



NTC THERMISTORS: TYPE ND

CHIP THERMISTOR WITH OR WITHOUT WIRES

DESCRIPTION:

A range of resin-coated chips with wires (bare or insulated) and uncoated, unwired chips with thick film silver electrodes.

FEATURES:

- Designed for accurate temperature measurement, control & compensation
- Tight tolerances on resistance and B value
- Operation up to 155°C with excellent stability
- Small body size
- Fast response
- Available with nickel or monel (cupronickel) wires to limit heat conduction
- Epoxy resin provides voltage insulation
- Suitable for automotive, HVAC & white goods applications

CODING

To identify the wire style required, replace * in the codes shown as follows:

- Bare $d = 0.2\text{mm}$ tinned monel** K
- Bare $d = 0.25\text{mm}$ tinned copper** L
- Bare $d = 0.2\text{mm}$ tinned copper** M
- PTFE-insulated $d = 0.25\text{mm}$ nickel** P
- No wires** U, and replace C with B

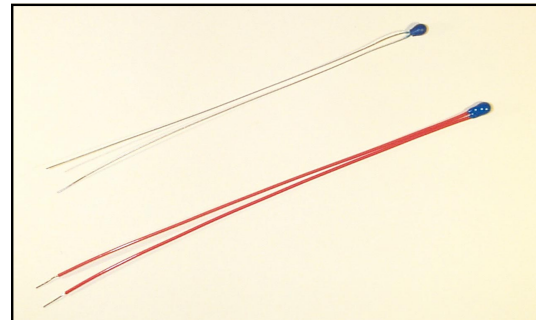
DATA

NDK, NDL, NDM & NDP TYPES:

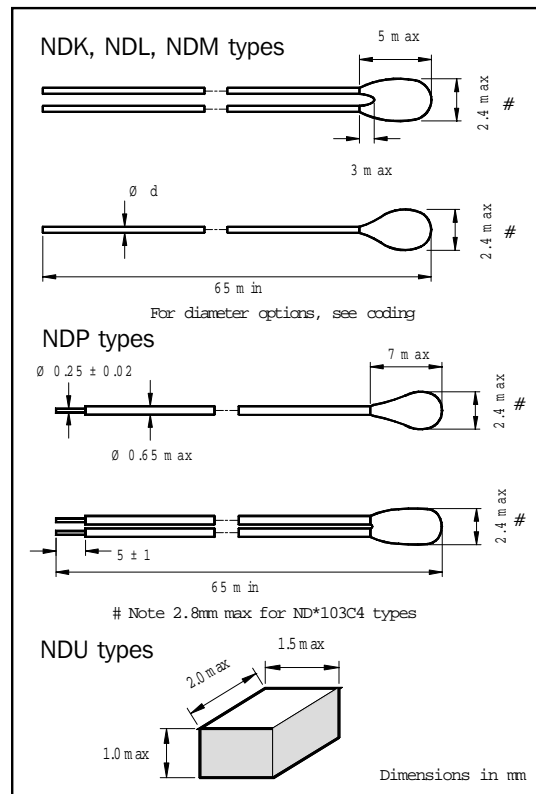
- Minimum operating temperature** -40°C
- Maximum operating temperature** See table
- Thermal time constant** <10s (NDL & NDM)
..... <20s (NDK & NDP)
- Dissipation factor** 2.2mW/K (NDL & NDM)
..... 1.5mW/K (NDK & NDP)
- Voltage insulation** 500V d.c.
- Wire insulation** . Cadmium-free red PTFE (NDP)
- Packing / MOQ** 500/box

NDU TYPES:

- Minimum operating temperature** -40°C
- Maximum operating temperature** See table
- Resistance tolerance** $\pm 3\%$ or greater
- Electrode** Thick film silver
- Packing / MOQ** 1000/box
- Note: NDU types are not available in material systems 4 & 5.**



DIMENSIONS:



OPTIONS:

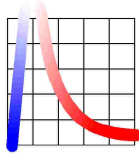
- Other resistance values within the ranges shown e.g. code ND*152C2R1 for $1500\Omega \pm 1\%$ at 25°C
- Resistance values outside the ranges shown with modified dimensions
- Reference temperatures in the range 0°C up to the maximum operating temperature
- Wire lengths 30 to 600mm ($\pm 1\text{mm}$ or $\pm 2\%$, whichever is the greater)
- Other wire materials
- Other wire colours (white, black, blue, green, yellow, orange)

