K
Dissipation factor	(on chassis)	δ_{th}	approx. 20	mW/K
Thermal cooling time constant	(in air)	τ_c	approx. 75	s
Thermal cooling time constant	(on chassis)	τ_c	approx. 15	s
Torque			approx. 0.5	Nm
Insulation resistance	($V = 100$ VDC)	R_{ins}	> 100	M Ω
Test voltage	($t = 1$ s)	V_{test}	2500	VAC

Electrical specification and ordering codes

R_{25} Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
1 k	1011	$3730 \pm 3\%$	B57045K0102K000
2.2 k	1013	$3900 \pm 3\%$	B57045K0222K000
4.7 k	4001	$3950 \pm 3\%$	B57045K0472K000
6.8 k	2903	$4200 \pm 3\%$	B57045K0682K000

R_{25} Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
10 k	2904	4300 \pm 3%	B57045K0103K000
33 k	1012	4300 \pm 3%	B57045K0333K000
47 k	4003	4450 \pm 3%	B57045K0473K000
68 k	2005	4600 \pm 3%	B57045K0683K000
100 k	2005	4600 \pm 3%	B57045K0104K000
150 k	2005	4600 \pm 3%	B57045K0154K000

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: 125 °C t: 1000 h	< 3%	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	< 3%	No visible damage
Endurance		P_{max} : 450 mW t: 1000 h	< 3%	No visible damage
Long-term stability (empirical value)		Temperature: 100 °C t: 10000 h	< 5%	No visible damage

R/T characteristics

B57045K0102K000						
R/T No.	1011					
T (°C)	B _{25/100} = 3730 K, R ₂₅ = 1000 Ω, T _R = 20 °C, ΔR _R /R _R = ± 10%					
	R _{nomL} [Ω]	R _{minL} [Ω]	R _{maxL} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	70014	53341	86686	23.8	3.5	6.9
-50.0	49906	38595	61216	22.7	3.4	6.6
-45.0	36015	28248	43782	21.6	3.4	6.4
-40.0	26296	20901	31690	20.5	3.3	6.2
-35.0	19411	15625	23197	19.5	3.3	6.0
-30.0	14479	11794	17163	18.5	3.2	5.8
-25.0	10903	8983	12823	17.6	3.2	5.6
-20.0	8292	6906	9679	16.7	3.1	5.4
-15.0	6359	5350	7368	15.9	3.0	5.2
-10.0	4920	4180	5661	15.0	3.0	5.1
-5.0	3828	3282	4373	14.2	2.9	4.9
0.0	3003	2598	3408	13.5	2.8	4.8
5.0	2377	2074	2680	12.7	2.8	4.6
10.0	1896	1668	2124	12.0	2.7	4.5
15.0	1521	1348	1693	11.4	2.6	4.3
20.0	1228	1097	1359	10.7	2.5	4.2
25.0	1000.0	900.0	1100	10.0	2.4	4.1
30.0	817.8	730.5	905.0	10.7	2.7	4.0
35.0	673.4	597.5	749.3	11.3	2.9	3.9
40.0	557.5	491.4	623.5	11.8	3.2	3.8
45.0	463.6	406.0	521.1	12.4	3.4	3.7
50.0	387.4	337.2	437.6	13.0	3.6	3.6
55.0	323.7	280.0	367.3	13.5	3.9	3.5
60.0	272.0	233.9	310.1	14.0	4.2	3.4
65.0	230.4	197.0	263.8	14.5	4.4	3.3
70.0	196.0	166.7	225.4	15.0	4.7	3.2
75.0	167.4	141.5	193.2	15.4	5.0	3.1
80.0	143.4	120.6	166.2	15.9	5.2	3.0
85.0	123.5	103.3	143.6	16.3	5.5	3.0
90.0	106.7	88.80	124.6	16.8	5.8	2.9
95.0	92.73	76.80	108.7	17.2	6.1	2.8
100.0	80.90	66.67	95.14	17.6	6.4	2.8
105.0	70.62	57.91	83.32	18.0	6.7	2.7
110.0	61.83	50.46	73.19	18.4	7.0	2.6
115.0	54.28	44.10	64.46	18.8	7.3	2.6
120.0	47.79	38.66	56.93	19.1	7.6	2.5
125.0	42.25	34.02	50.48	19.5	7.9	2.4

