

Applications

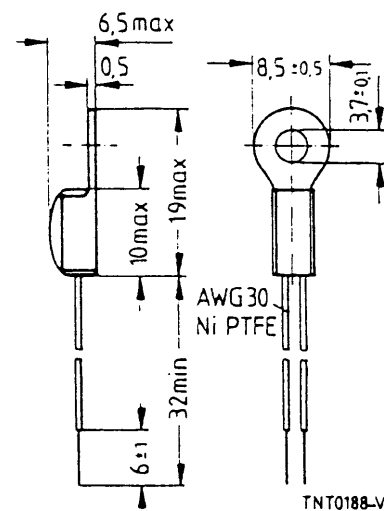
- High-accuracy surface temperature measurement, e.g. on housings and pipes

Features

- Thermistor encapsulated in metal-tag case
- PTFE-insulated leads of nickel wire, AWG 30
- Easy mounting
- Good thermal coupling through metal tag

Options

Alternative resistances, rated temperatures, tolerances and lead lengths available upon request



Dimensions in mm
Approx. weight 0.8 g

Climatic category (IEC 68-1)		55/125/56	
Max. power at 25 °C	P_{25}	150	mW
Resistance tolerance	$\Delta R/R_N$	± 2 %	
Rated temperature	T_N	25	°C
B value tolerance	$\Delta B/B$	± 1.5 %	
Dissipation factor (in air)	$\delta_{th}^{1)}$	approx. 2.6	mW/K
Thermal cooling time constant (in air)	$\tau_c^{1)}$	approx. 28	s
Heat capacity	$C_{th}^{1)}$	approx. 73	mJ/K
Test voltage ($t = 1$ s)		1	kV

Type	R_{25} Ω	No. of R/T characteristic	$B_{25/100}$ K	Ordering code
M 703/10 k/G	10 k	2001	3920	B57703-M103-G

¹⁾ Depends on mounting situation

Reliability data

Test	Standard	Test conditions	$\Delta R_{25}/R_{25}$ (typical)	Remarks
Storage in dry heat	IEC 68-2-2	Storage at upper category temperature T: 125 °C t: 1000 h	< 1 %	No visible damage
Storage in damp heat, steady state	IEC 68-2-3	Temperature of air: 40 °C Relative humidity of air: 93 % Duration: 56 days	< 0.5 %	No visible damage
Rapid temperature cycling	IEC 68-2-14	Lower test temperature: -55 °C Upper test temperature: 125 °C Number of cycles: 10	< 1 %	No visible damage
Endurance		P_{max} : 150 mW Duration: 1000 h	< 1 %	No visible damage
Long-term stability (empirical value)		Temperature: 125 °C Duration: 10 000 h	< 2 %	No visible damage