Data sheet D-ND-5

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R 25 Ω	Material system	B 25/85 K	Maximum operating temperature °C	Code				
				R 25 $\pm 1\%$	R 25 $\pm 2\%$	R 25 $\pm 3\%$	R 25 $\pm 5\%$	R 25 $\pm 10\%$
1000	2	3540 $\pm 1\%$	125	ND *102C 2R 1	ND *102C 2R 2	ND *102C 2R 3	ND *102C 2R 5	ND *102C 2R 10
2000	2	3540 $\pm 1\%$	125	ND *202C 2R 1	ND *202C 2R 2	ND *202C 2R 3	ND *202C 2R 5	ND *202C 2R 10
5000	2	3540 $\pm 1\%$	125	ND *502C 2R 1	ND *502C 2R 2	ND *502C 2R 3	ND *502C 2R 5	ND *502C 2R 10
1000	2A	3627 $\pm 1\%$	125	ND *102C 2AR 1	ND *102C 2AR 2	ND *102C 2AR 3	ND *102C 2AR 5	ND *102C 2AR 10
2000	2A	3627 $\pm 1\%$	125	ND *202C 2AR 1	ND *202C 2AR 2	ND *202C 2AR 3	ND *202C 2AR 5	ND *202C 2AR 10
5000	2A	3627 $\pm 1\%$	125	ND *502C 2AR 1	ND *502C 2AR 2	ND *502C 2AR 3	ND *502C 2AR 5	ND *502C 2AR 10
2700	1	3977 $\pm 0.75\%$	155	ND *272C 1R 1	ND *272C 1R 2	ND *272C 1R 3	ND *272C 1R 5	ND *272C 1R 10
5000	1	3977 $\pm 0.75\%$	155	ND *502C 1R 1	ND *502C 1R 2	ND *502C 1R 3	ND *502C 1R 5	ND *502C 1R 10
10000	1	3977 $\pm 0.75\%$	155	ND *103C 1R 1	ND *103C 1R 2	ND *103C 1R 3	ND *103C 1R 5	ND *103C 1R 10
30000	1	3977 $\pm 0.75\%$	155	ND *303C 1R 1	ND *303C 1R 2	ND *303C 1R 3	ND *303C 1R 5	ND *303C 1R 10
47000	1	3977 $\pm 0.75\%$	155	ND *473C 1R 1	ND *473C 1R 2	ND *473C 1R 3	ND *473C 1R 5	ND *473C 1R 10
50000	1	3977 $\pm 0.75\%$	155	ND *503C 1R 1	ND *503C 1R 2	ND *503C 1R 3	ND *503C 1R 5	ND *503C 1R 10
2700	3	3960 $\pm 1\%$	155	ND *272C 3R 1	ND *272C 3R 2	ND *272C 3R 3	ND *272C 3R 5	ND *272C 3R 10
5000	3	3960 $\pm 1\%$	155	ND *502C 3R 1	ND *502C 3R 2	ND *502C 3R 3	ND *502C 3R 5	ND *502C 3R 10
10000	3	3960 $\pm 1\%$	155	ND *103C 3R 1	ND *103C 3R 2	ND *103C 3R 3	ND *103C 3R 5	ND *103C 3R 10
30000	3	3960 $\pm 1\%$	155	ND *303C 3R 1	ND *303C 3R 2	ND *303C 3R 3	ND *303C 3R 5	ND *303C 3R 10
47000	3	3960 $\pm 1\%$	155	ND *473C 3R 1	ND *473C 3R 2	ND *473C 3R 3	ND *473C 3R 5	ND *473C 3R 10
50000	3	3960 $\pm 1\%$	155	ND *503C 3R 1	ND *503C 3R 2	ND *503C 3R 3	ND *503C 3R 5	ND *503C 3R 10
12000	5	3740 $\pm 1.5\%$	125	ND *123C 5R 1	ND *123C 5R 2	ND *123C 5R 3	ND *123C 5R 5	ND *123C 5R 10
5000	4A	3435 $\pm 1\%$	155	ND *502C 4AR 1	ND *502C 4AR 2	ND *502C 4AR 3	ND *502C 4AR 5	ND *502C 4AR 10
10000	4A	3435 $\pm 1\%$	155	ND *103C 4AR 1	ND *103C 4AR 2	ND *103C 4AR 3	ND *103C 4AR 5	ND *103C 4AR 10
30000	4	3435 $\pm 1\%$	110	ND *303C 4R 1	ND *303C 4R 2	ND *303C 4R 3	ND *303C 4R 5	ND *303C 4R 10
50000	4	3435 $\pm 1\%$	110	ND *503C 4R 1	ND *503C 4R 2	ND *503C 4R 3	ND *503C 4R 5	ND *503C 4R 10
100000	4	3435 $\pm 1\%$	110	ND *104C 4R 1	ND *104C 4R 2	ND *104C 4R 3	ND *104C 4R 5	ND *104C 4R 10

See separate tables for resistance - temperature data

Data sheet D-ND-5

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