

## NTC Surface Mount – Solid Body

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### Features

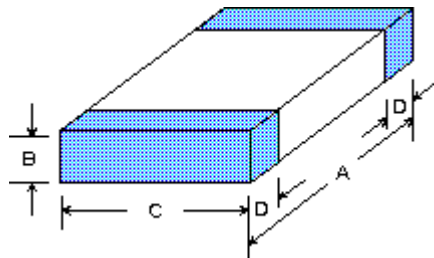
- Nickel Barrier (Tin-Lead wrap around (3-sided) terminations)
- Tape & Reeling
- 0805, and 0603 Sizes
- 3%, 5% and 10% Tolerances
- NTC Thick Film on Alumina Substrate (100% Solid State)

### Applications

- Temperature Measurement
- Temperature Measurement & Control
- Temperature Compensation

### Specifications

- Rated Power: 1mW (Max. power under continuous power)
- Dissipation Constant: 1.5 mW/°C (Power required to raise part 1 °C)
- Thermal Time Constant: <5 Sec. (Time required for a 63.2% change in resistance when temperature is changed)



## 0603 Size Electrical Specification Table

Part Number	$\Omega$ @ 25 °C +/- 10%	Curve	TCR @ 25 °C (%/°C)	Dimensions in inches (millimeters)			
				A +/- 0.012" (0.30mm)	B +/- 0.012" (0.30mm)	C +/- 0.012" (0.30mm)	D +/- 0.012" (0.30mm)
WM075D201	200	D	-3.30	0.100 (2.54)	0.052 (1.32)	0.085 (2.2)	0.018 (0.46)
WM080D251	250	D	-3.30	0.100 (2.54)	0.040 (1.02)	0.085 (2.2)	0.018 (0.46)
WM085D501	500	D	-3.30	0.110 (2.79)	0.035 (0.89)	0.060 (1.5)	0.018 (0.46)
WM090D681	680	D	-3.30	0.110 (2.79)	0.032 (0.81)	0.060 (1.5)	0.018 (0.46)
WM095D102	1000	D	-3.30	0.125 (3.18)	0.030 (076)	0.040 (1.0)	0.018 (0.46)
WM100K252	2500	K	-3.83	0.110 (2.79)	0.050 (1.27)	0.080 (2.0)	0.018 (0.46)
WM105K502	5000	K	-3.83	0.100 (2.54)	0.039 (0.99)	0.058 (1.5)	0.018 (0.46)
WM110K602	6000	K	-3.83	0.100 (2.54)	0.034 (0.86)	0.056 (1.4)	0.018 (0.46)
WM115K702	7000	K	-3.83	0.100 (2.54)	0.029 (0.74)	0.056 (1.4)	0.018 (0.46)
WM120K802	8000	K	-3.83	0.100 (2.54)	0.028 (0.71)	0.052 (1.3)	0.018 (0.46)
WM125K103	10000	K	-3.83	0.100 (2.54)	0.023 (0.58)	0.051 (1.3)	0.018 (0.46)
WM130K153	15000	K	-3.83	0.100 (2.54)	0.019 (0.48)	0.043 (1.1)	0.018 (0.46)
WM150B303	30000	B	-4.40	0.100 (2.54)	0.038 (0.97)	0.060 (1.5)	0.018 (0.46)
WM155B403	40000	B	-4.40	0.100 (2.54)	0.032 (0.81)	0.053 (1.3)	0.018 (0.46)
WM160B503	50000	B	-4.40	0.100 (2.54)	0.027 (0.69)	0.053 (1.3)	0.018 (0.46)
WM165B603	60000	B	-4.40	0.100 (2.54)	0.022 (0.56)	0.053 (1.3)	0.018 (0.46)
WM170B803	80000	B	-4.40	0.100 (2.54)	0.017 (043)	0.053 (1.3)	0.018 (0.46)
WM175B104	100000	B	-4.40	0.100 (2.54)	0.018 (0.46)	0.043 (1.1)	0.018 (0.46)