B57045K0222K000						
R/T No.	1013					
T (°C)	B _{25/100} = 3900 K, R ₂₅ = 2200 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	170030	128470	211580	24.4	3.5	6.9
-50.0	120860	92776	148950	23.2	3.5	6.7
-45.0	86914	67715	106110	22.1	3.4	6.5
-40.0	63188	49925	76452	21.0	3.3	6.3
-35.0	46417	37163	55671	19.9	3.3	6.1
-30.0	34434	27917	40951	18.9	3.2	5.9
-25.0	25772	21144	30400	18.0	3.1	5.7
-20.0	19479	16163	22795	17.0	3.1	5.5
-15.0	14835	12442	17228	16.1	3.0	5.4
-10.0	11399	9659	13140	15.3	2.9	5.2
-5.0	8822	7548	10096	14.4	2.9	5.0
0.0	6882	5943	7821	13.6	2.8	4.9
5.0	5405	4709	6101	12.9	2.7	4.8
10.0	4276	3758	4795	12.1	2.6	4.6
15.0	3404	3016	3793	11.4	2.5	4.5
20.0	2729	2436	3021	10.7	2.5	4.4
25.0	2200	1980	2420	10.0	2.4	4.3
30.0	1784	1593	1975	10.7	2.6	4.1
35.0	1455	1290	1620	11.3	2.8	4.0
40.0	1194	1051	1336	11.9	3.0	3.9
45.0	984.0	860.8	1107	12.5	3.3	3.8
50.0	815.5	708.8	922.2	13.1	3.5	3.7
55.0	679.0	586.4	771.6	13.6	3.8	3.6
60.0	568.2	487.6	648.7	14.2	4.0	3.5
65.0	477.6	407.4	547.7	14.7	4.3	3.4
70.0	403.1	341.9	464.4	15.2	4.5	3.3
75.0	341.8	288.2	395.4	15.7	4.8	3.3
80.0	290.9	243.9	337.9	16.2	5.1	3.2
85.0	248.6	207.3	290.0	16.6	5.4	3.1
90.0	213.3	176.9	249.7	17.1	5.6	3.0
95.0	183.7	151.5	215.8	17.5	5.9	3.0
100.0	158.7	130.2	187.2	17.9	6.2	2.9
105.0	137.6	112.4	162.9	18.4	6.5	2.8
110.0	119.7	97.28	142.2	18.8	6.8	2.8
115.0	104.5	84.50	124.5	19.1	7.1	2.7
120.0	91.51	73.63	109.4	19.5	7.4	2.6
125.0	80.37	64.37	96.37	19.9	7.7	2.6

