

B57504K103A3 Datasheet



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DiGi Electronics Part Number	B57504K103A3-DG
Manufacturer	EPCOS - TDK Electronics
Manufacturer Product Number	B57504K103A3
Description	THERMISTOR NTC 10KOHM PROBE
Detailed Description	NTC Thermistor 10k Cylindrical Probe, Copper

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Purchase and inquiry

Manufacturer Product Number:

B57504K103A3

Series:

B57504

Resistance in Ohms @ 25°C:

10k

B Value Tolerance:

±1%

B25/50:

-

B25/85:

-

Operating Temperature:

-20°C ~ 85°C

Length - Lead Wire:

14.45" (367.00mm)

Package / Case:

Cylindrical Probe, Copper

Manufacturer:

EPCOS - TDK Electronics

Product Status:

Obsolete

Resistance Tolerance:

±2%

B0/50:

-

B25/75:

-

B25/100:

-

Power - Max:

60 mW

Mounting Type:

Free Hanging

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Affected

HTSUS:

8533.40.8070

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



Product Division: NTC

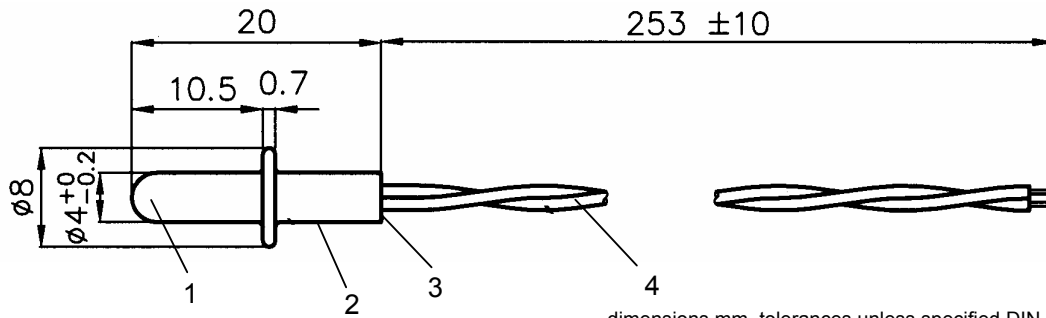
Product type: K504/10k/A3

Product name: NTC Probes

Ordering code: B57504K0103A003

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Version: NTC soldered to AWG26 wire
coated with epoxy resin and casted into stainless steel case



dimensions mm, tolerances unless specified DIN 2768-m

No.	Item	Material	Property	Remarks
1	Thermistor	Ceramic	EPCOS NTC	
2	Protecting tube	Stainless steel case		
3	Casting	epoxy resin		black
4	Wire	Cu silvered, AWG26	black insulation $\phi 1$ mm, heat proof 200°C	

Ratings and characteristics

Parameter	Specification	Test condition
Upper category temperature	120 °C	
Lower category temperature	-20°C	
Rated resistance R_n	3485 $\Omega \pm 2 \%$	
Rated temperature T_n	50 °C	
B-value : B(25/100)	3988 K $\pm 1 \%$	
R/T-curve Nr.	8016	
Resistance at 25 °C	9672 Ω	
Thermal time constant (25/85°C)	≤ 4 s	water
Withstand voltage	1250 V _{AC} (50 Hz, 1s)	

Remarks:

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NTC RESISTANCE-TEMPERATURE CURVE

R/T-Curve 8016
 R_N at 50 °C 3485 $\Omega \pm 2\%$
 $B(25/100)$ 3988 K $\pm 1\%$
 R at 25°C 9672 Ω

Temp. [°C]	R Nom [Ω]	R Min [Ω]	R Max [Ω]	ΔR [$\pm\%$]
-20	93891	88762	99020	5,5
-19	88600	83815	93385	5,4
-18	83642	79177	88108	5,3
-17	78993	74824	83163	5,3
-16	74633	70739	78527	5,2
-15	70541	66903	74179	5,2
-14	66699	63299	70099	5,1
-13	63091	59912	66270	5,0
-12	59701	56728	62674	5,0
-11	56514	53733	59296	4,9
-10	53518	50915	56121	4,9
-9	50686	48250	53122	4,8
-8	48022	45741	50302	4,7
-7	45514	43378	47650	4,7
-6	43153	41152	45154	4,6
-5	40929	39054	42804	4,6
-4	38834	37076	40591	4,5
-3	36859	35211	38507	4,5
-2	34996	33450	36542	4,4
-1	33239	31789	34689	4,4
0	31581	30220	32942	4,3
1	30011	28734	31288	4,3
2	28529	27330	29728	4,2
3	27129	26003	28255	4,2
4	25806	24749	26864	4,1
5	24556	23562	25550	4,0
6	23374	22440	24308	4,0
7	22256	21378	23134	3,9
8	21198	20372	22023	3,9
9	20196	19420	20973	3,8
10	19248	18518	19978	3,8
11	18348	17661	19035	3,7
12	17495	16848	18141	3,7
13	16686	16078	17295	3,6
14	15920	15347	16493	3,6