Number	2001		2002		2003		2004	
T (°C)	$B_{25/100} = 3920 \text{ K}$		$B_{25/100} = 3940 \text{ K}$		$B_{25/100} = 3980 \text{ K}$		$B_{25/100} = 4100 \text{ K}$	
	R_T/R_{25}	α (%/K)	R_T/R_{25}	α (%/K)	R_T/R_{25}	α (%/K)	R_T/R_{25}	α (%/K)
-55.0	87.762	7.1	88.463	7.2	97.578	7.5	99.552	7.6
-50.0	61.922	6.9	62.368	6.9	67.650	7.2	68.582	7.3
-45.0	44.168	6.7	44.461	6.7	47.538	7.0	47.963	7.0
-40.0	31.833	6.5	32.032	6.5	33.831	6.7	34.019	6.7
-35.0	23.173	6.3	23.312	6.3	24.359	6.5	24.448	6.5
-30.0	17.030	6.1	17.130	6.1	17.753	6.3	17.787	6.3
-25.0	12.621	5.9	12.695	5.9	13.067	6.0	13.083	6.1
-20.0	9.4515	5.8	9.5068	5.8	9.7228	5.8	9.7251	5.8
-15.0	7.1273	5.6	7.1700	5.6	7.3006	5.6	7.3160	5.6
-10.0	5.4270	5.5	5.4595	5.5	5.5361	5.5	5.5545	5.4
-5.0	4.1522	5.3	4.1779	5.3	4.2332	5.3	4.2531	5.3
0.0	3.2063	5.1	3.2263	5.1	3.2660	5.1	3.2836	5.1
5.0	2.5019	4.9	2.5112	4.9	2.5392	5.0	2.5512	5.0
10.0	1.9679	4.7	1.9707	4.7	1.9902	4.8	1.9973	4.8
15.0	1.5623	4.6	1.5618	4.6	1.5709	4.7	1.5738	4.7
20.0	1.2488	4.5	1.2465	4.5	1.2492	4.5	1.2488	4.5
25.0	1.0000	4.3	1.0000	4.3	1.0000	4.4	1.0000	4.5
30.0	0.81105	4.2	0.80868	4.2	0.80575	4.3	0.80080	4.3
35.0	0.65930	4.1	0.65735	4.1	0.65326	4.1	0.64733	4.2
40.0	0.53922	4.0	0.53754	4.0	0.53290	4.0	0.52628	4.0
45.0	0.44345	3.9	0.44242	3.8	0.43715	3.9	0.43263	3.9
50.0	0.36674	3.7	0.36605	3.8	0.36064	3.8	0.35708	3.9
55.0	0.30513	3.6	0.30398	3.7	0.29908	3.7	0.29406	3.8
60.0	0.25514	3.5	0.25373	3.5	0.24932	3.6	0.24342	3.7
65.0	0.21457	3.4	0.21310	3.4	0.20886	3.5	0.20278	3.6
70.0	0.18131	3.4	0.17982	3.4	0.17578	3.4	0.16964	3.5
75.0	0.15360	3.3	0.15227	3.3	0.14863	3.3	0.14257	3.4
80.0	0.13064	3.2	0.12948	3.2	0.12621	3.2	0.12028	3.4
85.0	0.11155	3.1	0.11034	3.2	0.10763	3.1	0.10196	3.3
90.0	0.095606	3.0	0.094357	3.0	0.092159	3.1	0.086757	3.3
95.0	0.082347	3.0	0.081215	3.0	0.079225	3.0	0.073804	3.2
100.0	0.071180	2.9	0.070155	2.9	0.068356	2.9	0.062974	3.0
105.0	0.061779	2.8	0.060801	2.8	0.059247	2.8	0.054276	2.9
110.0	0.053799	2.8	0.052869	2.8	0.051531	2.8	0.046943	3.0
115.0	0.046970	2.7	0.046109	2.7	0.044921	2.7	0.040576	2.9
120.0	0.041132	2.6	0.040336	2.6	0.039282	2.7	0.035174	2.8
125.0	0.036141	2.6	0.035408	2.6	0.034387	2.6	0.030637	2.7
130.0	0.031847	2.5	0.031170	2.5	0.030186	2.5	0.026760	2.7
135.0	0.028153	2.4	0.027502	2.5	0.026650	2.5	0.023425	2.6

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	R_T/R_{25}	$\alpha (\%/K)$	R_T/R_{25}	$\alpha (\%/K)$	R_T/R_{25}	$\alpha (\%/K)$	R_T/R_{25}	$\alpha (\%/K)$
140.0	0.024955	2.4	0.024329	2.4	0.023594	2.4	0.020559	2.6
145.0	0.022158	2.4	0.021563	2.4	0.020931	2.4	0.018097	2.5
150.0	0.019722	2.3	0.019157	2.3	0.018616	2.3	0.015969	2.5
155.0	0.017607	2.2	0.017074	2.3	0.016612	2.3	0.014129	2.4
160.0	0.015756	2.2	0.015253	2.2	0.014861	2.2	0.012534	2.4
165.0	0.014132	2.2	0.013654	2.2	0.013327	2.2	0.011146	2.3
170.0	0.012703	2.1	0.012248	2.1	0.011980	2.1	0.0099357	2.3
175.0	0.011444	2.1	0.011016	2.1	0.010794	2.1	0.0088782	2.2
180.0	0.010331	2.1	0.009927	2.1	0.0097471	2.1	0.0079517	2.2