B57045K0472K000						
R/T No.	4001					
T (°C)	B _{25/100} = 3950 K, R ₂₅ = 4700 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	413850	311930	515760	24.6	3.4	7.3
-50.0	289760	221930	357580	23.4	3.3	7.0
-45.0	205520	159800	251230	22.2	3.3	6.8
-40.0	147560	116380	178740	21.1	3.2	6.5
-35.0	107170	85667	128670	20.1	3.2	6.3
-30.0	78687	63704	93669	19.0	3.1	6.1
-25.0	58126	47629	68622	18.1	3.1	5.9
-20.0	43406	35977	50835	17.1	3.0	5.7
-15.0	32937	27598	38276	16.2	2.9	5.5
-10.0	25217	21350	29085	15.3	2.9	5.3
-5.0	19392	16581	22203	14.5	2.8	5.2
0.0	15040	12981	17099	13.7	2.7	5.0
5.0	11743	10228	13259	12.9	2.7	4.9
10.0	9241	8118	10364	12.2	2.6	4.7
15.0	7330	6493	8168	11.4	2.5	4.6
20.0	5855	5227	6483	10.7	2.4	4.4
25.0	4700	4230	5170	10.0	2.3	4.3
30.0	3777	3372	4181	10.7	2.5	4.2
35.0	3071	2723	3420	11.3	2.8	4.1
40.0	2512	2212	2813	12.0	3.0	4.0
45.0	2066	1807	2326	12.5	3.2	3.9
50.0	1709	1485	1933	13.1	3.5	3.8
55.0	1419	1224	1613	13.7	3.7	3.7
60.0	1184	1015	1352	14.2	4.0	3.6
65.0	993.4	846.9	1140	14.8	4.2	3.5
70.0	837.5	709.7	965.3	15.3	4.5	3.4
75.0	709.2	597.4	821.0	15.8	4.8	3.3
80.0	603.2	505.2	701.1	16.2	5.0	3.2
85.0	514.5	428.6	600.5	16.7	5.3	3.1
90.0	440.6	365.0	516.2	17.2	5.6	3.1
95.0	379.6	312.8	446.4	17.6	5.9	3.0
100.0	328.3	269.0	387.5	18.0	6.2	2.9
105.0	284.1	231.7	336.6	18.5	6.5	2.9
110.0	246.7	200.2	293.3	18.9	6.8	2.8
115.0	215.0	173.6	256.4	19.3	7.1	2.7
120.0	187.9	150.9	224.8	19.7	7.4	2.7
125.0	164.4	131.5	197.4	20.0	7.7	2.6

B57045K0682K000						
R/T No.	2903					
T (°C)	B _{25/100} = 4200 K, R ₂₅ = 6800 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	816190	607670	1024700	25.5	3.3	7.6
-50.0	560180	424320	696050	24.3	3.3	7.4
-45.0	389280	299690	478880	23.0	3.2	7.2
-40.0	273740	213980	333500	21.8	3.1	7.0
-35.0	194670	154370	234960	20.7	3.1	6.7
-30.0	139930	112490	167370	19.6	3.0	6.5
-25.0	101150	82375	119930	18.6	2.9	6.3
-20.0	73987	60993	86980	17.6	2.9	6.1
-15.0	54950	45829	64070	16.6	2.8	5.9
-10.0	41216	34757	47675	15.7	2.7	5.7
-5.0	31042	26454	35629	14.8	2.7	5.6
0.0	23602	20317	26887	13.9	2.6	5.4
5.0	18105	15735	20475	13.1	2.5	5.2
10.0	14007	12286	15728	12.3	2.4	5.1
15.0	10927	9668	12185	11.5	2.3	4.9
20.0	8589	7664	9514	10.8	2.3	4.8
25.0	6800	6120	7480	10.0	2.2	4.6
30.0	5412	4831	5994	10.7	2.4	4.5
35.0	4338	3843	4834	11.4	2.6	4.4
40.0	3500	3077	3922	12.1	2.9	4.2
45.0	2848	2486	3210	12.7	3.1	4.1
50.0	2331	2020	2641	13.3	3.3	4.0
55.0	1909	1644	2175	13.9	3.6	3.9
60.0	1574	1346	1802	14.5	3.8	3.8
65.0	1306	1110	1503	15.0	4.1	3.7
70.0	1090	919.9	1260	15.6	4.3	3.6
75.0	912.6	765.5	1060	16.1	4.6	3.5
80.0	767.6	639.9	895.2	16.6	4.9	3.4
85.0	648.2	537.2	759.3	17.1	5.2	3.3
90.0	549.6	452.8	646.4	17.6	5.4	3.2
95.0	468.6	383.9	553.4	18.1	5.7	3.2
100.0	401.1	326.7	475.5	18.5	6.0	3.1
105.0	344.8	279.3	410.2	19.0	6.3	3.0
110.0	297.4	239.6	355.2	19.4	6.6	2.9
115.0	256.9	205.9	307.9	19.8	6.9	2.9
120.0	222.6	177.5	267.7	20.3	7.2	2.8
125.0	193.9	153.8	234.0	20.7	7.5	2.7