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Temp. [°C]	R Nom [Ω]	R Min [Ω]	R Max [Ω]	ΔR [±%]
15	15193	14654	15733	3,5
16	14504	13996	15012	3,5
17	13850	13372	14329	3,5
18	13230	12779	13680	3,4
19	12641	12216	13065	3,4
20	12081	11681	12481	3,3
21	11549	11172	11926	3,3
22	11044	10688	11400	3,2
23	10564	10228	10899	3,2
24	10107	9791	10423	3,1
25	9672	9374	9971	3,1
26	9259	8977	9540	3,0
27	8865	8599	9130	3,0
28	8490	8239	8740	3,0
29	8133	7897	8369	2,9
30	7793	7570	8016	2,9
31	7469	7258	7680	2,8
32	7160	6961	7359	2,8
33	6866	6678	7053	2,7
34	6585	6408	6762	2,7
35	6317	6150	6485	2,7
36	6062	5904	6220	2,6
37	5819	5669	5968	2,6
38	5586	5445	5727	2,5
39	5364	5231	5498	2,5
40	5153	5027	5278	2,4
41	4950	4831	5069	2,4
42	4756	4644	4869	2,4
43	4571	4465	4678	2,3
44	4395	4294	4495	2,3
45	4226	4131	4320	2,2
46	4064	3974	4154	2,2
47	3910	3825	3994	2,2
48	3762	3682	3842	2,1
49	3620	3545	3696	2,1
50	3485	3415	3555	2,0
51	3355	3285	3425	2,1
52	3231	3162	3299	2,1
53	3112	3044	3179	2,2
54	2998	2932	3064	2,2
55	2888	2824	2953	2,2
56	2784	2720	2847	2,3
57	2683	2621	2745	2,3
58	2587	2526	2648	2,3

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Temp. [°C]	R Nom [Ω]	R Min [Ω]	R Max [Ω]	ΔR [±%]
59	2495	2435	2554	2,4
60	2407	2348	2465	2,4
61	2322	2265	2379	2,5
62	2240	2184	2296	2,5
63	2162	2107	2217	2,5
64	2087	2033	2140	2,6
65	2015	1962	2067	2,6
66	1946	1894	1997	2,6
67	1879	1829	1929	2,7
68	1815	1766	1864	2,7
69	1754	1706	1802	2,7
70	1695	1648	1742	2,8
71	1638	1592	1684	2,8
72	1584	1539	1629	2,8
73	1532	1488	1575	2,9
74	1481	1438	1524	2,9
75	1433	1391	1475	2,9
76	1386	1345	1427	3,0
77	1341	1301	1382	3,0
78	1298	1259	1338	3,0
79	1257	1218	1295	3,1
80	1217	1179	1255	3,1
81	1178	1141	1215	3,1
82	1141	1105	1177	3,2
83	1105	1070	1140	3,2
84	1071	1036	1105	3,2
85	1037	1003	1071	3,3
86	1005	972	1038	3,3
87	974,1	941,8	1006,0	3,3
88	944,3	912,6	975,9	3,3
89	915,4	884,5	946,4	3,4
90	887,6	857,4	917,9	3,4
91	860,9	831,2	890,5	3,4
92	835,0	806,0	864,0	3,5
93	810,0	781,7	838,4	3,5
94	786,0	758,2	813,7	3,5
95	762,7	735,6	789,8	3,6
96	740,2	713,7	766,8	3,6
97	718,5	692,5	744,5	3,6
98	697,6	672,1	723,0	3,6
99	677,3	652,4	702,2	3,7
100	657,7	633,4	682,1	3,7
101	638,8	615,0	662,7	3,7
102	620,6	597,2	643,9	3,8

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Temp. [°C]	R Nom [Ω]	R Min [Ω]	R Max [Ω]	ΔR [$\pm\%$]
103	602,9	580,1	625,8	3,8
104	585,8	563,5	608,2	3,8
105	569,3	547,4	591,2	3,8
106	553,3	531,9	574,8	3,9
107	537,9	516,9	558,9	3,9
108	522,9	502,4	543,5	3,9
109	508,5	488,4	528,6	4,0
110	494,5	474,8	514,2	4,0
111	480,9	461,6	500,2	4,0
112	467,8	448,9	486,6	4,0
113	455,1	436,6	473,5	4,1
114	442,7	424,6	460,9	4,1
115	430,8	413,1	448,6	4,1
116	419,3	401,9	436,6	4,1
117	408,1	391,1	425,1	4,2
118	397,2	380,6	413,9	4,2
119	386,7	370,4	403,1	4,2
120	376,6	360,6	392,5	4,2

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RELIABILITY REQUIREMENTS:

Test	Test conditions	$\Delta R_{25}/R_{25}$ (typical)	Remarks
Storage in dry heat	Storage at upper category temperature in air Temperature: 125°C Voltage: 5 V _{DC} over serial resistance 6,8 kΩ Duration: 1000 h	< 2 %	No visible damage
Storage in coldness	Storage at lower category temperature in air Temperature: -20°C Voltage: 5 V _{DC} over serial resistance 6,8 kΩ Duration: 1000 h	< 2 %	No visible damage
Storage in damp heat, steady state	Temperature of air: 60°C Relative humidity of air: 93 % Voltage: 5 V _{DC} over serial resistance 6,8 kΩ Duration: 56 days	< 2 %	No visible damage
Vibration test DIN IEC 60068	Frequency range: 10 Hz to 2000 Hz Amplitude: 1.5 mm / 10 g Linear sweep; X,Y and Z direction for 2h each	< 3 %	No visible damage
Natural falling test	Drop Sensor 3 times from a height of 75 cm spontaneously onto hard surface	< 2 %	No visible damage
bending test	bend sensor head 5 times 90° to the left and right	< 2 %	No visible damage
boiling test	storage at 96°C in water for 6h then natural cooling for 16h	< 2 %	No visible damage

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