## Options

- Tape and Reeling
- Special Resistance Values
- Optional Electrode Materials (Pd-Ag, etc.)
- Resistance Tolerance: +/- 5% available (add -5 to part number)  
example: WM105K502-5

## Terminology

TCR (Temperature Coefficient of Resistance) - Defined as a slope parameter using the following equation:  $TCR = 1/R_t [(dR_t)/(dT)]$

## CURVE DATA (Temperature - Resistance)

### CURVE "K"

**(0-70 in 1°C increments)**

Temperature		Resistance	Temperature		Resistance
°C	°F	Ratio (R/R25)	°C	°F	Ratio (R/R25)
0	32	2.816	36	97	0.6641
1	34	2.692	37	99	0.6406
2	36	2.576	38	100	0.6181
3	37	2.465	39	102	0.5965
4	39	2.360	40	104	0.5758
5	41	2.260	41	106	0.5559
6	43	2.164	42	108	0.5368
7	45	2.074	43	109	0.5185
8	46	1.987	44	111	0.5008
9	48	1.905	45	113	0.4839
10	50	1.827	46	115	0.4676
11	52	1.751	47	117	0.4520
12	54	1.680	48	118	0.4370
13	55	1.612	49	120	0.4225
14	57	1.546	50	122	0.4085

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15	59	1.485	51	124	0.3953
16	61	1.426	52	126	0.3823
17	63	1.370	53	127	0.3700
18	64	1.316	54	129	0.3581
19	66	1.264	55	131	0.3467
20	68	1.216	56	133	0.3356
21	70	1.168	57	135	0.3250
22	72	1.123	58	136	0.3147
23	73	1.080	59	138	0.3049
24	75	1.039	60	140	0.2954
25	77	1.0000	61	142	0.2862
26	79	0.9623	62	144	0.2774
27	81	0.9264	63	145	0.2689
28	82	0.8921	64	147	0.2607
29	84	0.8590	65	149	0.2527
30	86	0.8276	66	151	0.2450
31	88	0.7973	67	153	0.2377
32	90	0.7684	68	154	0.2305
33	91	0.7405	69	156	0.2238
34	93	0.7140	70	158	0.2171
35	95	0.6885			

**CURVE "B"**

**(0-70 in 1°C increments)**

Temperature		Resistance	Temperature		Resistance
°C	°F	Ratio (R/R25)	°C	°F	Ratio (R/R25)
0	32	3.2657	36	97	0.6268
1	34	3.1036	37	99	0.6016
2	36	2.9505	38	100	0.5776
3	37	2.8058	39	102	0.5546
4	39	2.6690	40	104	0.5327

5	41	2.5396	41	106	0.5117
6	43	2.4174	42	108	0.4918
7	45	2.3018	43	109	0.4726
8	46	2.1922	44	111	0.4543
9	48	2.0886	45	113	0.4369
10	50	1.9904	46	115	0.4201
11	52	1.8974	47	117	0.4041
12	54	1.8093	48	118	0.3889
13	55	1.7258	49	120	0.3742
14	57	1.6465	50	122	0.3602
15	59	1.5715	51	124	0.3467
16	61	1.5003	52	126	0.3340
17	63	1.4327	53	127	0.3217
18	64	1.3684	54	129	0.3099
19	66	1.3074	55	131	0.2986
20	68	1.2495	56	133	0.2878
21	70	1.1944	57	135	0.2774
22	72	1.1421	58	136	0.2675
23	73	1.0923	59	138	0.2580
24	75	1.0451	60	140	0.2488
25	77	1.0000	61	142	0.2400
26	79	0.9573	62	144	0.2316
27	81	0.9166	63	145	0.2235
28	82	0.8778	64	147	0.2157
29	84	0.8409	65	149	0.2083
30	86	0.8057	66	151	0.2011
31	88	0.7722	67	153	0.1941
32	90	0.7403	68	154	0.1876
33	91	0.7099	69	156	0.1813
34	93	0.6809	70	158	0.1752
35	95	0.6532			