B57045K0103K000						
R/T No.	2904					
T (°C)	B _{25/100} = 4300 K, R ₂₅ = 10000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	1214600	899810	1529400	25.9	3.6	7.3
-50.0	844390	636740	1052000	24.6	3.4	7.1
-45.0	592430	454250	730620	23.3	3.3	7.0
-40.0	419380	326650	512120	22.1	3.2	6.9
-35.0	299480	236730	362220	21.0	3.1	6.7
-30.0	215670	172890	258460	19.8	3.0	6.5
-25.0	156410	127050	185760	18.8	3.0	6.3
-20.0	114660	94315	135000	17.7	2.9	6.2
-15.0	84510	70351	98669	16.8	2.8	6.0
-10.0	62927	52981	72872	15.8	2.7	5.8
-5.0	47077	40067	54087	14.9	2.6	5.6
0.0	35563	30581	40545	14.0	2.6	5.5
5.0	27119	23550	30688	13.2	2.5	5.3
10.0	20860	18285	23434	12.3	2.4	5.2
15.0	16204	14332	18076	11.6	2.3	5.0
20.0	12683	11315	14052	10.8	2.2	4.9
25.0	10000	9000	11000	10.0	2.1	4.7
30.0	7942	7087	8797	10.8	2.3	4.6
35.0	6327	5602	7051	11.5	2.6	4.5
40.0	5074	4459	5689	12.1	2.8	4.3
45.0	4103	3579	4627	12.8	3.0	4.2
50.0	3336	2889	3783	13.4	3.3	4.1
55.0	2724	2343	3106	14.0	3.5	4.0
60.0	2237	1910	2563	14.6	3.8	3.9
65.0	1846	1566	2126	15.2	4.0	3.8
70.0	1530	1290	1771	15.7	4.3	3.7
75.0	1275	1068	1483	16.3	4.5	3.6
80.0	1068	888.5	1247	16.8	4.8	3.5
85.0	899.3	743.7	1055	17.3	5.1	3.4
90.0	760.7	625.3	896.0	17.8	5.3	3.3
95.0	645.2	527.3	763.2	18.3	5.6	3.2
100.0	549.4	446.4	652.4	18.7	5.9	3.2
105.0	470.0	379.8	560.3	19.2	6.2	3.1
110.0	403.6	324.3	482.9	19.6	6.5	3.0
115.0	347.4	277.7	417.2	20.1	6.8	3.0
120.0	300.1	238.5	361.6	20.5	7.1	2.9
125.0	260.1	205.7	314.5	20.9	7.4	2.8

B57045K0333K000						
R/T No.	1012					
T (°C)	B _{25/100} = 4300 K, R ₂₅ = 33000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	2878800	2132700	3624900	25.9	3.8	6.8
-50.0	2054700	1549400	2560000	24.6	3.7	6.7
-45.0	1480200	1134900	1825400	23.3	3.6	6.5
-40.0	1075800	837890	1313600	22.1	3.5	6.3
-35.0	788470	623280	953660	21.0	3.4	6.2
-30.0	582580	467010	698140	19.8	3.3	6.0
-25.0	432230	351110	513350	18.8	3.2	5.8
-20.0	323590	266180	381000	17.7	3.1	5.7
-15.0	245080	204020	286140	16.8	3.0	5.5
-10.0	187040	157470	216600	15.8	2.9	5.4
-5.0	142600	121370	163840	14.9	2.8	5.3
0.0	109590	94234	124940	14.0	2.7	5.1
5.0	85279	74056	96503	13.2	2.6	5.0
10.0	66786	58543	75029	12.3	2.5	4.9
15.0	52330	46285	58375	11.6	2.4	4.8
20.0	41272	36819	45724	10.8	2.3	4.7
25.0	33000	29700	36300	10.0	2.2	4.6
30.0	26281	23452	29110	10.8	2.4	4.4
35.0	21138	18717	23559	11.5	2.6	4.3
40.0	17085	15014	19156	12.1	2.9	4.2
45.0	13846	12078	15614	12.8	3.1	4.1
50.0	11277	9766	12787	13.4	3.3	4.1
55.0	9199	7911	10488	14.0	3.5	4.0
60.0	7544	6443	8645	14.6	3.8	3.9
65.0	6228	5283	7172	15.2	4.0	3.8
70.0	5163	4351	5974	15.7	4.2	3.7
75.0	4294	3596	4992	16.3	4.5	3.6
80.0	3585	2983	4186	16.8	4.7	3.6
85.0	3007	2487	3527	17.3	5.0	3.5
90.0	2531	2081	2982	17.8	5.2	3.4
95.0	2141	1749	2532	18.3	5.5	3.3
100.0	1817	1476	2157	18.7	5.7	3.3
105.0	1544	1248	1841	19.2	6.0	3.2
110.0	1317	1058	1576	19.6	6.3	3.1
115.0	1130	903.4	1357	20.1	6.5	3.1
120.0	973.4	773.8	1173	20.5	6.8	3.0
125.0	839.8	664.1	1015	20.9	7.1	3.0

B57045K0473K000						
R/T No.	4003					
T (°C)	B _{25/100} = 4450 K, R ₂₅ = 47000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	4879100	3587600	6170700	26.5	3.9	6.8
-50.0	3464200	2594800	4333700	25.1	3.7	6.7
-45.0	2478000	1888500	3067400	23.8	3.6	6.6
-40.0	1785400	1383100	2187700	22.5	3.5	6.5
-35.0	1295600	1019200	1571900	21.3	3.3	6.4
-30.0	946690	755660	1137700	20.2	3.2	6.2
-25.0	695650	562980	828330	19.1	3.1	6.1
-20.0	515860	422960	608770	18.0	3.0	6.0
-15.0	384200	318930	449460	17.0	2.9	5.8
-10.0	288610	242420	334810	16.0	2.8	5.7
-5.0	217760	184960	250550	15.1	2.7	5.5
0.0	165640	142210	189080	14.1	2.6	5.4
5.0	126880	110040	143710	13.3	2.5	5.3
10.0	97906	85744	110070	12.4	2.4	5.1
15.0	76090	67260	84919	11.6	2.3	5.0
20.0	59531	53094	65969	10.8	2.2	4.9
25.0	47000	42300	51700	10.0	2.1	4.8
30.0	36825	32852	40798	10.8	2.3	4.6
35.0	29315	25943	32687	11.5	2.5	4.5
40.0	23470	20608	26333	12.2	2.8	4.4
45.0	18903	16471	21334	12.9	3.0	4.3
50.0	15302	13234	17370	13.5	3.2	4.2
55.0	12409	10654	14164	14.1	3.4	4.1
60.0	10118	8625	11611	14.8	3.7	4.0
65.0	8316	7040	9592	15.3	3.9	3.9
70.0	6869	5776	7963	15.9	4.1	3.8
75.0	5685	4748	6622	16.5	4.4	3.8
80.0	4725	3921	5529	17.0	4.6	3.7
85.0	3937	3246	4628	17.6	4.9	3.6
90.0	3292	2697	3886	18.1	5.1	3.5
95.0	2770	2256	3284	18.6	5.4	3.4
100.0	2340	1894	2785	19.0	5.7	3.4
105.0	1981	1594	2368	19.5	5.9	3.3
110.0	1683	1346	2019	20.0	6.2	3.2
115.0	1434	1141	1727	20.4	6.5	3.2
120.0	1225	969.5	1481	20.9	6.7	3.1
125.0	1050	826.1	1273	21.3	7.0	3.0

B57045K0683K000						
R/T No.	2005					
T (°C)	B _{25/100} = 4600 K, R ₂₅ = 68000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	8175000	5965800	10384000	27.0	4.0	6.8
-50.0	5812600	4324200	7301000	25.6	3.8	6.8
-45.0	4148200	3142200	5154200	24.3	3.6	6.8
-40.0	2972400	2290100	3654700	23.0	3.4	6.7
-35.0	2139200	1674800	2603700	21.7	3.3	6.6
-30.0	1546700	1229300	1864100	20.5	3.2	6.4
-25.0	1121300	904030	1338600	19.4	3.1	6.3
-20.0	820800	670780	970820	18.3	3.0	6.2
-15.0	601490	497900	705080	17.2	2.9	6.0
-10.0	445030	372910	517160	16.2	2.8	5.9
-5.0	332200	281610	382780	15.2	2.7	5.7
0.0	250110	214380	285840	14.3	2.6	5.6
5.0	190020	164600	215440	13.4	2.5	5.5
10.0	145460	127280	163650	12.5	2.3	5.3
15.0	112250	99162	125330	11.7	2.2	5.2
20.0	87197	77746	96649	10.8	2.1	5.1
25.0	68000	61200	74800	10.0	2.0	4.9
30.0	53307	47543	59071	10.8	2.3	4.8
35.0	42039	37183	46896	11.6	2.5	4.7
40.0	33356	29264	37448	12.3	2.7	4.6
45.0	26599	23152	30046	13.0	2.9	4.5
50.0	21332	18424	24240	13.6	3.1	4.3
55.0	17230	14769	19691	14.3	3.4	4.2
60.0	13984	11899	16070	14.9	3.6	4.1
65.0	11398	9629	13168	15.5	3.8	4.1
70.0	9334	7829	10839	16.1	4.1	4.0
75.0	7669	6389	8950	16.7	4.3	3.9
80.0	6328	5236	7420	17.3	4.6	3.8
85.0	5248	4314	6182	17.8	4.8	3.7
90.0	4370	3569	5171	18.3	5.1	3.6
95.0	3650	2962	4338	18.9	5.3	3.5
100.0	3060	2468	3652	19.4	5.6	3.5
105.0	2578	2067	3090	19.8	5.8	3.4
110.0	2180	1737	2623	20.3	6.1	3.3
115.0	1847	1463	2231	20.8	6.4	3.3
120.0	1569	1236	1903	21.2	6.6	3.2
125.0	1338	1048	1628	21.7	6.9	3.1

B57045K0104K000						
R/T No.	2005					
T (°C)	B _{25/100} = 4600 K, R ₂₅ = 100000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	12022000	8773300	15271000	27.0	4.0	6.8
-50.0	8548000	6359200	10737000	25.6	3.8	6.8
-45.0	6100400	4621000	7579800	24.3	3.6	6.8
-40.0	4371200	3367900	5374600	23.0	3.4	6.7
-35.0	3145900	2462900	3828900	21.7	3.3	6.6
-30.0	2274600	1807900	2741300	20.5	3.2	6.4
-25.0	1649000	1329500	1968500	19.4	3.1	6.3
-20.0	1207100	986430	1427700	18.3	3.0	6.2
-15.0	884550	732210	1036900	17.2	2.9	6.0
-10.0	654460	548400	760530	16.2	2.8	5.9
-5.0	488520	414130	562920	15.2	2.7	5.7
0.0	367810	315260	420350	14.3	2.6	5.6
5.0	279440	242050	316820	13.4	2.5	5.5
10.0	213910	187170	240660	12.5	2.3	5.3
15.0	165070	145830	184310	11.7	2.2	5.2
20.0	128230	114330	142130	10.8	2.1	5.1
25.0	100000	90000	110000	10.0	2.0	4.9
30.0	78393	69916	86870	10.8	2.3	4.8
35.0	61822	54681	68964	11.6	2.5	4.7
40.0	49053	43036	55071	12.3	2.7	4.6
45.0	39116	34046	44185	13.0	2.9	4.5
50.0	31371	27094	35647	13.6	3.1	4.3
55.0	25338	21720	28957	14.3	3.4	4.2
60.0	20565	17498	23632	14.9	3.6	4.1
65.0	16762	14160	19365	15.5	3.8	4.1
70.0	13726	11514	15939	16.1	4.1	4.0
75.0	11279	9395	13162	16.7	4.3	3.9
80.0	9305	7699	10911	17.3	4.6	3.8
85.0	7718	6344	9092	17.8	4.8	3.7
90.0	6426	5248	7605	18.3	5.1	3.6
95.0	5368	4356	6380	18.9	5.3	3.5
100.0	4500	3629	5370	19.4	5.6	3.5
105.0	3792	3039	4544	19.8	5.8	3.4
110.0	3206	2555	3858	20.3	6.1	3.3
115.0	2716	2152	3281	20.8	6.4	3.3
120.0	2308	1818	2798	21.2	6.6	3.2
125.0	1968	1541	2395	21.7	6.9	3.1

B57045K0154K000						
R/T No.	2005					
T (°C)	B _{25/100} = 4600 K, R ₂₅ = 150000 Ω, T _R = 25 °C, ΔR _R /R _R = ± 10%					
	R _{nom} [Ω]	R _{min} [Ω]	R _{max} [Ω]	ΔR _R /R _R [±%]	ΔT[±°C]	α (%/K)
-55.0	18033000	13160000	22906000	27.0	4.0	6.8
-50.0	12822000	9538700	16105000	25.6	3.8	6.8
-45.0	9150500	6931400	11370000	24.3	3.6	6.8
-40.0	6556900	5051800	8061900	23.0	3.4	6.7
-35.0	4718900	3694300	5743400	21.7	3.3	6.6
-30.0	3411900	2711800	4112000	20.5	3.2	6.4
-25.0	2473400	1994200	2952700	19.4	3.1	6.3
-20.0	1810600	1479700	2141500	18.3	3.0	6.2
-15.0	1326800	1098300	1555300	17.2	2.9	6.0
-10.0	981690	822600	1140800	16.2	2.8	5.9
-5.0	732790	621190	844380	15.2	2.7	5.7
0.0	551710	472890	630530	14.3	2.6	5.6
5.0	419150	363080	475230	13.4	2.5	5.5
10.0	320870	280750	360980	12.5	2.3	5.3
15.0	247600	218740	276460	11.7	2.2	5.2
20.0	192350	171500	213200	10.8	2.1	5.1
25.0	150000	135000	165000	10.0	2.0	4.9
30.0	117590	104870	130310	10.8	2.3	4.8
35.0	92733	82021	103450	11.6	2.5	4.7
40.0	73580	64554	82606	12.3	2.7	4.6
45.0	58673	51070	66277	13.0	2.9	4.5
50.0	47056	40642	53470	13.6	3.1	4.3
55.0	38008	32580	43436	14.3	3.4	4.2
60.0	30848	26247	35448	14.9	3.6	4.1
65.0	25143	21240	29047	15.5	3.8	4.1
70.0	20589	17271	23908	16.1	4.1	4.0
75.0	16918	14093	19743	16.7	4.3	3.9
80.0	13958	11549	16367	17.3	4.6	3.8
85.0	11577	9515	13638	17.8	4.8	3.7
90.0	9639	7872	11407	18.3	5.1	3.6
95.0	8052	6534	9569	18.9	5.3	3.5
100.0	6749	5443	8056	19.4	5.6	3.5
105.0	5688	4559	6816	19.8	5.8	3.4
110.0	4809	3832	5787	20.3	6.1	3.3
115.0	4074	3227	4921	20.8	6.4	3.3
120.0	3462	2727	4197	21.2	6.6	3.2
125.0	2952	2312	3592	21.7	6.9	3.1

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 $-25\text{ °C} \dots +45\text{ °C}$, relative humidity $\leq 75\%$ 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 (SO_x, 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 of 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).

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.**
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